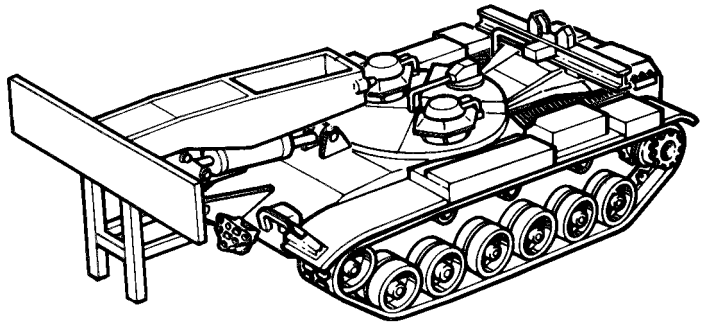
TM 5-5420-202-20-3

TECHNICAL MANUAL

ORGANIZATIONAL MAINTENANCE

This copy is a reprint which includes current pages from Changes 1 - 6.



M60A1 TANK CHASSIS, TRANSPORTING: FOR BRIDGE, ARMORED-VEHICLE-LAUNCHED; SCISSORING TYPE, CLASS 60

(5420-00-889-2020)

HEADQUARTERS, DEPARTMENT OF THE ARMY

OCTOBER 1985

WARNING

CARBON MONOXIDE POISONING CAN BE DEADLY

Carbon monoxide is a colorless, odorless, deadly poisonous gas, which when breathed deprives the body of oxygen and causes suffocation. Exposure to air contaminated with carbon monoxide produces symptoms of headache, dizziness, loss of muscular control, apparent drowsiness, and/or coma. Permanent brain damage or death can result from severe exposure. Carbon monoxide occurs in the exhaust fumes of fuel-burning heaters and internal-combustion engines and becomes dangerously concentrated under conditions of inadequate ventilation. The following precautions must be observed to make sure of the safety of personnel whenever the personnel heater, main or auxiliary engine of any vehicle is operated for maintenance purposes or tactical use.

1. DO NOT operate heater or engine of vehicle in an enclosed area unless the area is ADEQUATELY VENTILATED.

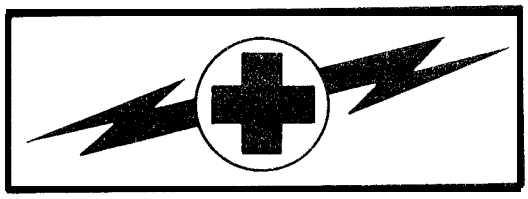
2. DO NOT idle engine for long periods without maintaining ADEQUATE VENTILATION in personnel compartments.

3. DO NOT drive any vehicle with inspection plates, cover plates, or engine compartment doors removed unless necessary for maintenance purposes.

4. BE ALERT at all times during vehicle operation for exhaust odors and exposure symptoms. If either are present, IMMEDIATELY VENTILATE personnel compartments. If symptoms persist, remove affected personnel from vehicle and treat as follows: expose to fresh air; keep warm; DO NO PERMIT PHYSICAL EXERCISE.
   For artificial respiration, refer to FM 4-25.11.

THE BEST DEFENSE AGAINST CARBON MONOXIDE POISONING IS ADEQUATE VENTILATION.

WARNING



WARNING

HIGH VOLTAGE
Used in the operation of this equipment

DEATH ON CONTACT
May result if personnel fail to observe safety precautions.

Never work on electronic equipment unless there is another person nearby who is familiar with the operation and hazards of the equipment and who is competent in administering first aid. When a technician is aided by operators, he must warn them about dangerous areas.

Whenever possible, the master battery switch and battery ground straps should be either turned off or disconnected before beginning work on the equipment.

Whenever the nature of the operation permits, keep one hand away from the equipment to reduce the hazard of current flowing through vital organs of the body.

Before you work around tracked vehicles, remove rings, bracelets, and wristwatches. These items may be caught on projections and cause injury or may be shorted across an electrical circuit and cause severe burns and electrical shock.

For artificial respiration, refer to FM 4-25.11.

WARNING

HAZARDOUS NOISE

1. Hearing protection (helmet) required.

2. Double hearing protection (helmet and ear plugs) required on road marches at speeds over 15 mph.

WARNING

The following summary list is adapted from the warnings within this volume. However, all warnings should be observed as noted in the text.

Hold up rear drain valve seat when removing last screw attaching valve seat to hull floor. Valve seat is heavy and can cause injury if it falls.

Hold up front drain valve cage assembly when removing last screw attaching cage to hull. Valve assembly may fall and cause injury if cage is not held up.

Handle charged fire extinguisher cylinders with care. Do not jar or subject cylinders to temperature above 140 degrees F (60 degrees C).

Driver's hatch cover weighs approximately 130 pounds. Do not try to lift it alone.

The unit commander or senior officer in charge of maintenance personnel assigned to remove and dispose of contaminated gas filters must prescribe necessary protective clothing to be worn when replacing gas particulate filters. He must also prescribe necessary safety measures to be performed before new gas filters are installed.

Contaminated gas particulate filters must be handled in accordance with FM 3-5 and must be disposed of by trained personnel.

Compressed air used for cleaning purposes will not exceed 30 psi. Use only with effective chip guarding and personal protective equipment (goggles/shield, gloves, etc.).

FRH hydraulic fluid may contain Tricresyl Phosphate which, if taken internally, can produce paralysis. Hydraulic fluid may be absorbed through the skin. Wear long sleeves, gloves, goggles, and face shield. If FRH gets in eyes, wash them immediately and get medical aid immediately. If FRH gets on skin, thoroughly wash with soap and water. Wash hands thoroughly prior to eating or smoking. Application of these measures is considered an effective control of the hazard.

Dry cleaning solvent P-D-680 is toxic end flammable. To prevent personal injury, wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point for Type #1 Dry Cleaning Solvent is 100°F (38°C) and for Type #2 is 137°F (50°C). If you become dizzy while using cleaning solvent, get frest air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

Remove all jewelry such as rings, watches, dog tags, bracelets, etc. If jewelry or disconnected battery ground cable contacts battery terminal, a direct short can result, causing instant heating of jewelry and tools, severe injury to personnel, or damage to equipment.

Battery acid (electrolyte) is extremely harmful. Always wear safety goggles and rubber gloves, and don't smoke while servicing batteries. Severe injury will result if acid contacts eyes or skin.

WARNING

Failure to correctly connect brake quick disconnect will result in brake failure and could cause serious injury or death.

TM 5-5420-202-20-3
C6

CHANGE

NO. 6

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., 14 October 2005

ORGANIZATIONAL MAINTENANCE

M60A1 TANK CHASSIS, TRANPORTING: FOR BRIDGE, ARMORED-VEHICLE-LAUNCHED; SCISSORING TYPE, CLASS 60 (5420-00-889-2020)

TM 5-5420-202-20-3, dated 28 October 1985, is changed as follows:

1. Remove old pages and insert new pages as indicated below.

2. New or changed material is indicated by a vertical bar in the margin of the page.

Remove Page	Insert Pages
a through c/d (blank)	a through d
13-47 through 13-54	13-47 through 13-54
Sample DA Forms 2028-2	Sample DA Forms 2028
DA Forms 2028-2	DA Forms 2028

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
0521304

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CHANGE

NO. 5

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., 26 July 1995

ORGANIZATIONAL,

MAINTENANCE MANUAL

M60A1 TANK CHASSIS,

TRANSPORTING:

**FOR BRIDGE,
ARMORED-VEHICLE-LAUNCHED**

SCISSORING TYPE, CLASS 60

(NSN 5420-00-889-2020)

TM 5-5420-202-20-3, dated 28 October 1985, is changed as follows:

1. Remove old pages and insert new pages as indicated below.

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Remove Pages	Insert Pages
16-21 thru 16-24	16-21 thru 16-24

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General, United States Army
Chief of Staff

Official:

JOEL B. HUDSON
Acting Administrative Assistant to the
Secretary of the Army
00437

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Posted

CHANGE

NO. 4

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D. C., *13 February 1992*

TECHNICAL MANUAL

ORGANIZATIONAL MAINTENANCE

M60A1 TANK CHASSIS,
TRANSPORTING:
FOR BRIDGE,
ARMORED-VEHICLE-LAUNCHED:
SCISSORING TYPE, CLASS 60
(5420-00-889-2020)

TM 5-5420-202-20-3, 28 October 1985, is changed as follows:

1. Remove old pages and insert new pages as indicated below.

2. New or changed material is indicated by a vertical bar in the margin of the page.

Remove Pages	Insert Pages
10-303 and 10-304	10-303 and 10-304
10-313 and 10-314	10-313 and 10-314
11-41 and 11-42	11-41 and 11-42
11-51 and 11-52	11-51 and 11-52
11-83 thru 11-86	11-83 thru 11-86
11-89 thru 11-92	11-89 thru 11-92
11-95 and 11-96	11-95 and 11-96
12-1 thru 12-4	12-1 thru 12-4
None	12-4.1/(12-4.2 blank)
12-5 and 12-6	12-5 and 12-6
12-15 and 12-16	12-15 and 12-16
12-21 thru 12-23/(12-24 blank)	12-21 thru 12-24
None	12-25 thru 12-33/(12-34 blank)
13-107 and 13-108	13-107 and 13-108
14-1 and 14-2	14-1 and 14-2
14-9 thru 14-14	14-9 thru 14-14
None	14-14.1 thru 14-14.3/(14-14.4 blank)
14-15 thru 14-20	14-15 thru 14-20
14-23 thru 14-34	14-23 thru 14-34
14-37 thru 14-42	14-37 thru 14-42
14-45 thru 14-54	14-45 thru 14-54
14-59 and 14-60	14-59 and 14-60

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

Remove Pages	Insert Pages
14-65 thru 14-72	14-65 thru 14-72
14-77 thru 14-82	14-77 thru 14-82
14-87 and 14-88	14-87 and 14-88
None	14-88.1 thru 14-88.4
14-89 thru 14-92	14-89 thru 14-92
14-95 and 14-96	14-95 and 14-96
None	14-98.1 thru 14-98.4
14-99 and 14-100	14-99 and 14-100

By Order of the Secretary of the Army:

GORDON R. SULLIVAN
General, United States Army
Chief of Staff

Official:

MILTON H. HAMILTON
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00627

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To be distributed in accordance with DA Form 12-37-E, Block 1049, Unit maintenance requirements for TM 5-5420-202-20-3.

Posted

TM 5-5420-202-20-3
C3

CHANGE

NO. 3

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., *2 December 1987*

Organizational Maintenance

M60A1 TANK CHASSIS, TRANSPORTING:
FOR BRIDGE, ARMORED-VEHICLE-LAUNCHED;
SCISSORING TYPE, CLASS 60

(5420-00-889-2020)

TM 5-5420-202-20-3, 28 October 1985, is changed as follows:

1. Remove old pages and insert new pages as indicated below.

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Remove Pages	Insert Pages
12-15 thru 12-18	12-15 thru 12-18
None	12-18.1 and 12-18.2
12-21 and 12-22	12-21 and 12-22

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CHANGE

NO. 2

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., *8 June 1987*

TECHNICAL MANUAL
ORGANIZATIONAL MAINTENANCE

M60A1 TANK CHASSIS, TRANSPORTING: FOR BRIDGE, ARMORED-VEHICLE-LAUNCHED; SCISSORING TYPE, CLASS 60

(5420-00-889-2020)

TM 5-5420-202-20-3, October 1985, is changed as follows:

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Remove Pages	Insert Pages
11-1 and 11-2	11-1 and 11-2
11-85 and 11-86	11-85 and 11-86
NONE	11-86.1 and 11-86.2
11-95 and 11-96	11-95 and 11-96
14-21 thru 14-24	14-21 thru 14-24
14-31 and 14-32	14-31 and 14-32
14-53 and 14-54	14-53 and 14-54
14-77 and 14-78	14-77 and 14-78
14-87 and 14-88	14-87 and 14-88

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Chief of Staff

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R.L. DILWORTH
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The Adjutant General

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CHANGE

NO. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, D.C., 1 May 1986

TECHNICAL MANUAL
ORGANIZATIONAL MAINTENANCE

M60A1 TANK CHASSIS, TRANSPORTING: FOR BRIDGE, ARMORED-VEHICLE-LAUNCHED; SCISSORING TYPE, CLASS 60

(5420-00-889-2020)

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Remove Pages	Insert Pages
c/(d blank)	c/(d blank)
10-1 and 10-2	10-1 and 10-2
10-267 and 10-268	10-267 and 10-268
10-297 and 10-298	10-297 and 10-298
None	10-298.1 thru 10-298.20

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LIST OF EFFECTIVE PAGES

INSERT LATEST CHANGED PAGES. DESTROY SUPERSEDED PAGES.

Note: The portion of the text affected by the changes is indicated by a vertical line or an asterisk.

Dates of issue for original and changed pages are :

Original __ 0 ..... 28 October 1985
Change .... 1 ..... 1 May 1986
Change .... 2 ..... 8 June 1987
Change .... 3 ..... 2 December 1987
Change ___ 4 ..... 13 February 1992
Change ___ 5 ..... 26 July 1995
Change 6 ..... 14 October 2005

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b	0	10-29	0	10-76	0
c	6	10-30	0	10-77	0
d	6	10-31	0	10-78	0
CTP C5	5	10-32	0	10-79	0
CTP C5 Back	5	10-33	0	10-80	0
CTP C4	4	10-34	0	10-81	0
CTP C4 Back	4	10-35	0	10-82	0
CTP C3	3	10-36	0	10-83	0
CTP C3 Back	3	10-37	0	10-84	0
CTP C2	2	10-38	0	10-85	0
CTP C2	2	10-39	0	10-86	0
CTP C1	1	10-40	0	10-87	0
CTP C1 Back	1	10-41	0	10-88	0
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10-178	0	10-239	0	10-298.2 ADDED	1
10-179	0	10-240	0	10-298.3 ADDED	1
10-180	0	10-241	0	10-298.4 ADDED	1

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10-298.6 ADDED	1	11-19	0	11-80	0
10-298.7 ADDED	1	11-20	0	11-81	0
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10-298.10 ADDED	1	11-23	0	11-84	4
10-298.11 ADDED	1	11-24	0	11-85	4
10-298.12 ADDED	1	11-25	0	11-86	2
10-298.13 ADDED	1	11-26	0	11-86.1 ADDED	2
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10-298.15 ADDED	1	11-28	0	11-87	0
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Page No.	*Change No.
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Technical Manual
No. 5-5420-202-20-3

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON,D.C. *28 October 1985*

ORGANIZATIONAL MAINTENANCE MANUAL

M60A1 TANK CHASSIS, TRANSPORTING: BRIDGE, ARMORED-VEHICLE-LAUNCHED: SCISSORING TYPE; CLASS 60

NSN 5420-00-889-2020

REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual to: Commander, U.S. Army Tank Automotive Command, ATTN: AMSTA-MBC, Warren, Michigan 48397-5000. A reply will be furnished to you.

TABLE OF CONTENTS

VOLUME 1

★This manual together with TM 5-5420-202-20-1, TM 5-5420-202-20-2 and TM 5-5420-202-20-4 supersedes TM 5-5420-202-20,14 January 1976.

TABLE OF CONTENTS - Continued

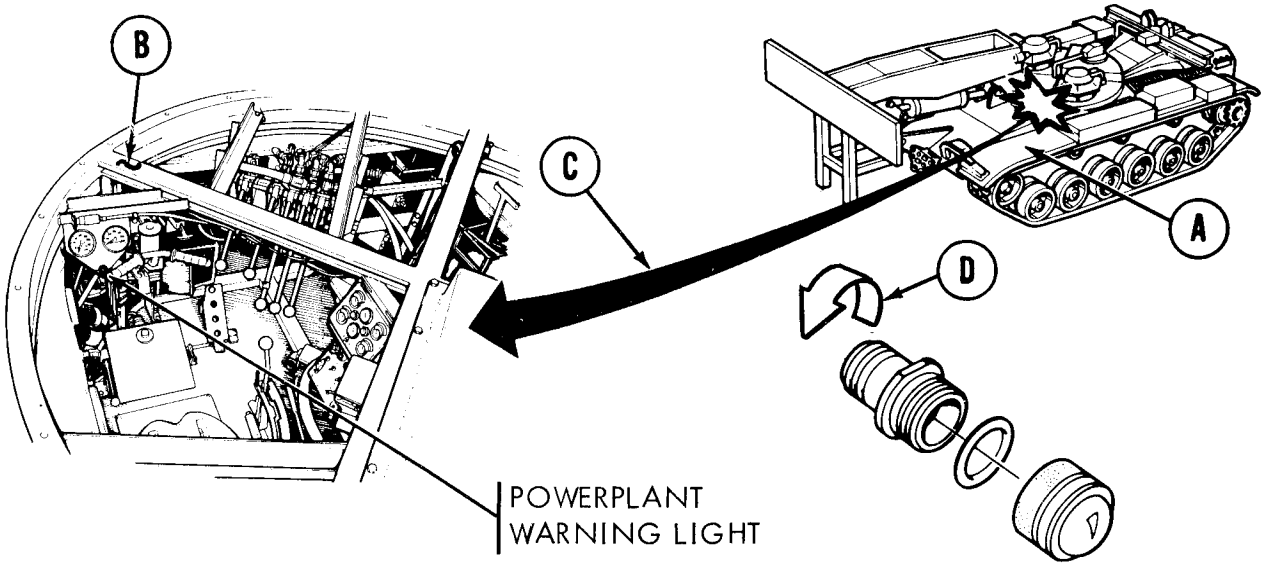
VOLUME 2

TABLE OF CONTENTS - Continued

VOLUME 4- Continued

HOW TO USE THIS MANUAL:

- Manual is divided into chapters.
- Chapters are by functional group code and are presented in same order as the RPSTL (Repair Parts and Special Tools List).
- Procedure indexes are on procedures that are four pages or more, and indicate how the procedure is set up, i.e., disassembly, removal, cleaning, inspection, etc.
- All references within this technical manual refer to page numbers.
- Steps are numbered and are to be performed in that order.
- Be sure to read all NOTES, WARNINGS, and CAUTIONS.
- Locator views are included wherever necessary. These will help you locate the item which the procedure is referencing.
- Jagged circle (✱) on locator (A) indicates a cutout and means the item is inside the vehicle.
- A (~) symbol represents the outside surface (B) of a piece of equipment that cannot be shown in its entirety.
- Callouts are shown by a circle with a letter inside.
- Locator arrows (C) are black, and mechanical motion arrows (D) are white.
- Broken leader arrow (⇢) indicates the item is either inside or under the vehicle and cannot be seen.



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HOW TO USE THIS MANUAL - Continued

- An illustrated list of manufactured items includes complete instructions for making items authorized to be manufactured or fabricated and used at organizational maintenance.
- A maintenance information index lists all parts subject to maintenance tasks. It provides the location of all maintenance tasks related to a component in this manual.
- Certain sections of the manual have detailed “how to use” instructions at the beginning of the section - for example troubleshooting.
- As a general maintenance practice, throw away all removed lockwashers, locknuts, and cotter pins, and replace with new lockwashers, locknuts, and cotter pins at installation.

CHAPTER 10

ELECTRICAL SYSTEM MAINTENANCE

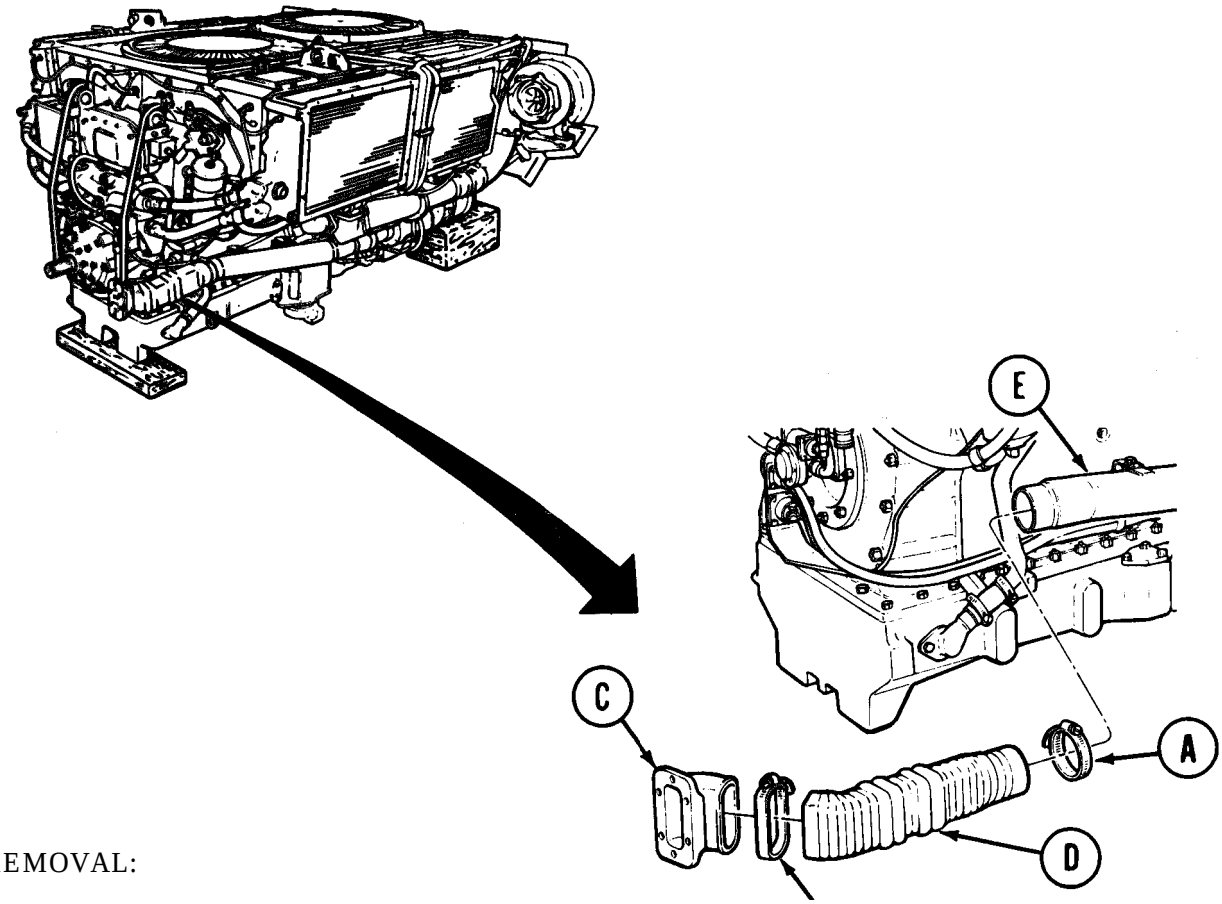
INDEX

GENERATOR AIR INTAKE TUBE ASSEMBLY REPLACEMENT (Sheet 1 of 3)

TOOLS: 1/2 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
Flat-tip screwdriver

SUPPLIES: Rags (Item 65, Appendix D)
Dry cleaning solvent (Item 55, Appendix D)
Alcohol (Item 8, Appendix D)
Gloves (Item 69, Appendix D)
Goggles (Item 70, Appendix D)

PRELIMINARY PROCEDURE: Remove powerplant (page 5-2)



REMOVAL:

1. Using flat-tip screwdriver, loosen two clamps (A) and (B).

2. Remove elbow (C), hose (D), and clamps (A) and (B) from tube (E).

Go on to Sheet 2

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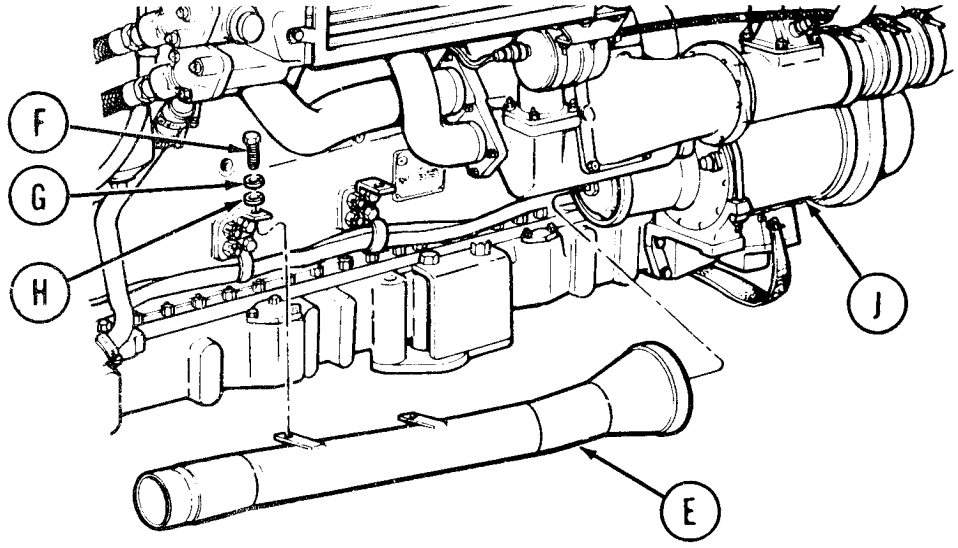
GENERATOR AIR INTAKE TUBE ASSEMBLY REPLACEMENT (Sheet 2 of 3)



3. Using socket, remove two bolts (F), lockwashers (G), and flat washers (H).

4. Remove tube (E) from generator (J).

WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. To prevent personal injury, wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point for Type #1 Dry Cleaning Solvent is 100°F (38°C) and for Type #2 is 138°F (50°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

INSPECTION:

1. Using alcohol and rags, clean hose. Inspect for cracks and breaks.

2. Using dry cleaning solvent, clean tube and mounting hardware.

3. Using rags, wipe tube and mounting hardware. Inspect for bends, breaks, and cracks. Replace parts as required if defective.

Go on to Sheet 3

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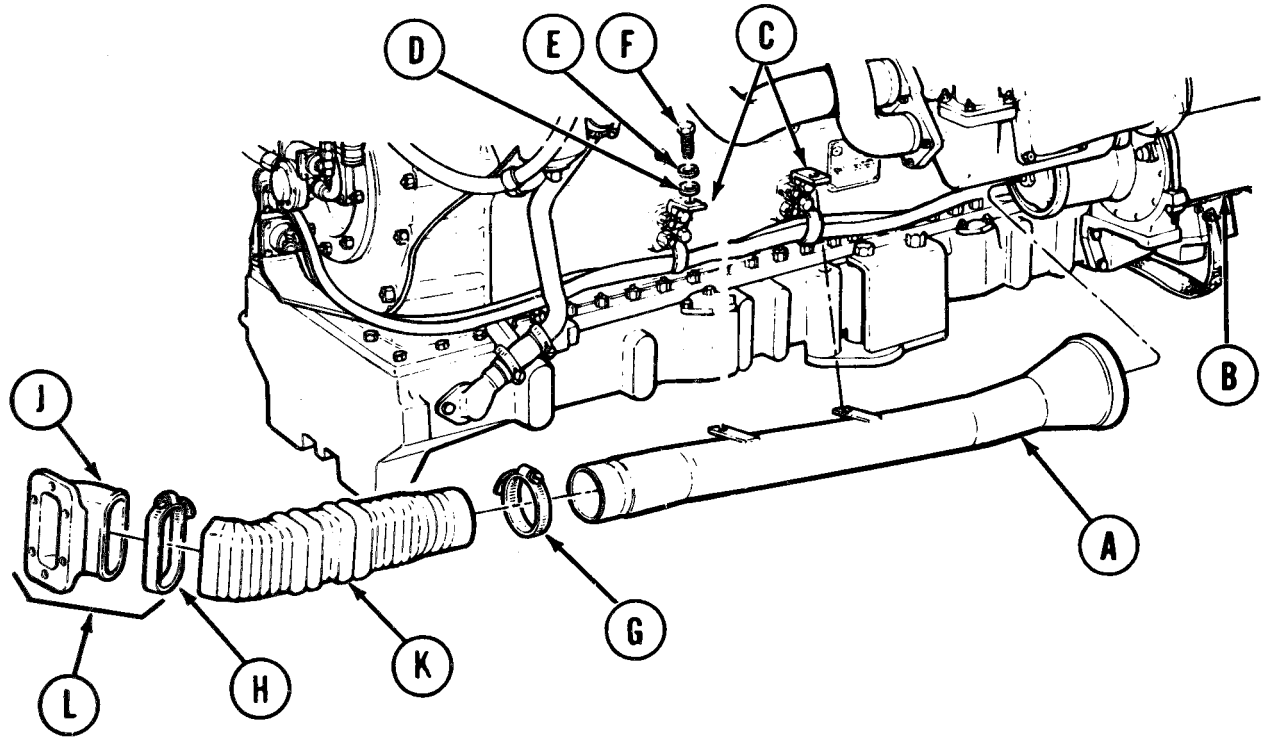
GENERATOR AIR INTAKE TUBE ASSEMBLY REPLACEMENT (Sheet 3 of 3)



INSTALLATION:

1. Install tube (A) to generator (B) and angle brackets (C) on engine.
2. Install two flat washers (D), new lockwashers (E), and bolts (F) to brackets (C).
3. Using socket, tighten bolts (F) to tube (A).
4. Install clamp (G) to tube (A).
5. Install clamp (H) to elbow (J).
6. Install hose (K) to tube (A).
7. Install assembled elbow (L) to hose (K).
8. Move clamps (G) and (H) onto hose (K).
9. Using flat-tip screwdriver, tighten clamps (G) and (H).
10. Install powerplant (page 5-14).

End of Task

TA248946

ENGINE GENERATOR REPLACEMENT (Sheet 1 of 8)

PROCEDURE INDEX

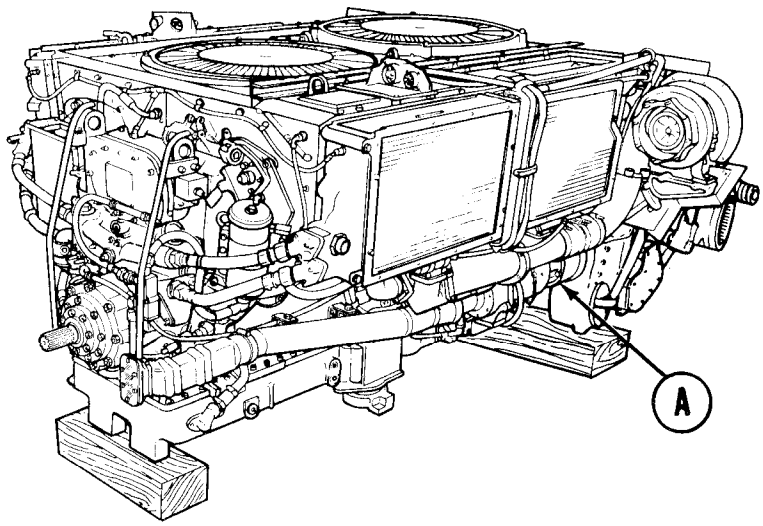
TOOLS: Spanner wrench
9/16 in. socket with 1/2 in drive
Pliers, slip joint
Ratchet with 1/2 in. drive
1/2 in. combination box and open end wrench
Flat-tip screwdriver
3/8 in. socket with 1/2 in. drive
1/2 in. socket with 1/2 in. drive
Diagonal cutting pliers
9/16 in. combination box and open end wrench

SPECIAL TOOLS: Ground hop kit (Item 31, Chapter 3, Section I)
Box wrench (Item 4, Chapter 3, Section I)

SUPPLIES: Silicone compound (Item 32, Appendix D)
Two wooden blocks
Lock washers

PERSONNEL: Two

PRELIMINARY PROCEDURE: Remove powerplant (page 5-2)
Remove air intake tube assembly (page 10-3)



REMOVAL:

1. Place two wooden blocks under generator (A).

Go on to Sheet 2

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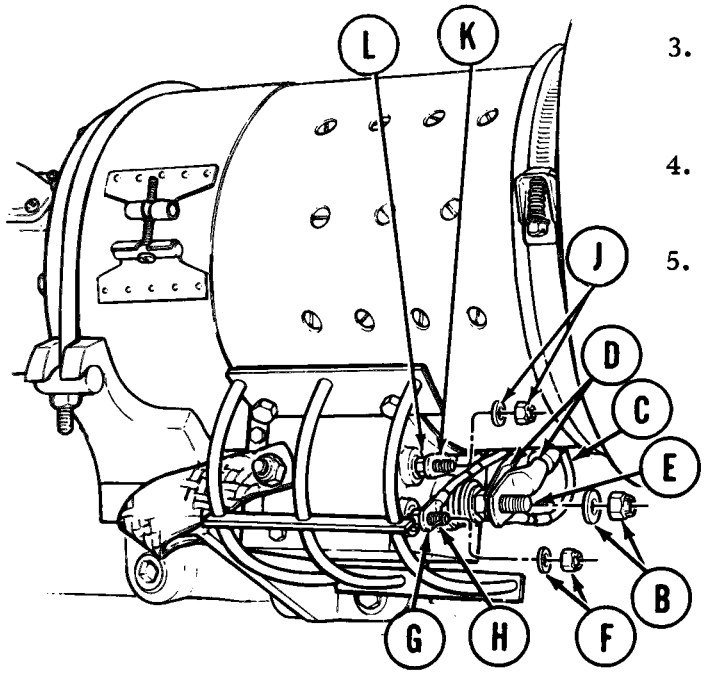
ENGINE GENERATOR REPLACEMENT (Sheet 2 of 8)

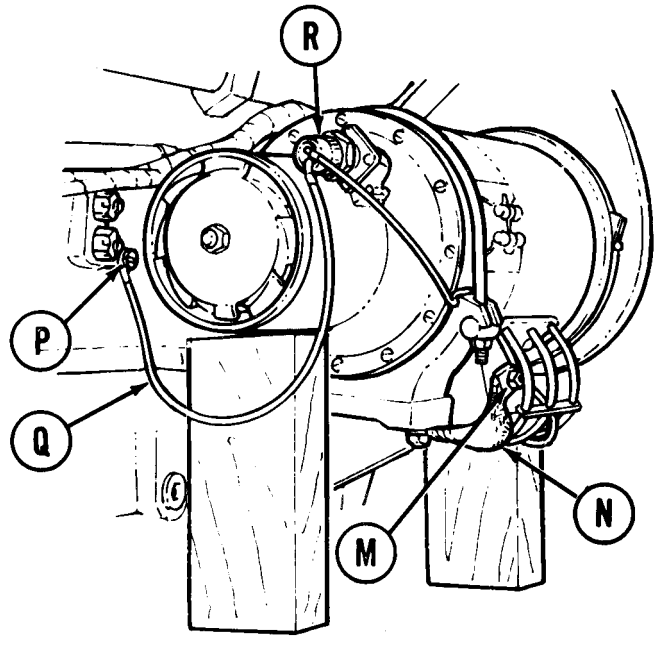


2. Using 9/16 inch socket, remove nut and flat washer (B).

3. Disconnect cable (C) and two electrical leads (D) from terminal marked “B” (E).

4. Using 3/8 inch socket, remove nut and flat washer (F).

5. Disconnect electrical lead (G) from terminal marked “D” (CKT 478) (H).



6. Using 3/8 inch socket, remove nut and flat washer (J).

7. Disconnect electrical lead (K) from terminal marked “A”, (CKT 1) (L).

8. Using 9/16 inch socket, remove nut and flat washer (M).

9. Disconnect ground lead (N).

10. Using 1/2 inch socket, remove screw and lockwasher (P).

11. Disconnect electrical lead (Q).

12. Using spanner wrench, remove electrical connector (R).

Go on to Sheet 3

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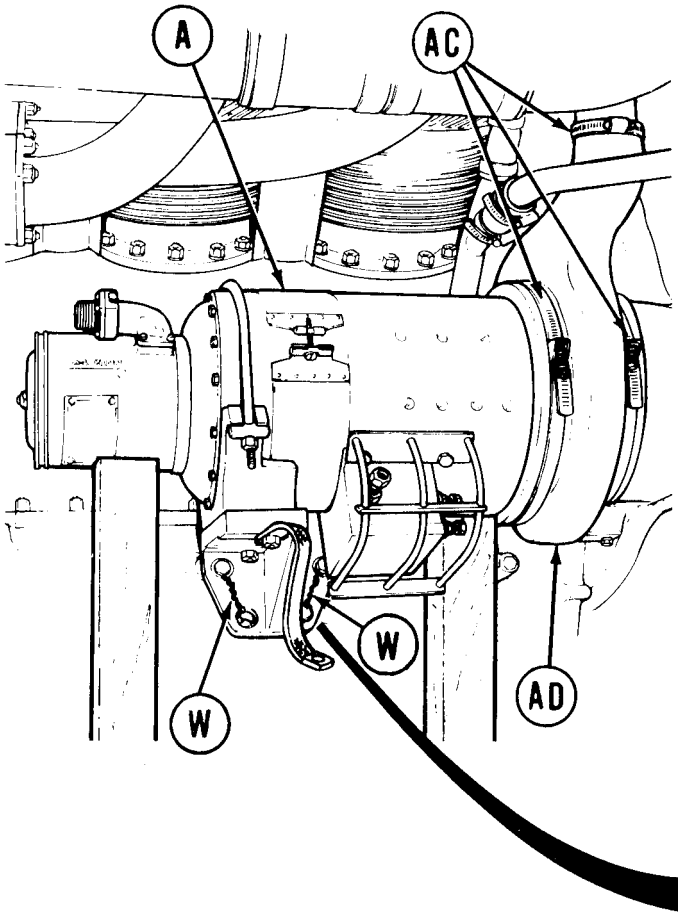
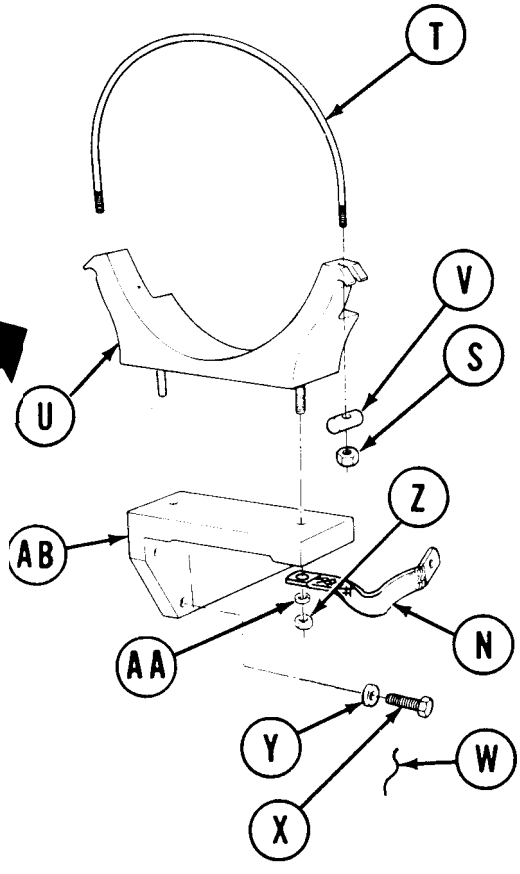
ENGINE GENERATOR REPLACEMENT (Sheet 3 of 8)



13. Using 1/2 inch wrench, loosen two nuts (S) which hold U-bolt (T) to cradle (U) until clamping bars (V) are free.

14. Using diagonal cutting pliers, cut lockwire (W).

15. Using 9/16 inch socket or 9/16 inch wrench, remove four screws (X) and flat washers (Y).



16. Using 9/16 inch socket, remove two nuts (Z) and flat washers (AA).

17. Remove ground lead (N).

18. Remove bracket (AB), cradle (U), and U-bolt (T) as one whole assembly from generator (A).

19. Using screwdriver, loosen three boot clamps (AC).

CAUTION

Boot (AD) is easily damaged. Be careful to prevent ripping or puncturing boot (AD).

20. Slide boot clamps (AC) and boot (AD) over generator (A) to gain access fo removal of mounting nuts.

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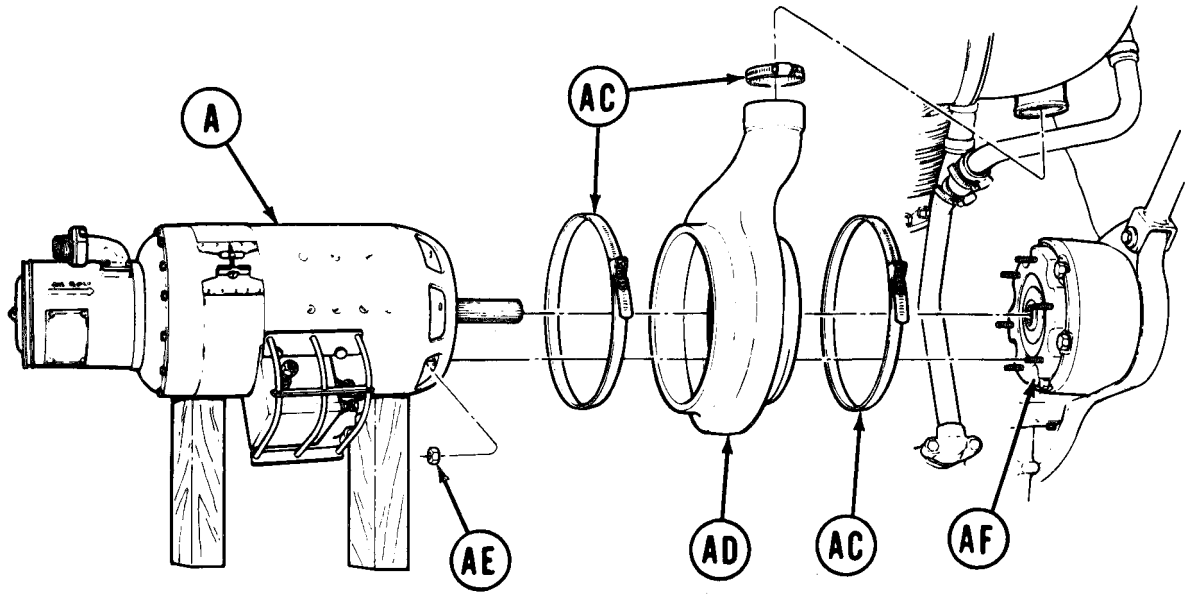
ENGINE GENERATOR REPLACEMENT (Sheet 4 of 8)

21. Using special box wrench, loosen six nuts (AE). Do not remove nuts (AE) from drive adapter (AF).



22. Using two technicians, rotate generator (A) counterclockwise until openings in flange are alined with nuts (AE).

WARNING

Generator (A) weighs approximately 100 pounds. Injury to personnel or damage to equipment could result through careless handling.

23. Using two technicians, remove generator (A) by sliding it away from drive adapter (AF).

24. Remove boot clamps (AC) and boot (AD) from generator (A).

25. Using special box wrench, remove six nuts (AE).

Go on to Sheet 5

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ENGINE GENERATOR REPLACEMENT (Sheet 5 of 8)

INSTALLATION:

1. Make sure wooden blocks are positioned under right manifold heater.

WARNING

Generator (A) weighs approximately 100 pounds. Injury to personnel or damage to equipment could result through careless handling.

2. Using two technicians, place generator (A) on wood blocks.

3. Install six nuts (B) to drive adapter (C). Do not tighten nuts (B).

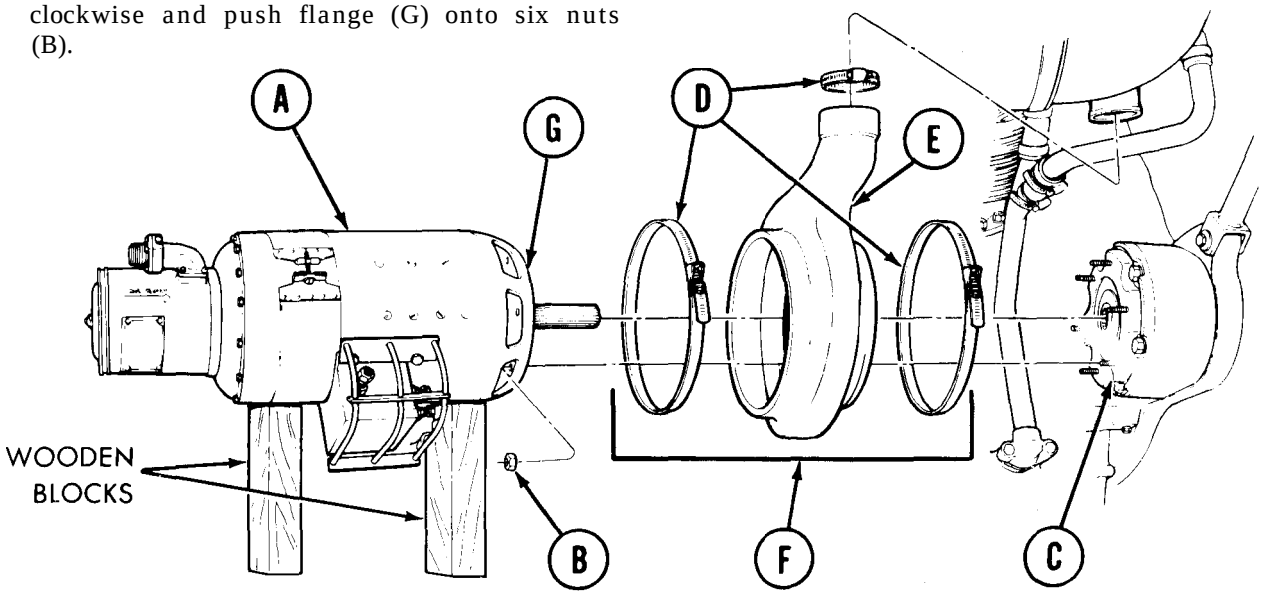
4. Install three boot clamps (D) to boot (E).

NOTE

Apply silicone compound to the inside of the generator boot sealing surfaces before installation.

5. Install assembled boot (F) to generator (A).

6. Using two technicians, aline generator flange (G) to six nuts (B). Rotate generator (A) clockwise and push flange (G) onto six nuts (B).



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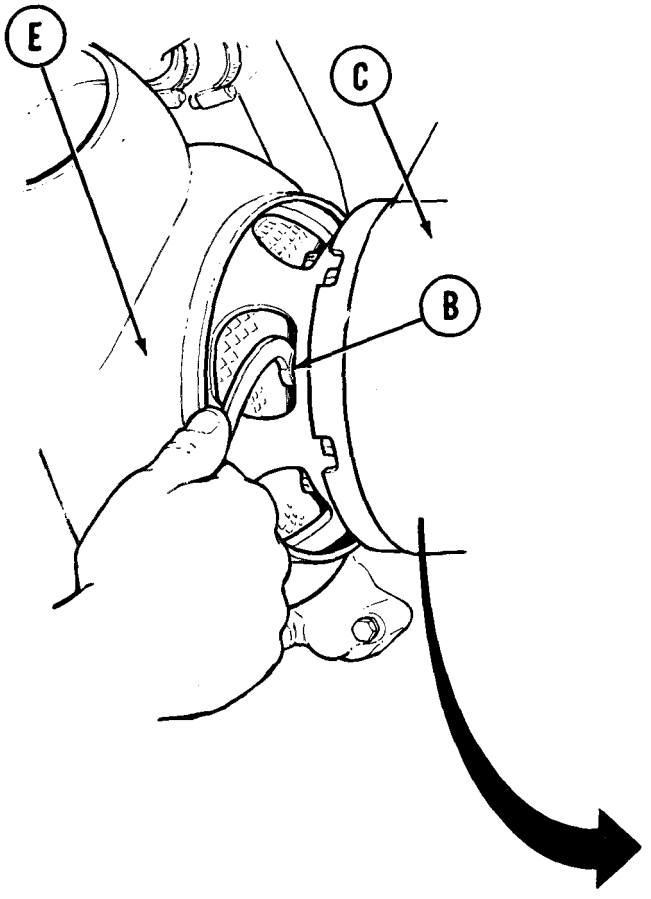
ENGINE GENERATOR REPLACEMENT (Sheet 6 of 8)



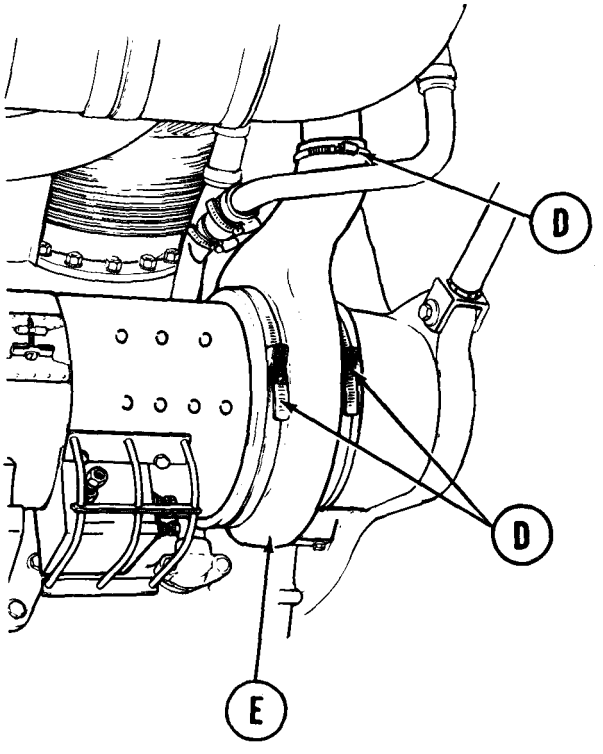
7. Using special box wrench, tighten six nuts (B).

CAUTION

Exercise care to prevent damage to boot (E).

8. Position boot (E) onto drive adapter (C).

9. Position three boot clamps (D) over boot (E).



10. Using screwdriver, tighten three boot clamps (D).

CAUTION

It is of utmost importance that the generator support, cradle, and "U" bolt be installed in a manner that will not disturb generator mounting alinement and still furnish adequate support to minimize vibration. Misalinement of 0.010 in. in any direction is sufficient to cause a leak (pressure loss) between the generator mounting flange and the generator mounting adapter.

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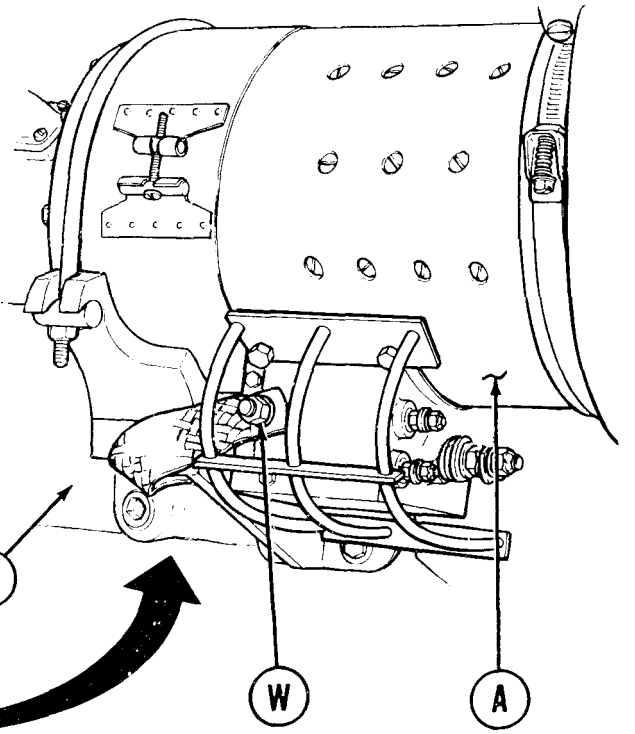
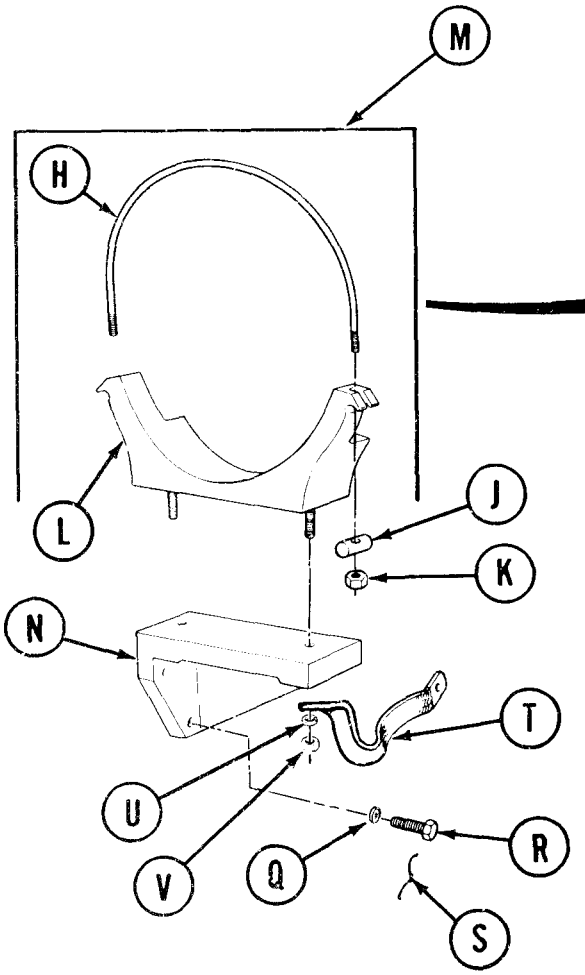
ENGINE GENERATOR REPLACEMENT (Sheet 7 of 8)

11. Assemble U-bolt (H), two bars (J), and two nuts (K) to cradle (L).

12. Mount assembled cradle (M) under generator (A).

13. Install bracket (N) to oil pan (P) and assembled cradle (M).





14. Using 9/16 inch socket or wrench, install four flat washers (Q) and screws (R) to bracket (N).

15. Using pliers, install new lockwire (S) to screws (R).

16. Using 9/16 inch socket, install ground lead (T), two flat washers (U), and nuts (V).

17. Using 1/2 inch wrench, tighten nuts (V).

18. Using 9/16 inch socket, install ground lead (T), and flat washer (U) and nut (W) to generator (A).

Go on to Sheet 8

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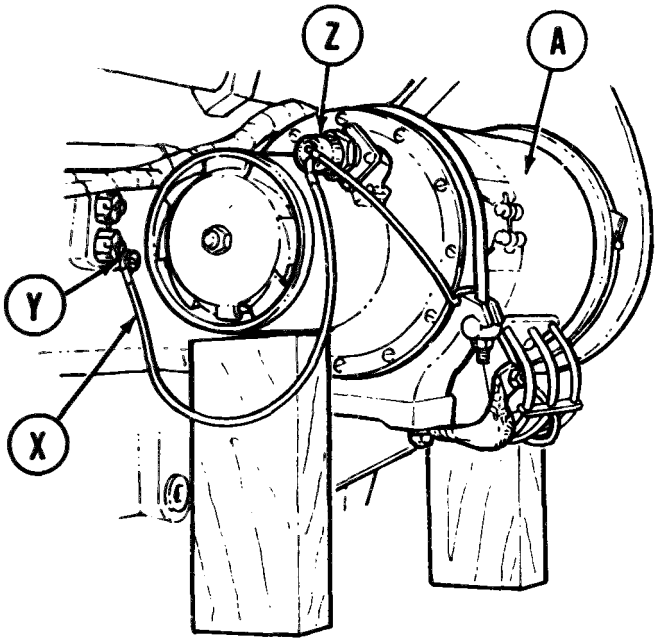
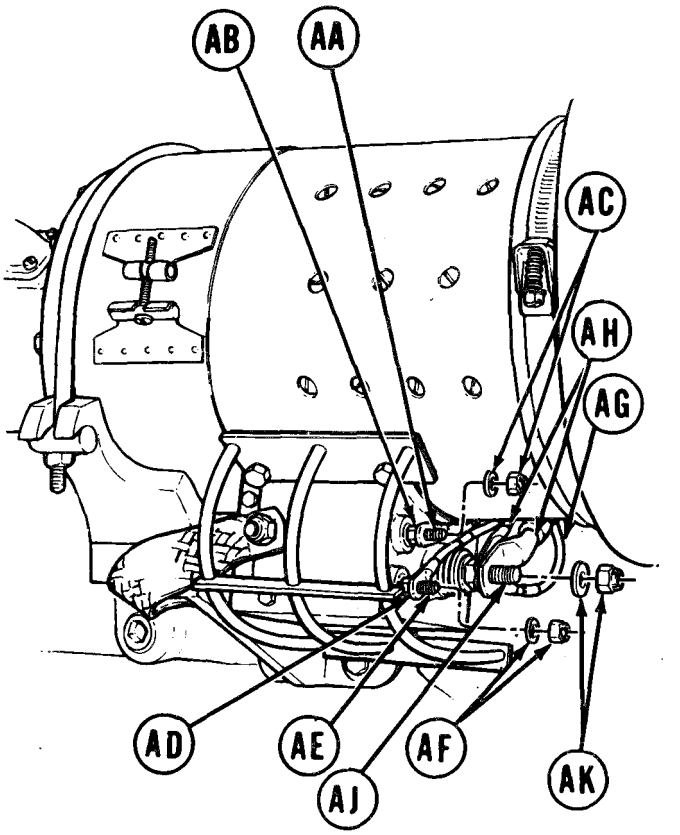
ENGINE GENERATOR REPLACEMENT (Sheet 8 of 8)



19. Using 1/2 inch socket, install electrical lead (X) and screw and new lockwasher (Y).

20. Using spanner wrench, install electrical connector (Z).



21. Install electrical lead (CKT 1) (AA) to terminal marked "A" (AB).

22. Using 3/8 inch socket, install flat washer and nut (AC).

23. Install electrical lead (CKT 478) (AD) to terminal marked "D" (AE).

24. Using 3/8 inch socket, install flat washer and nut (AF).

25. Install cable (AG) and two electrical leads (AH) to terminal marked "B" (AJ).

26. Using 9/16 inch socket, install flat washer and nut (AK).

27. Remove two wooden blocks from under generator (A).

28. Install air intake tube assembly (page 10-5).

29. Using ground hop kit, perform powerplant test run (page 5-26).

30. Install powerplant (page 5-14).

End of Task

TA248954

GENERATOR AIR EXHAUST PIPE AND HOSE REPLACEMENT (Sheet 1 of 4)

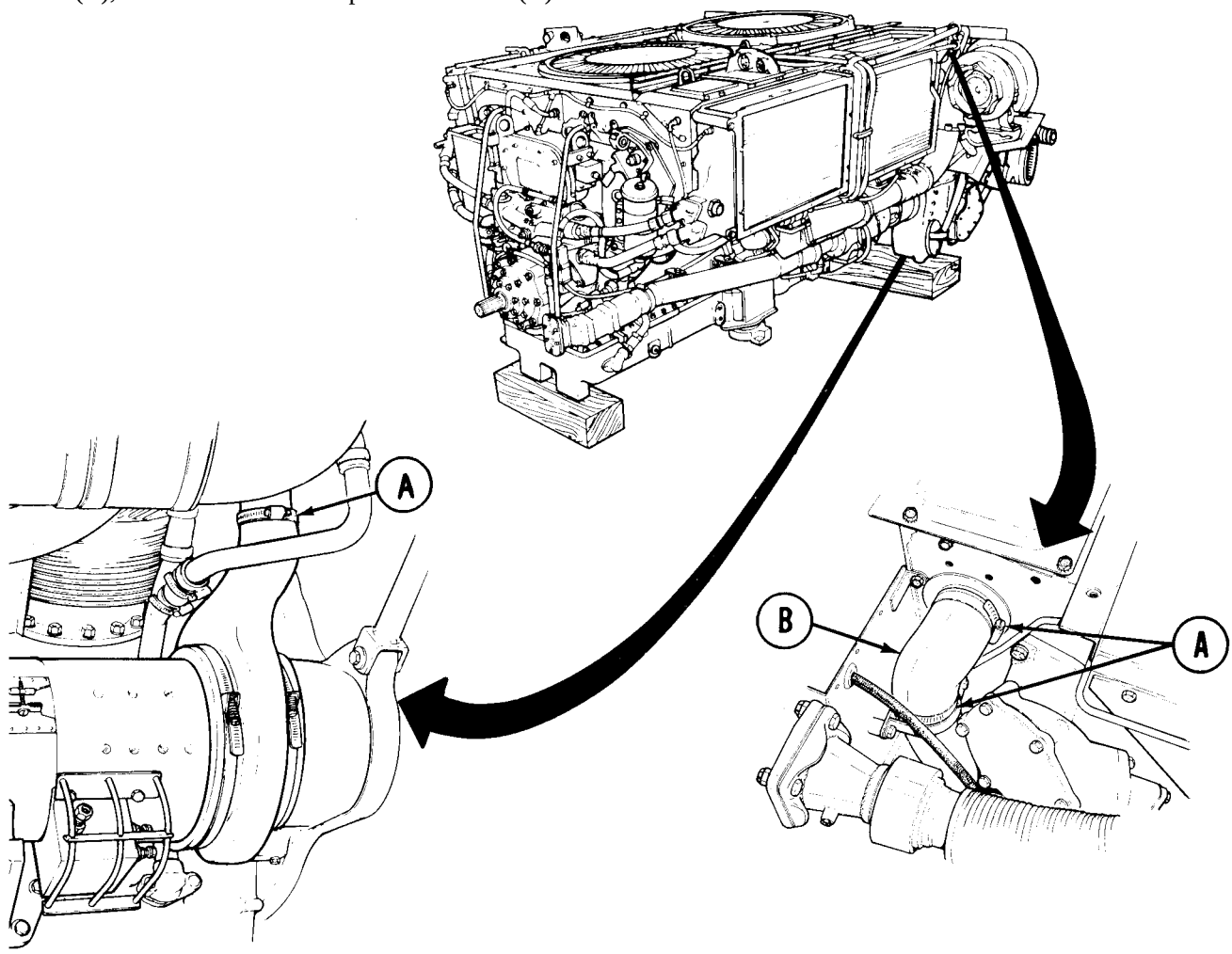
TOOLS: 1/2 in. socket with 1/2 in. drive
9/16 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
Flat-tip screwdriver
9/16 in. combination box and open end wrench

SUPPLIES: Dry cleaning solvent (Item 55, Appendix D)
Alcohol (Item 8, Appendix D)
Rags (Item 65, Appendix D)
Silicone compound (Item 32, Appendix D)
Lockwashers (4 required)
Gloves (Item 69, Appendix D)
Goggles (Item 70, Appendix D)

PRELIMINARY PROCEDURE: Remove powerplant (page 5-2)

REMOVAL:

1. Using screwdriver, loosen three clamps (A), and remove clamps and hose (B).



TA248955

Go on to Sheet 2

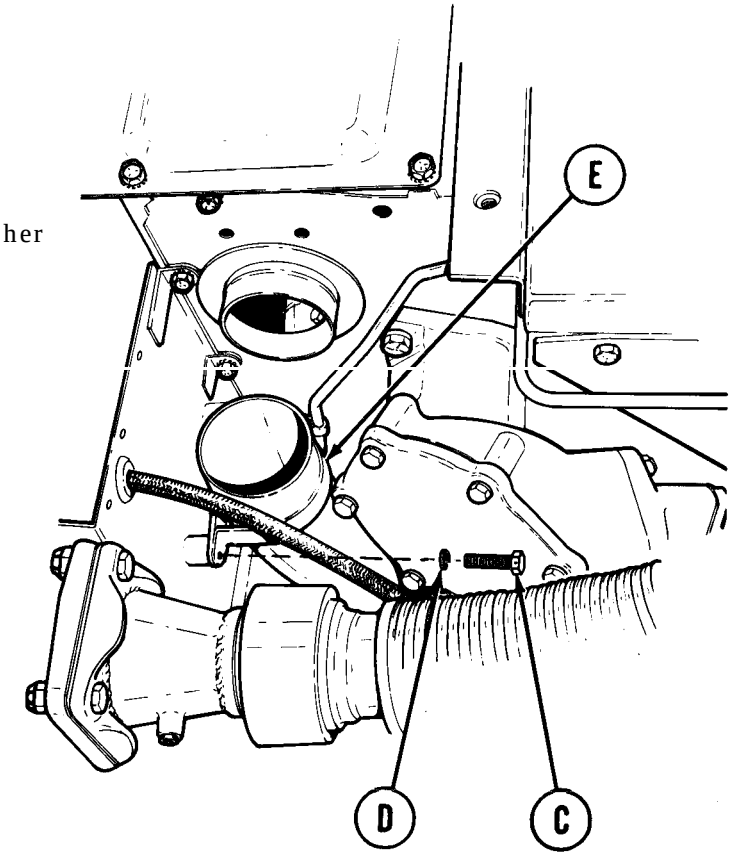
GENERATOR AIR EXHAUST PIPE AND HOSE REPLACEMENT (Sheet 2 of 4)

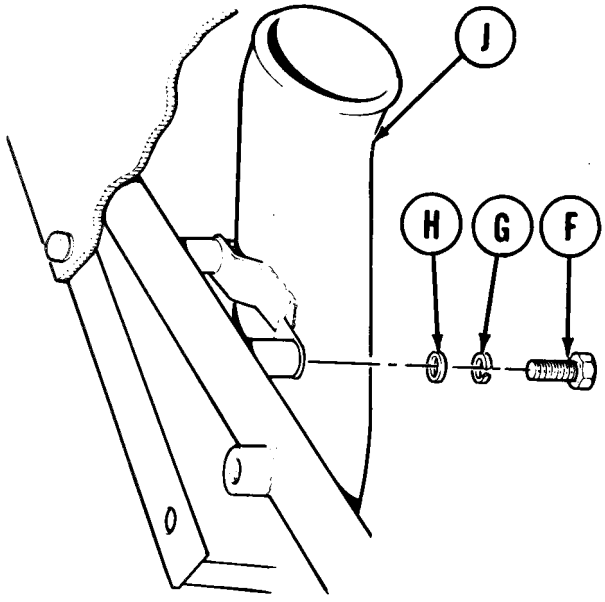
2. Using 1/2 inch socket, remove two screws (C), lockwashers (D), and clamp (E).

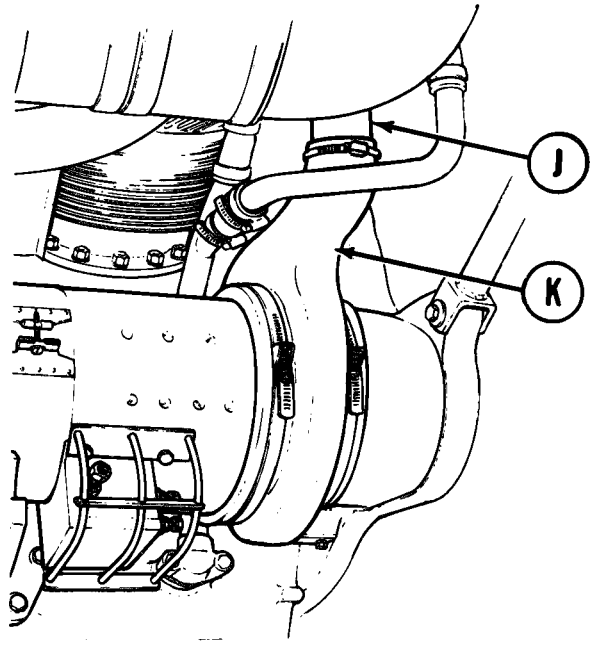
3. Using 9/16 inch socket or 9/16 inch wrench, remove two screws (F), lockwasher (G), and flat washers (H).

4. Remove pipe (J) from boot (K).

5. Remove pipe (J) from engine.







Go on to Sheet 3

TA248956

GENERATOR AIR EXHAUST PIPE AND HOSE REPLACEMENT (Sheet 3 of 4)

CLEANING AND INSPECTION:

WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. To prevent personal injury, wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point for Type #1 Dry Cleaning Solvent is 100°F (38°C) and for Type #2 is 138°F (50°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

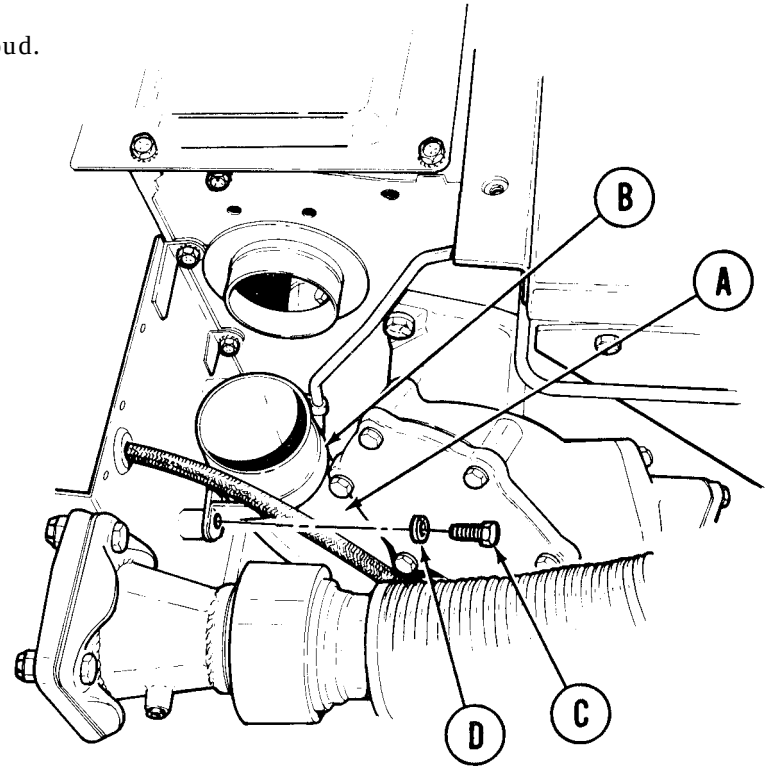
1. Using alcohol and rags, clean hose. Inspect for cracks and breaks. If hose is damaged, replace hose.
2. Using dry cleaning solvent, clean all removed parts.
3. Using rags, wipe all removed parts dry.
4. Inspect mounting hardware and pipe for damage. Replace parts as required, if defective or missing.

INSTALLATION:

NOTE

Apply silicone compound to the inside of the generator boot sealing surfaces before installation.

1. Position pipe (A) through engine shroud.
2. Assemble clamp (B) to pipe (A).
3. Using 1/2-inch socket, install two screws (C), lockwashers (D), and clamp (B) to pipe (A).

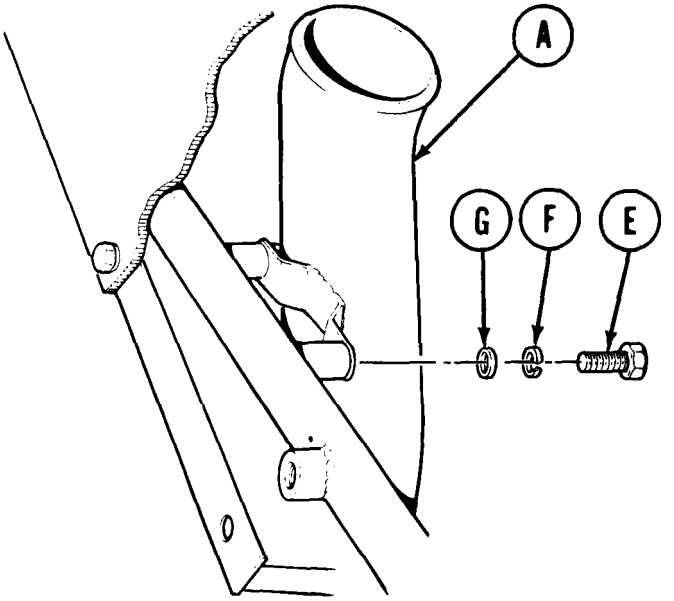


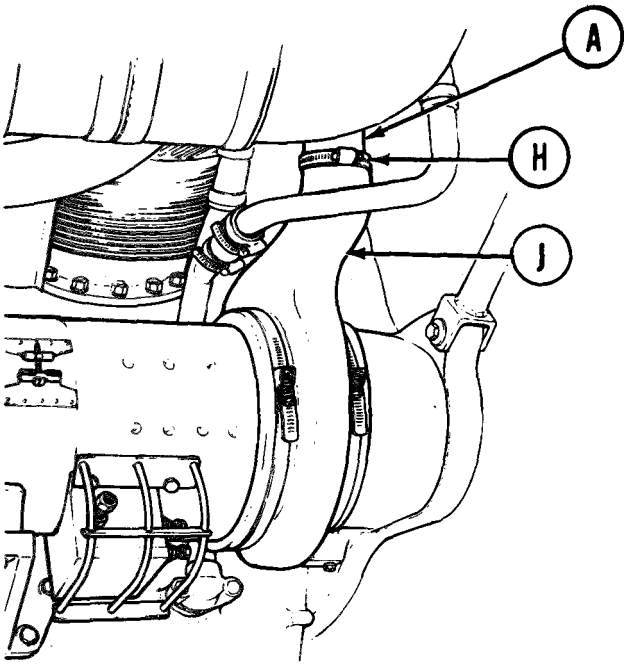
TA248957

Go on to Sheet 4

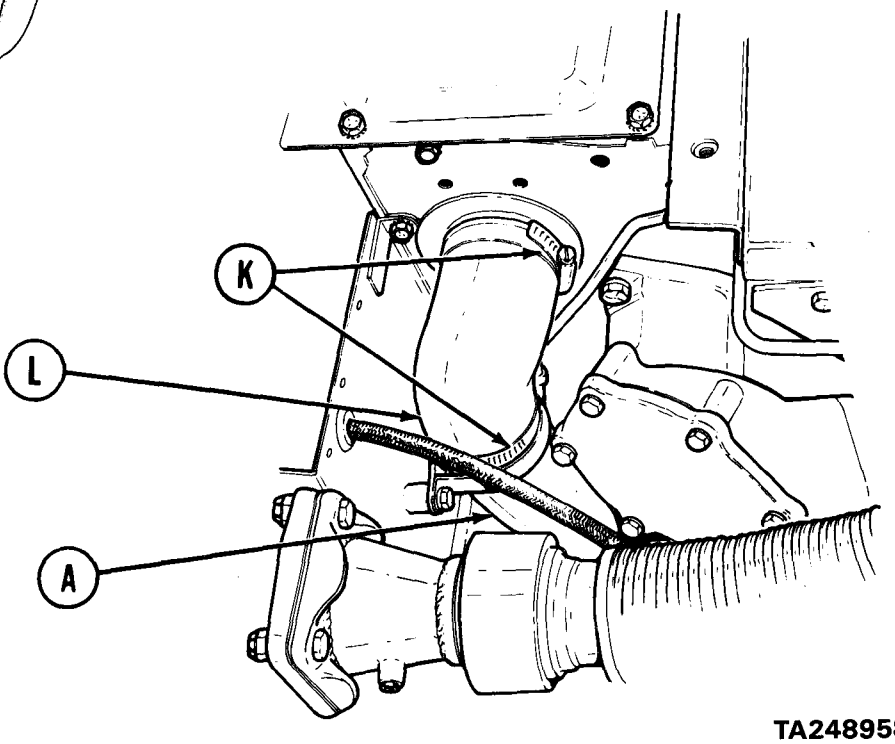
GENERATOR AIR EXHAUST PIPE AND HOSE REPLACEMENT (Sheet 4 of 4)

4. Using 9/16 inch socket or 9/16 inch wrench, install two screws (E), lockwashers (F), and flat washers (G).
5. Position clamp (H) on boot (J).
6. Install pipe (A) into boot (J).
7. Using screwdriver, tighten clamp (H).





8. Install two clamps (K) on hose (L).
9. Install hose (L) on engine and pipe (A).
10. Position clamps (K) on hose (L) and using screwdriver, tighten clamps (K).
11. Install powerplant (page 5-14).



End of Task

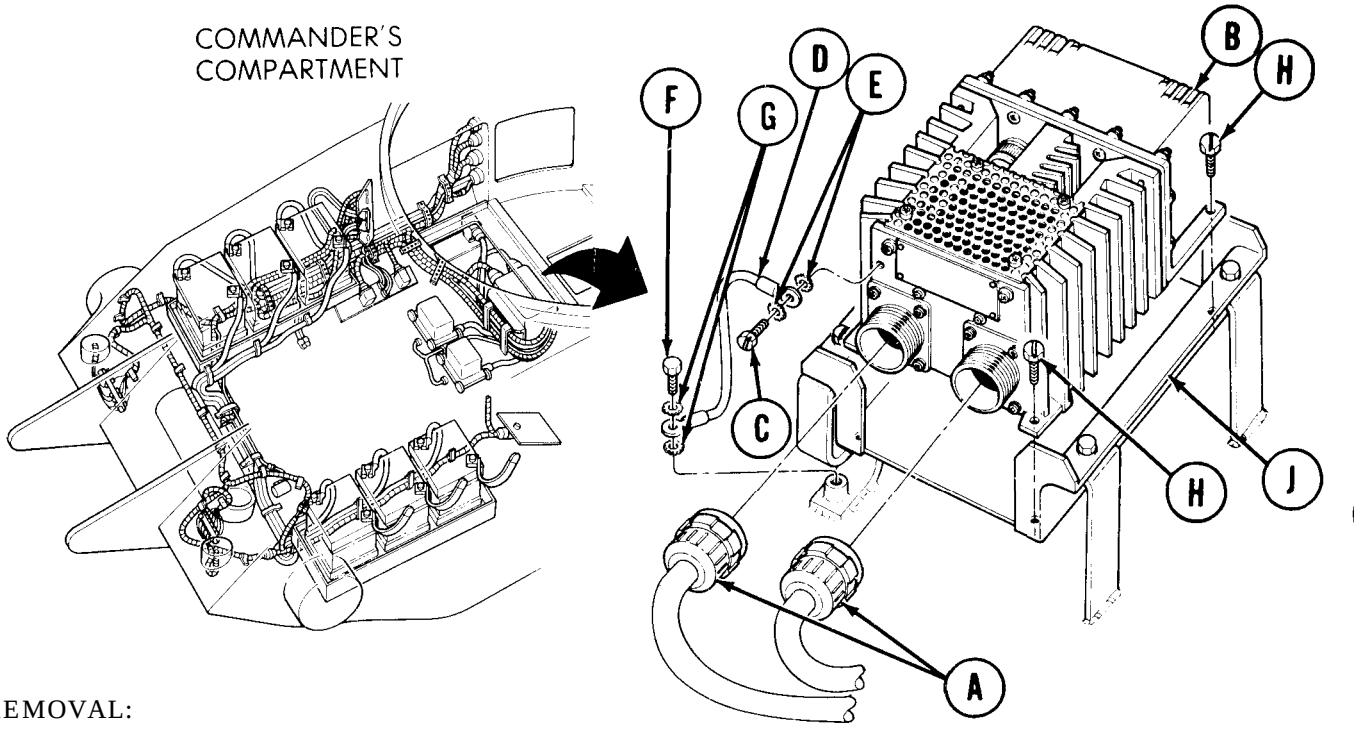
TA248958

ENGINE GENERATOR REGULATOR REPLACEMENT (Sheet 1 of 2)

TOOLS: Spanner wrench
7/16 in. socket with 1/2 in. drive
Flat-tip screwdriver
Ratchet with 1/2 in. drive

SUPPLIES: Lockwashers (3 required)

PRELIMINARY PROCEDURE: Remove access cover from floor in commander's compartment (page 17-9)



REMOVAL:

1. Using spanner wrench, remove two electrical connectors (A) from engine generator regulator (B).
2. Using screwdriver, remove screw (C) securing ground (D) to engine generator regulator (B).
3. Remove ground (D) and lockwasher (E) from engine generator regulator (B).
4. Using socket, remove screw (F) and two lockwashers (G) securing ground (D) to hull.
5. Using screwdriver, loosen four screws (H) securing engine generator regulator (B) to mounting bracket (J).
6. Remove engine generator regulator (B) from vehicle.

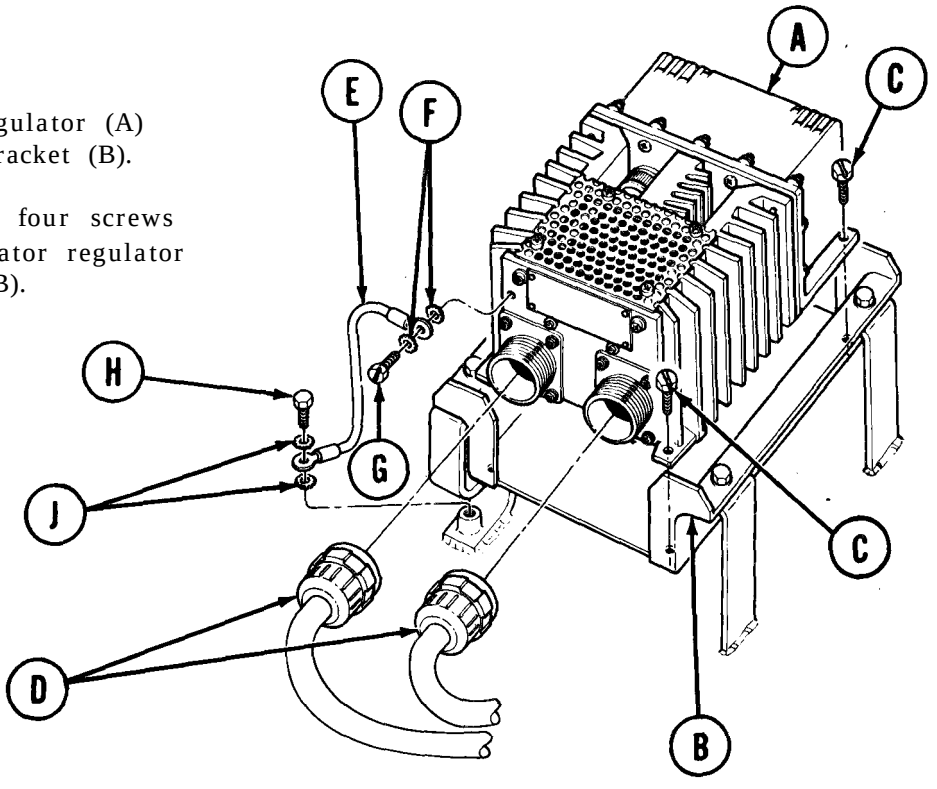
Go on to Sheet 2

TA248959

ENGINE GENERATOR REGULATOR REPLACEMENT (Sheet 2 of 2)

INSTALLATION:

1. Place engine generator regulator (A) in position on mounting bracket (B).
2. Using screwdriver, tighten four screws (C) securing engine generator regulator (A) to mounting bracket (B).



3. Using spanner wrench, connect two electrical connectors (D) to engine generator regulator (A).
4. Place ground (E) and lockwashers (F) inpositionon engine generator regulator (A).
5. Using screwdriver, tighten screw (G) securing ground (E) and lockwashers (F) to engine generator regulator (A).
6. Place other end of ground (E), screw (H), and two lockwashers (J) in position on hull.
7. Using socket, tighten screw (H) securing ground (E) to hull.
8. Replace access plate (page 17-9).
9. Check generator for operation (TM 5-5420-202-10).

End of Task

TA248960

ENGINE GENERATOR REGULATOR MOUNTING BRACKET REPLACEMENT (Sheet 1 of 1)

TOOLS: 7/16 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive

SUPPLIES: Lockwashers (4 required)

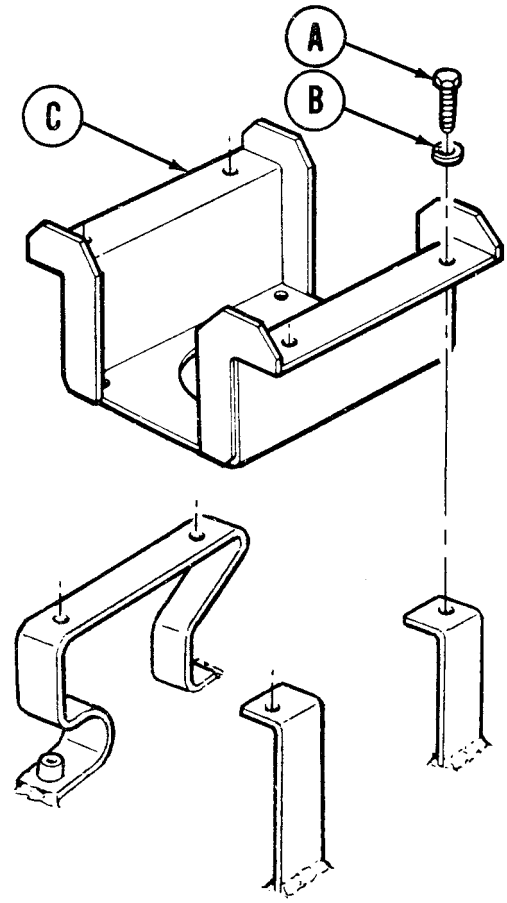
PRELIMINARY PROCEDURE: Remove engine generator regulator (page 10-18)

REMOVAL:

1. Using socket, remove four screws (A) and lockwashers (B) securing mounting bracket (C) to hull floor.
2. Remove mounting bracket (C).

INSTALLATION:

1. Place mounting bracket (C) in position on hull floor.
2. Using socket, install four screws (A) and lockwashers (B) securing mounting bracket (C) to hull floor.
3. Install engine generator regulator (page 10-19).



End of Task

TA248961

STARTER REPLACEMENT (Sheet 1 of 7)

PROCEDURE INDEX

TOOLS
- Ratchet with 1/2 in. drive
- 10 in. extension with 1/2 in. drive
- 1/2 in. socket with 1/2 in. drive
- 9/16 in. socket with 1/2 in. drive
- 3/4 in. socket with 1/2 in. drive
- 1/2 in. combination box and open end wrench
- 3/4 in. combination box and open end wrench
- 15/16 in. combination box and open end wrench
- Diagonal cutting pliers
- Flat-tip screwdriver
- Torque wrench with 3/8 in. drive (0-200 lb-in.)
- 3/4 in. socket with 3/8 in. drive
- Slip joint pliers

SPECIAL TOOLS: Ground hop kit (Item 31, Chapter 3, Section I)
Wrench, fixed, open end (Item 3, Chapter 3, Section I)

SUPPLIES
- Pencil (Item 71, Appendix D)
- Seven tags
- Lockwire (10 in.) (Item 61, Appendix D)
- Glyptol (Item 39, Appendix D)
- Gasket
- Lockwashers (8 required)

PERSONNEL: Two

REFERENCES: TM 5-5420-202-10

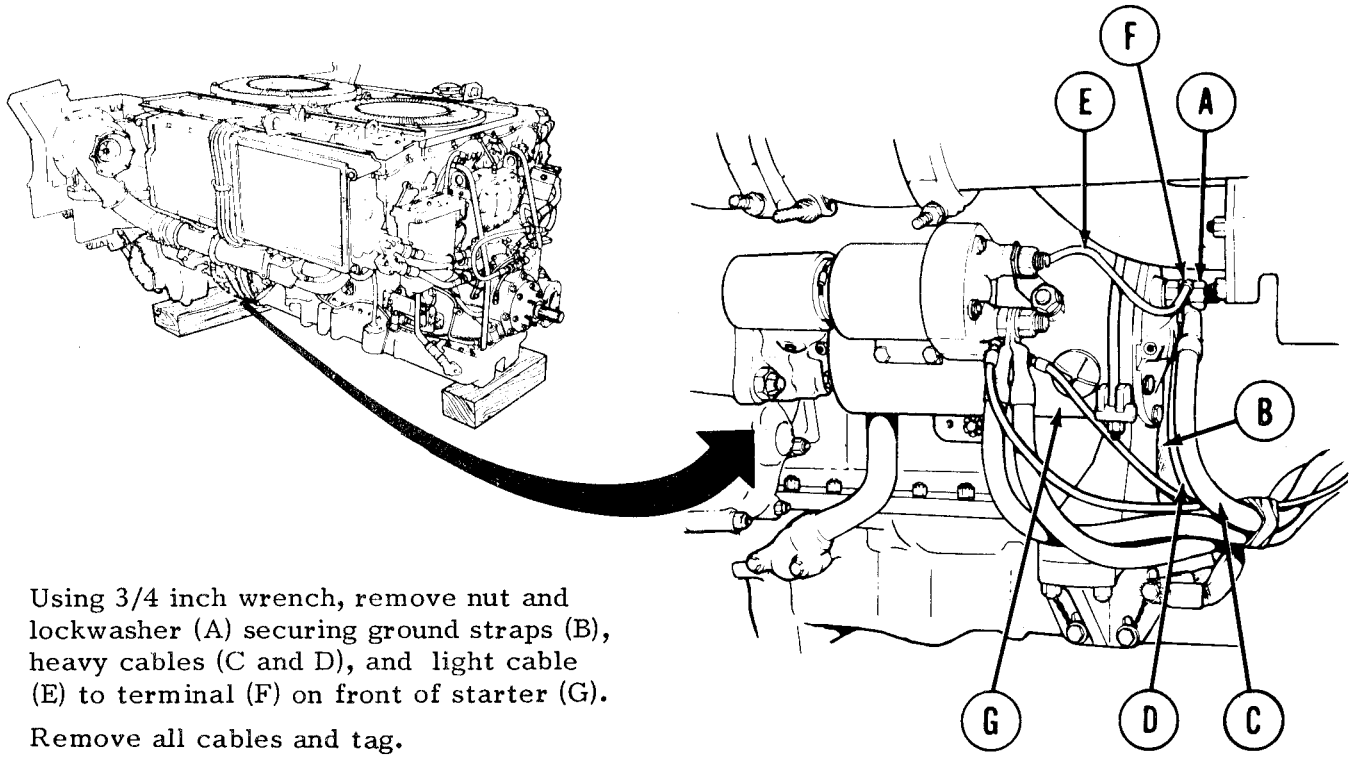
PRELIMINARY PROCEDURES:
- Remove powerplant (page 5-2)
- Remove starter low voltage relay solenoid (page 10-227)

Go on to Sheet 2

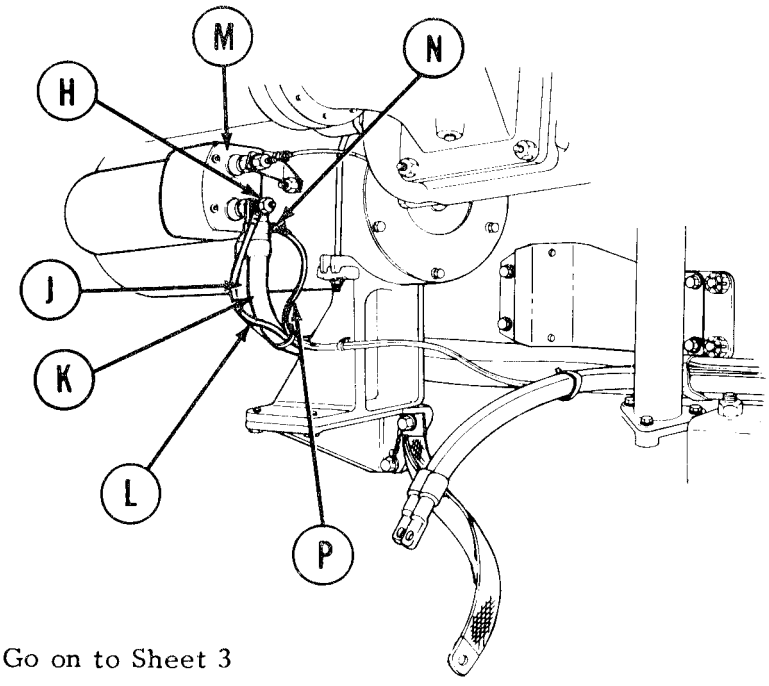
TA248962

STARTER REPLACEMENT (Sheet 2 of 7)

REMOVAL:



1. Using 3/4 inch wrench, remove nut and lockwasher (A) securing ground straps (B), heavy cables (C and D), and light cable (E) to terminal (F) on front of starter (G).
2. Remove all cables and tag.



3. Using 3/4 inch socket, remove nut, external tooth lockwasher, and split lockwasher (H) securing two heavy cables (J) and (K), and one light cable (L) to terminal on front of starter relay solenoid (M).
4. Remove all cables and tag.
5. Using screwdriver, remove screw and external tooth lockwasher (N) securing cable (P) to terminal at lower front of starter switch relay solenoid (M). Remove cable and tag.

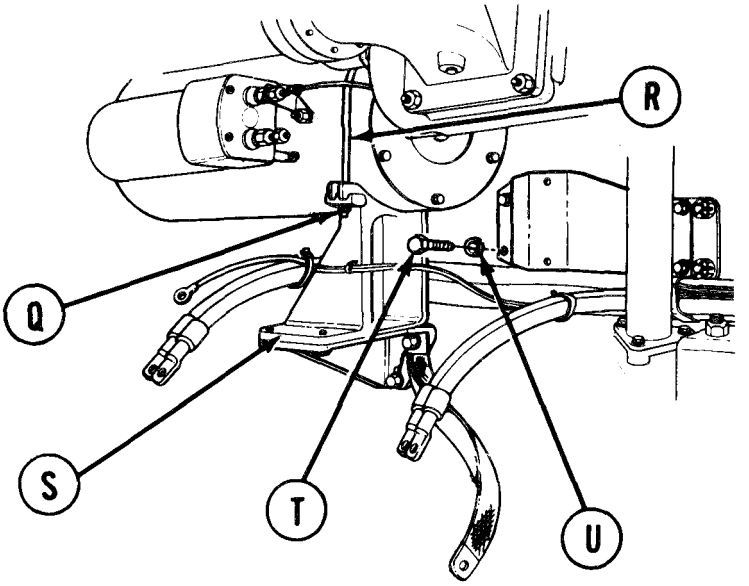
Go on to Sheet 3

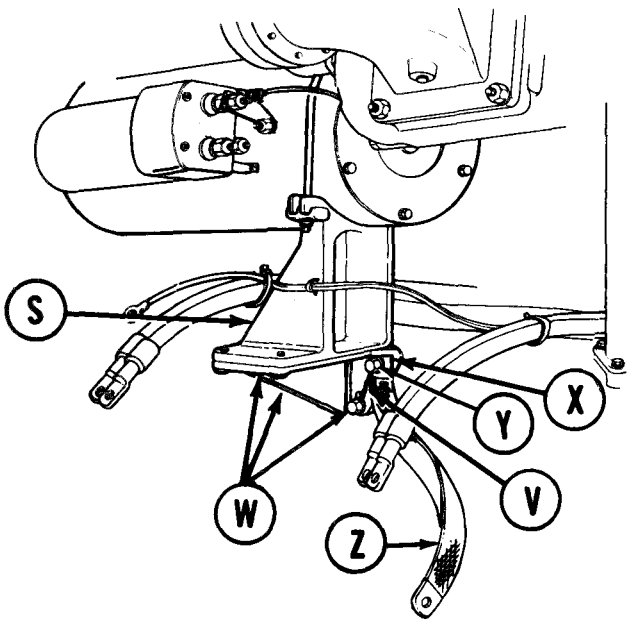
TA248963

STARTER REPLACEMENT (Sheet 3 of 7)

6. Using 1/2-inch wrench, loosen two self-locking nuts (Q) securing U-bolt (R) to cradle assembly (S).

7. Using 1/2 inch socket and extension, remove four screws (T) and lockwashers (U) securing relay solenoid bracket to engine oil pan. Remove relay bracket.





8. Using pliers, cut and remove lockwire (V) on four screws (W) securing starter cradle assembly (S) and bracket (X) to engine oil pan.

9. Using 9/16-inch socket and extension, remove screw (Y) and ground strap (Z) from starter cradle assembly (S).

10. Using 9/16-inch socket and extension, remove three screws and flat washers (W) securing starter cradle assembly (S) and bracket (X) to engine oil pan. Remove starter cradle bracket and U-bolt as assembly.

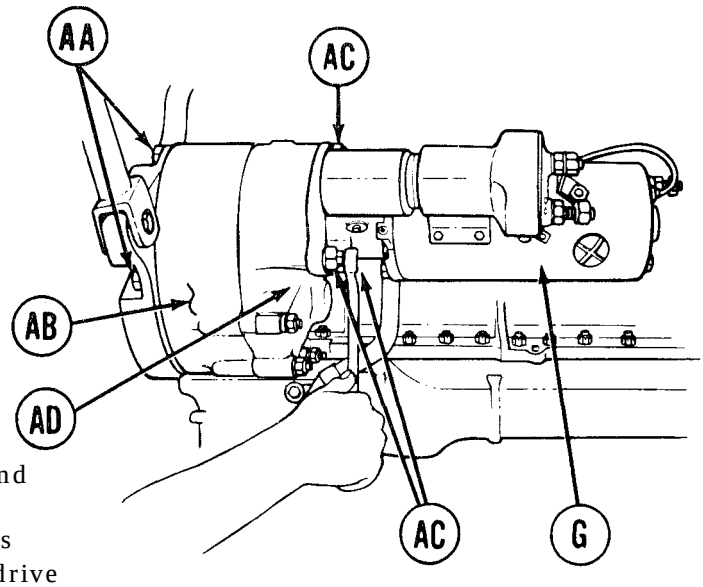
Go on to Sheet 4

TA248964

STARTER REPLACEMENT (Sheet 4 of 7)

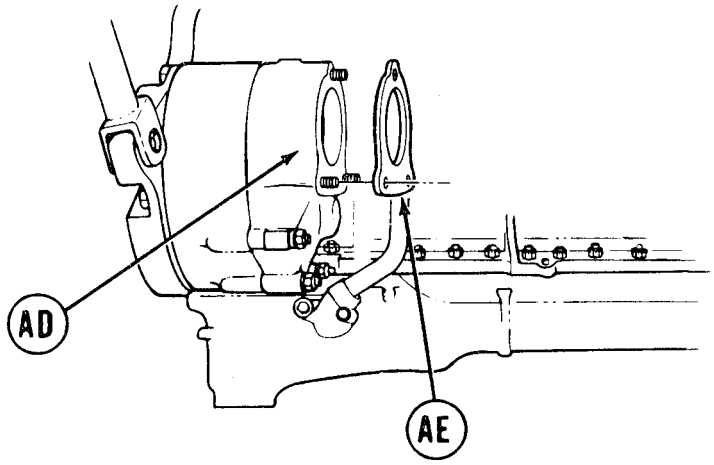
NOTE

The top and front fasteners have bolts (AA) which pass through the engine hull housing (AB) and must be held in place when removing the self-locking nuts (AC). The inboard fastener has a stud and will not require a wrench to hold it in place.



11. Using 15/16-inch wrench on bolts (AA) and special wrench on self-locking nuts (AC) loosen and remove three self-locking nuts (AC) securing starter (G) to starter drive adapter (AD).

12. Using two people, ease starter out of starter drive adapter (AD). Remove starter from engine.



13. Remove gasket (AE) from starter drive adapter (AD). Throw away gasket.

Go on to Sheet 5

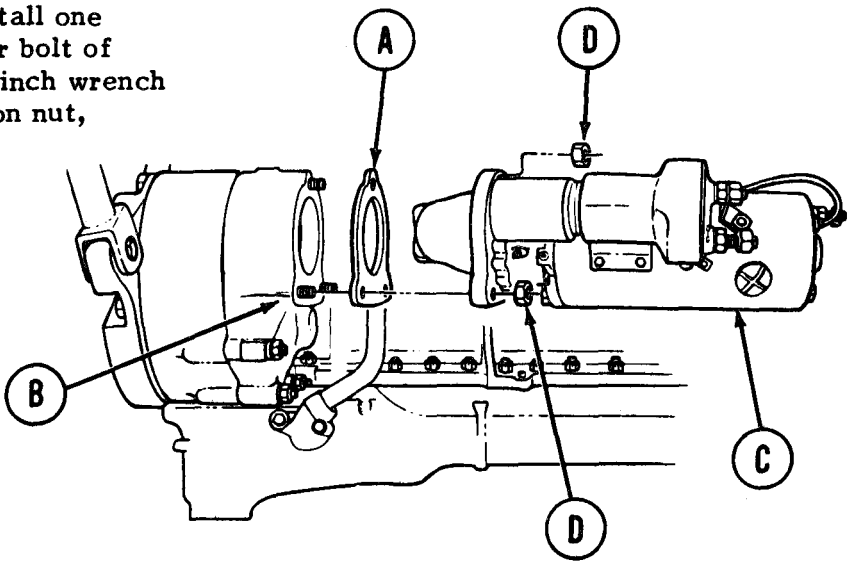
TA248965

STARTER REPLACEMENT (Sheet 5 of 7)

INSTALLATION:

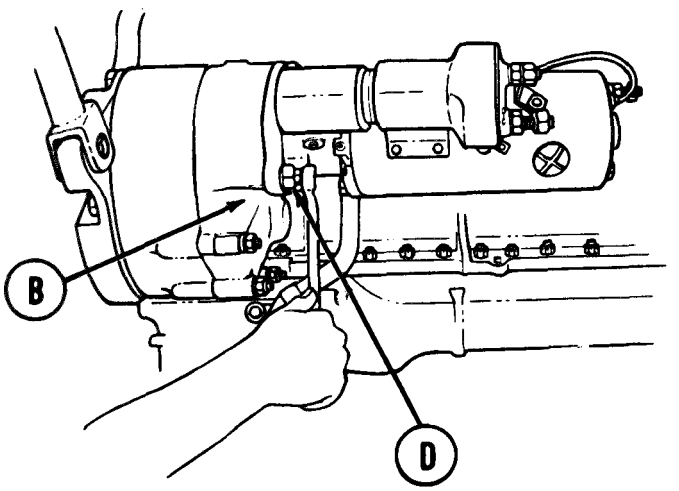
1. Install new gasket (A) on starter drive adapter (B).

2. Using two people, ease starter (C) into place in starter drive adapter (B). **Support starter and install one self-locking nut (D) on upper bolt of drive adapter. Using 15/16-inch wrench on bolt and special wrench on nut, secure nut on bolt.**



3. Install lower nut (D) and bolt in same way as upper nut and bolt in step 2.

4. Using special wrench, secure last nut (D) onto stud.



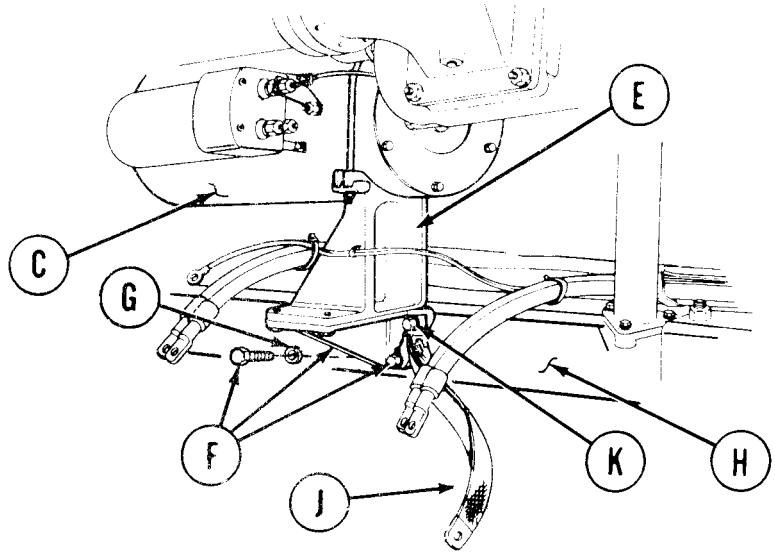
TA248966

Go on to Sheet 6

STARTER REPLACEMENT (Sheet 6 of 7)

5. Slide starter cradle assembly bracket (E) into position under starter (C).

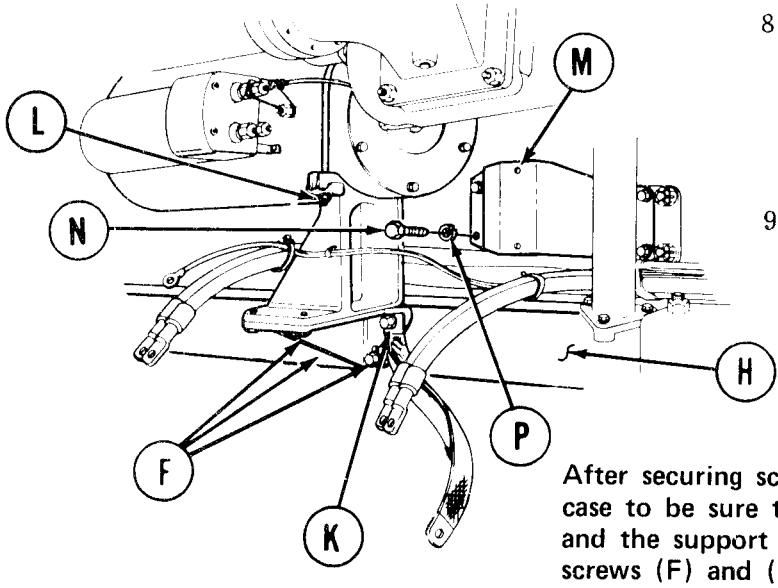
6. Using fingers, install three screws (F) with flat washers (G) to secure starter cradle assembly bracket (E) to engine oil pan (H).



NOTE

When installing ground strap (J) to screw (K), be sure flat washer seats flat against bracket face.

7. Using fingers, install ground strap (J) on screw, flat washer and lockwasher (K), and install screw to starter cradle assembly bracket (E) and engine oil pan (H) as in step 6.



8. Using 1/2-inch wrench, tighten two self-locking nuts (L) evenly to be sure nuts and U-bolts seat properly.

9. Using 9/16-inch socket and extension, secure four screws (F) and (K).

NOTE

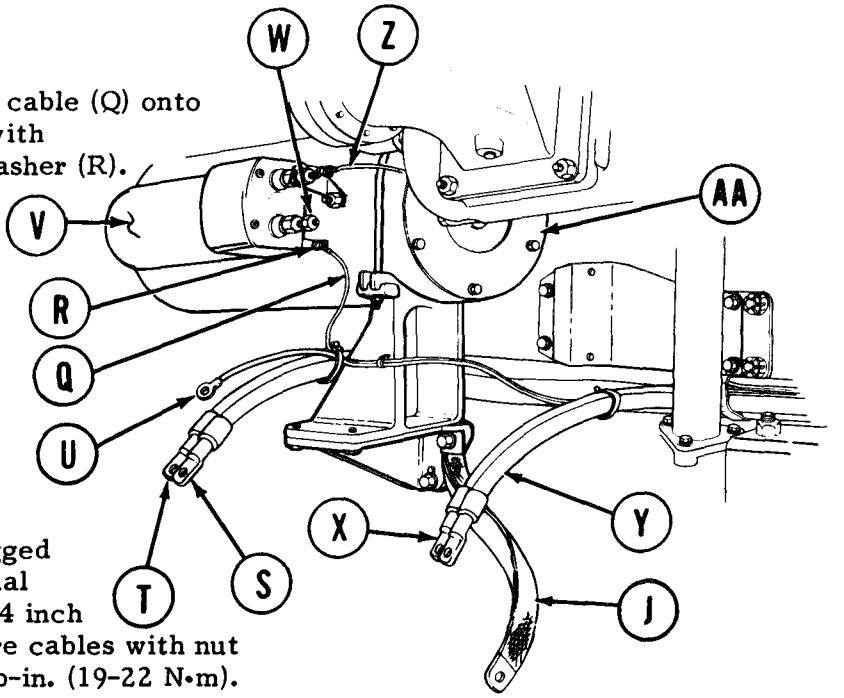
After securing screws (F) and (K), check front of starter case to be sure there is no gap between the starter case and the support cradle assembly. If there is a gap, loosen screws (F) and (K) and adjust the position of the cradle assembly so there is no gap.

10. Position low voltage relay solenoid bracket (M) on engine oil pan (H) and using 1/2-inch socket and extension, secure low voltage relay solenoid bracket (M) to engine oil pan (H) with four screws (N) and lockwashers (P).

Go on to Sheet 7

TA248967

STARTER REPLACEMENT (Sheet 7 of 7)



11. **Using screwdriver, secure small cable (Q) onto bottom front of solenoid relay with screw and external tooth lockwasher (R).**

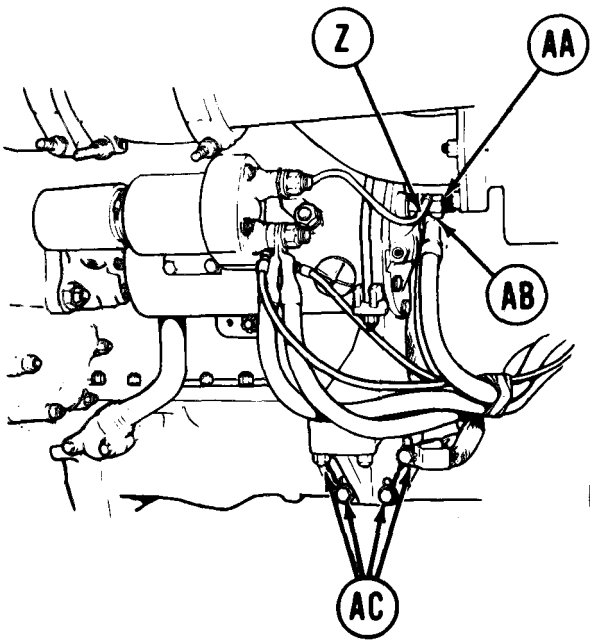
12. **Install heavy cables (S) and (T) and tagged light cable (U) onto lower terminal of starter switch relay solenoid (V). Using 3/4 inch socket and torque wrench, secure cables with nut and lockwashers (W) to 14-16 lb-in. (19-22 N·m).**

13. **Install ground strap (J) and two heavy cables (X) and (Y) and tagged light cable (Z) onto large terminal at starter motor (AA). Using 3/4 inch socket and torque wrench, secure cables with nut and lockwashers (AB) to 14-16 lb-in. (19-22 N·m).**

14. Install starter low voltage relay solenoid (page 10-228).

15. Connect powerplant for ground hop (page 5-26).

16. Perform operational check (TM 5-5420-202-10).



17. Stop engine (TM 5-5420-202-10).

18. Using pliers, secure four bracket bolts with lockwire (AC), exactly as shown in the figure, to prevent them from loosening.

19. Coat all exposed terminal fittings with glyptol.

20. Disconnect powerplant from ground hop (page 5-40).

21. Install powerplant (page 5-14).

End of Task

TA248968

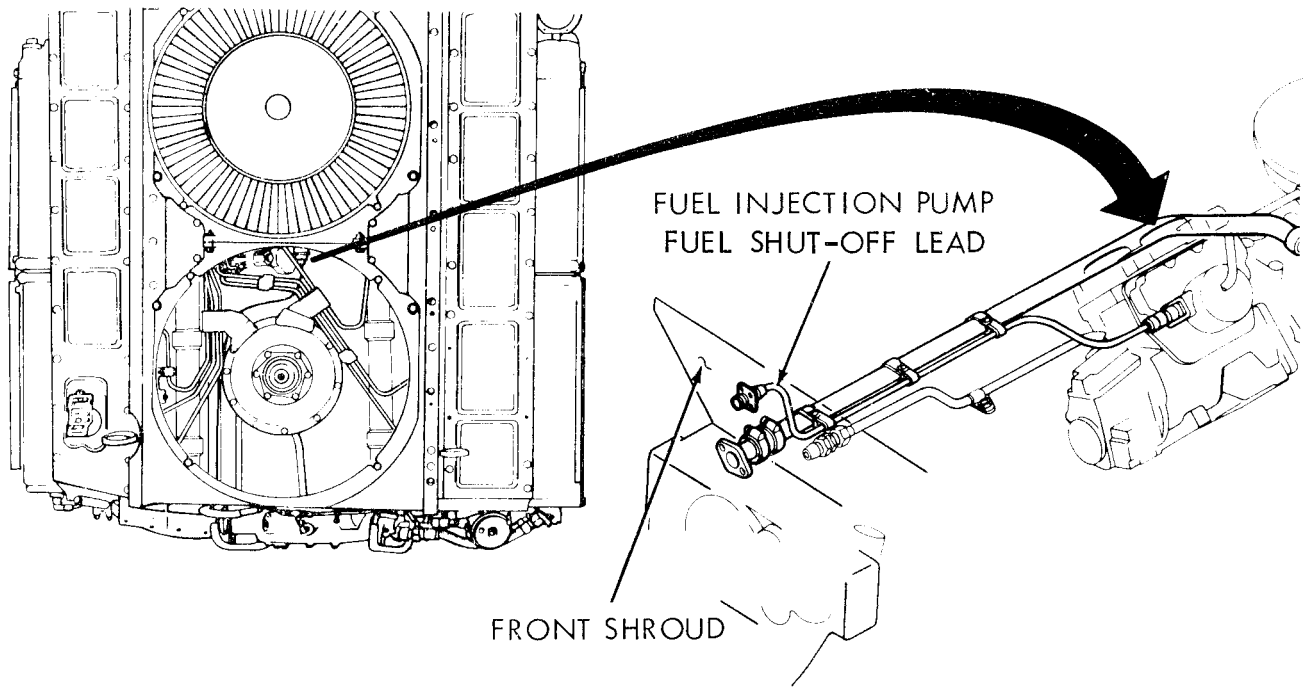
ENGINE FUEL INJECTION PUMP FUEL SHUTOFF LEAD REPLACEMENT (Sheet 1 of 5)

PROCEDURE INDEX

TOOLS: Slip joint Pliers
Cross-tip screwdriver with No. 1 tip
Flat-tip screwdriver
1/4 in. combination box and open end wrench
7/8 in. combination box and open end wrench
3/8 in. combination box and open end wrench

SUPPLIES: lockwire (Item 61, Appendix D)

PRELIMINARY PROCEDURES: Remove powerplant (page 5-2)
Remove front engine cooling fan (page 9-55)



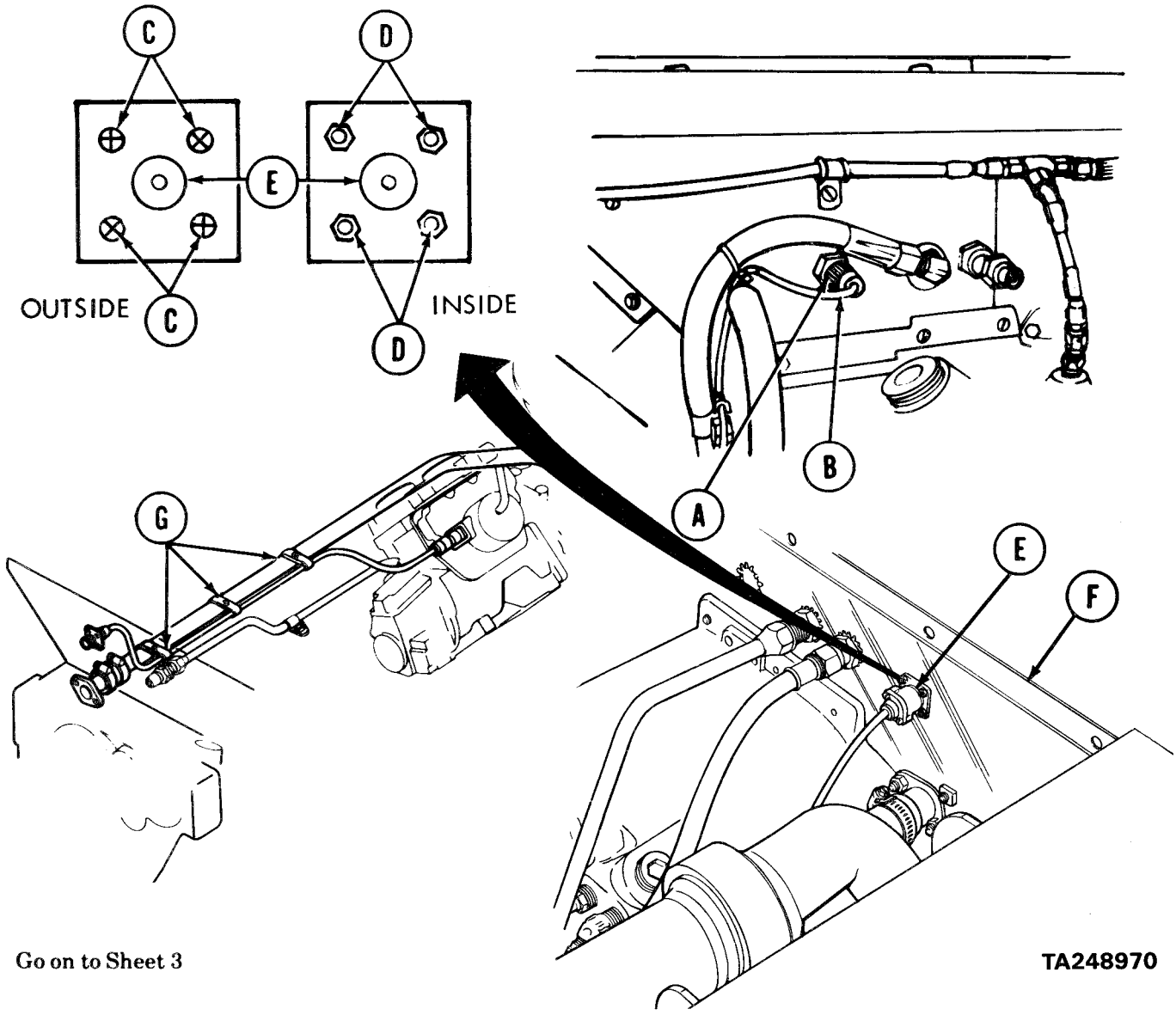
Go on to Sheet 2

TA248969

ENGINE FUEL INJECTION PUMP FUEL SHUTOFF LEAD REPLACEMENT (Sheet 2 of 5)

REMOVAL:

1. Using 7/8 inch wrench, loosen retaining nut (A) on electrical connector (B).
2. Remove connector (B).
3. Using cross-tip screwdriver and 1/4 inch wrench, remove four screws (C), washers, and nuts (D) on connector (E).
4. Remove connector (E) from engine shroud (F).
5. Using flat-tip screwdriver and 3/8 inch wrench, remove three loop clamps (G).



Go on to Sheet 3

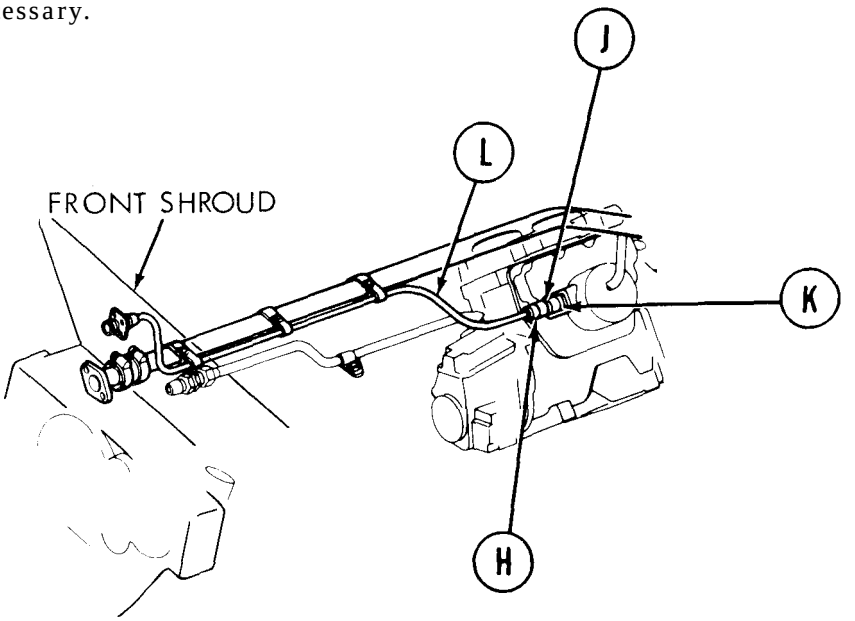
TA248970

ENGINE FUEL INJECTION PUMP FUEL SHUTOFF LEAD REPLACEMENT (Sheet 3 of 5)

6. Using pliers, remove lockwire (H) from retaining nut (J).
7. Using pliers, loosen retaining nut (J) on connector (K).
8. Remove connector (K).
9. Remove lead (L).

INSPECTION:

1. Check loop clamps for cracks.
2. Check screws and nuts for stripped threads.
3. Replace parts as necessary.



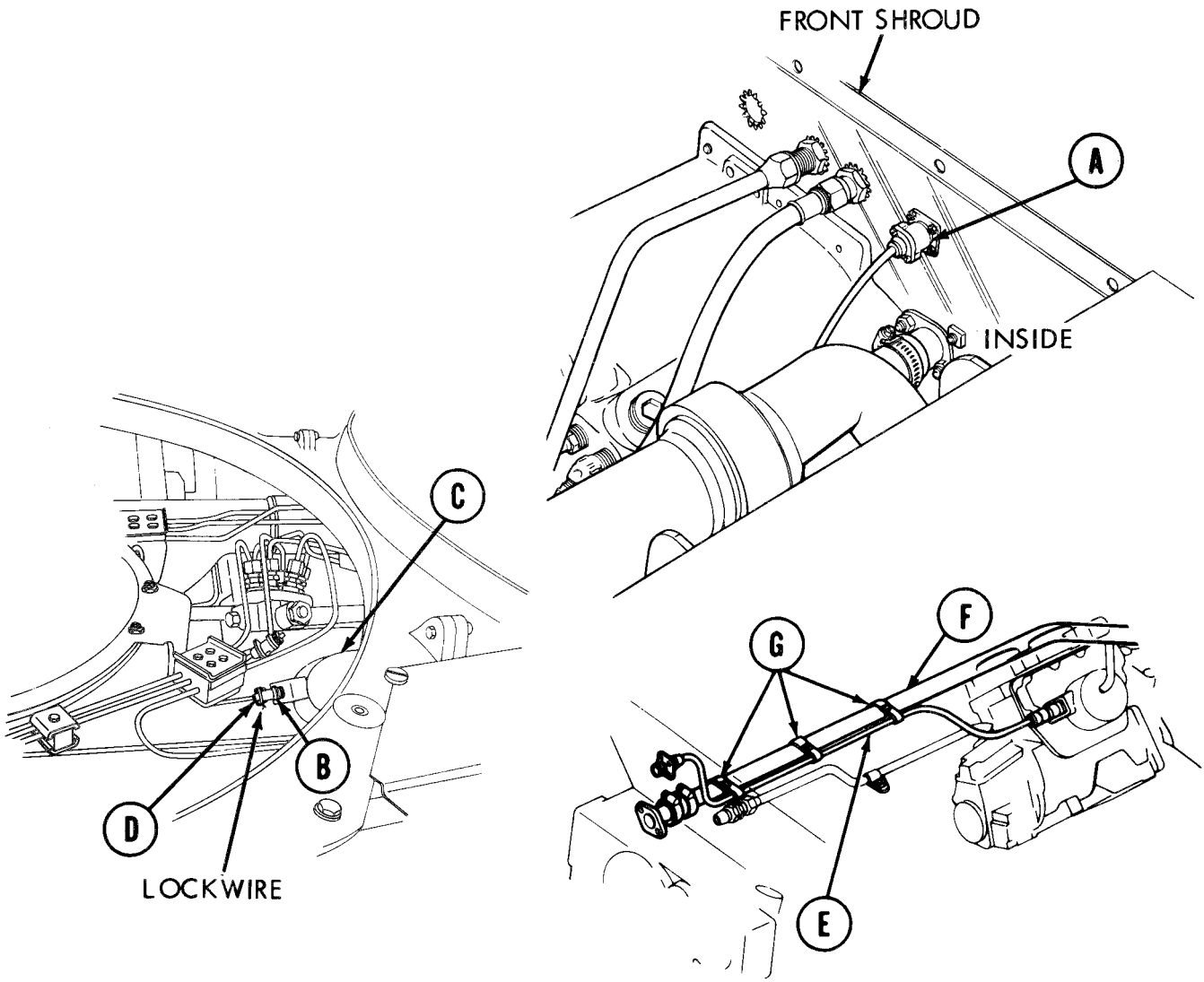
TA248971

Go on to Sheet 4

ENGINE FUEL INJECTION PUMP: FUEL SHUTOFF LEAD REPLACEMENT (Sheet 4 of 5)

INSTALLATION:

1. Install connector (A) of replacement lead through engine shroud from engine side of shroud.
2. Using cross-tip screwdriver and 1/4 inch wrench, secure connector (A) with four screws, washers, and nuts. Make sure nuts are inside engine shroud.
3. Install connector (B) on fuel pump (C).
4. Tighten retaining nut (D) using slip joint pliers.
5. Using pliers, install lockwire.
6. Position lead (E) next to line (F) and install three loop clamps (G).



Go on to Sheet 5

TA248972

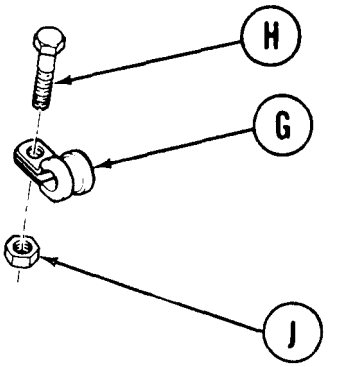
ENGINE FUEL INJECTION PUMP: FUEL SHUTOFF LEAD REPLACEMENT (Sheet 5 of 5)

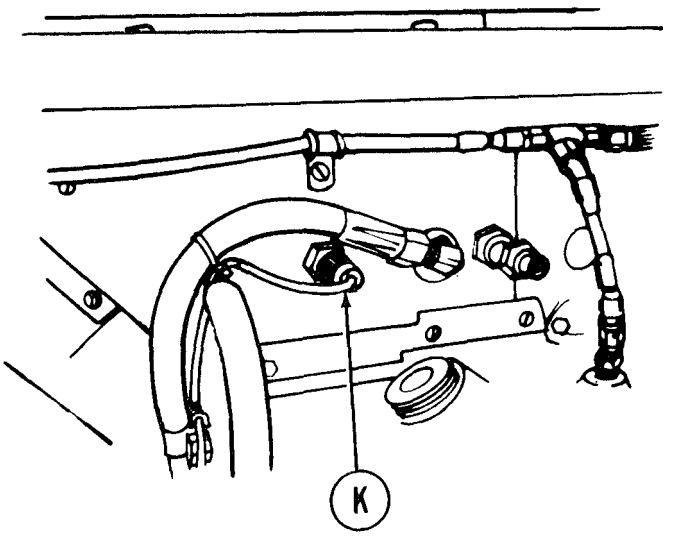
7. Using 3/8 inch wrench and flat-tip screwdriver, secure three loop clamps (G) with three screws (H) and self-locking nuts (J).

8. Using 7/8 inch wrench, install electrical connector (K).

9. Install front engine cooling fan (page 9-57).

10. Install powerplant (page 5-14).





End of Task

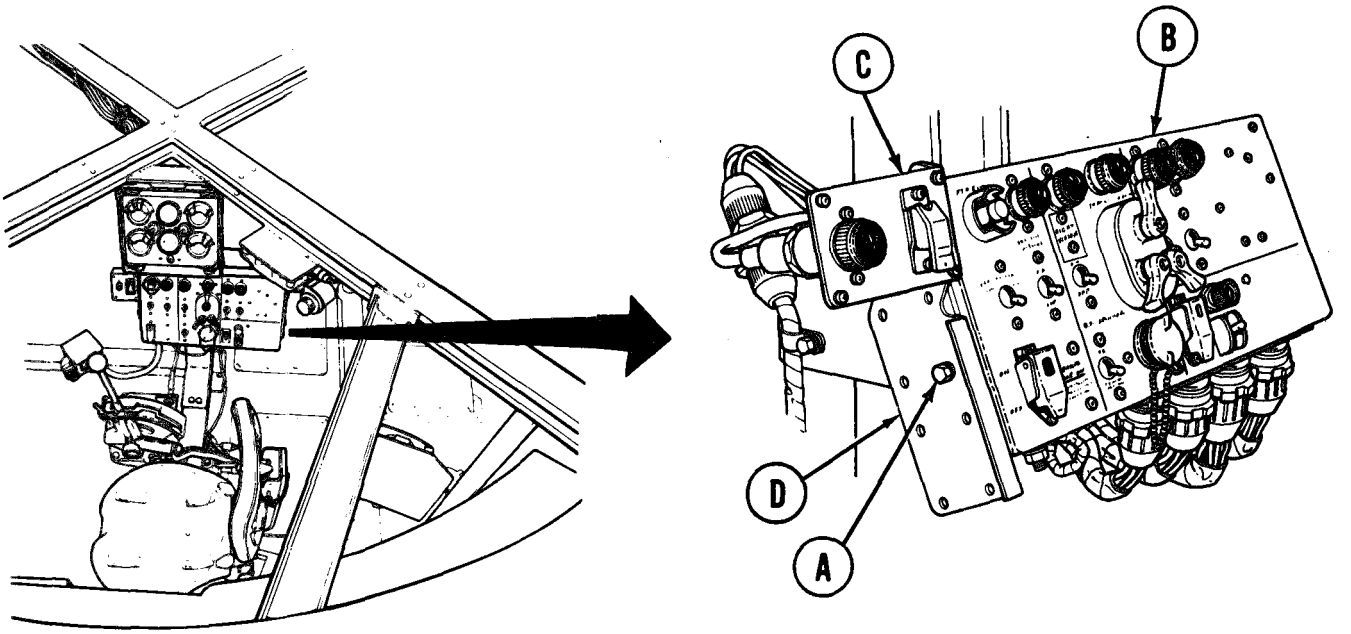
TA248973

MASTER CONTROL PANEL DISPLACEMENT (Sheet 1 of 1)

TOOLS: 7/16 in. combination box and open end wrench

SUPPLIES: Lockwashers (4 required)

PRELIMINARY PROCEDURE: Disconnect three battery ground straps (page 10-268)



DISPLACEMENT:

1. Using wrench, remove four screws and lockwashers (A) securing panel (B) and switch assembly (C) to mounting bracket (D).

2. Lower panel (B) and switch assembly (C) to vehicle floor.

INSTALLATION:

1. Position panel (B) in mounting bracket (D).

2. Using wrench, install four screws and lockwashers (A) to secure panel (B) and switch assembly (C) to mounting bracket (D).

3. Connect three battery ground straps (page 10-268).

TA248974

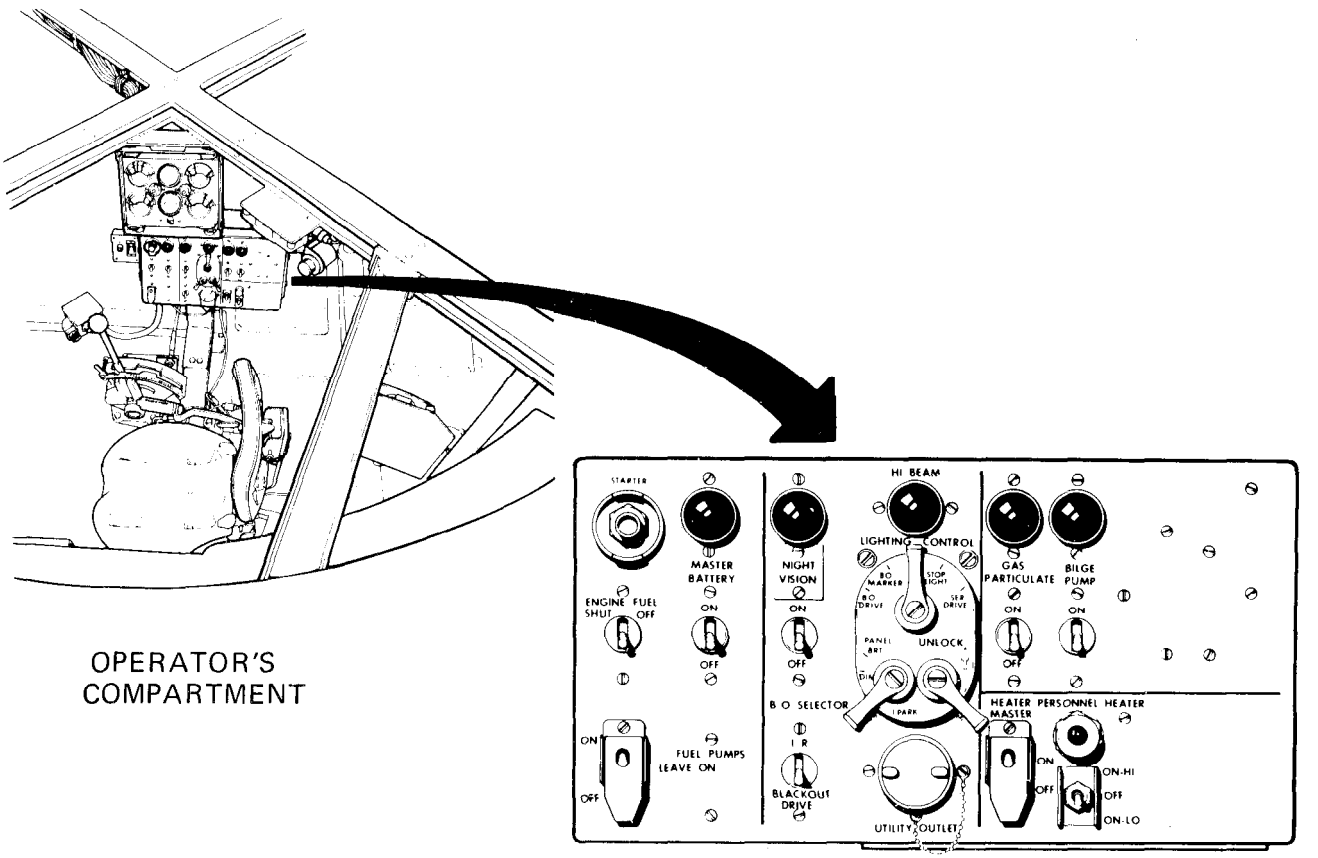
MASTER CONTROL PANEL REPLACEMENT (Sheet 1 of 4)

PROCEDURES INDEX

TOOLS: 7/16 in. combination box and open end wrench (two required)
Spanner wrench

SUPPLIES: Silicone compound (Item 32, Appendix D)
Lockwashers (5 required)

PRELIMINARY PROCEDURE: Disconnect three battery ground straps (page 10-268)



MASTER CONTROL PANEL

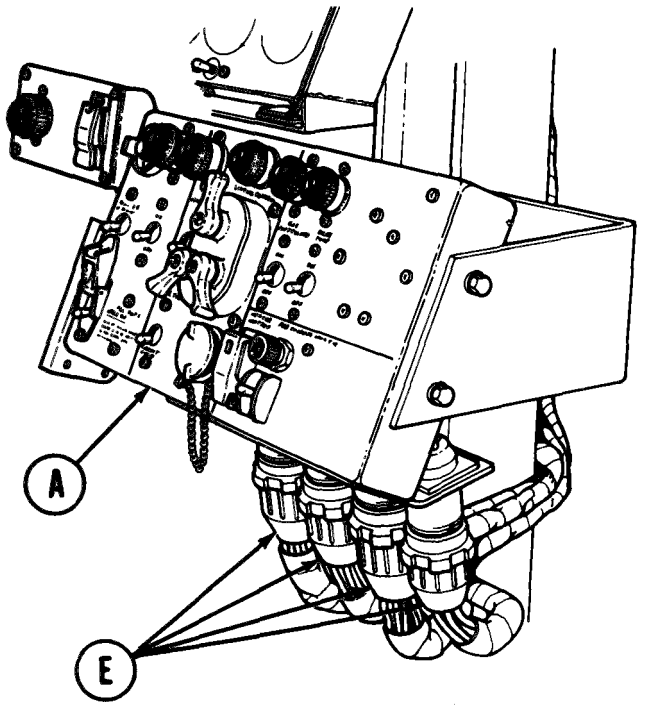
Go on to Sheet 2

TA248975

MASTER CONTROL PANEL REPLACEMENT (Sheet 2 of 4)

REMOVAL:

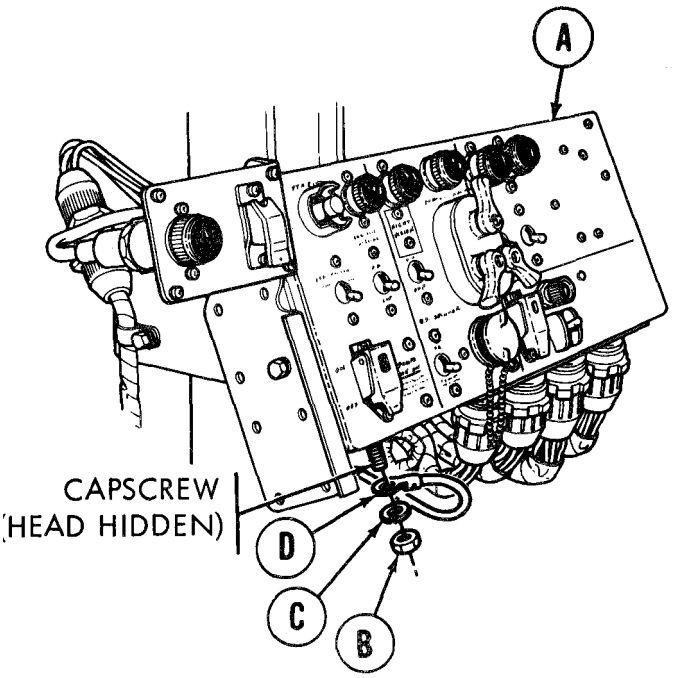
1. Using one wrench, grip head of screw (hidden) on bottom rear of master control panel (A).
2. Using other wrench, remove nut (B) and lockwasher (C) securing ground strap (D) to master control panel (A).
3. Remove ground strap (D).



NOTE

Some vehicles may not be equipped with switch assembly (F).

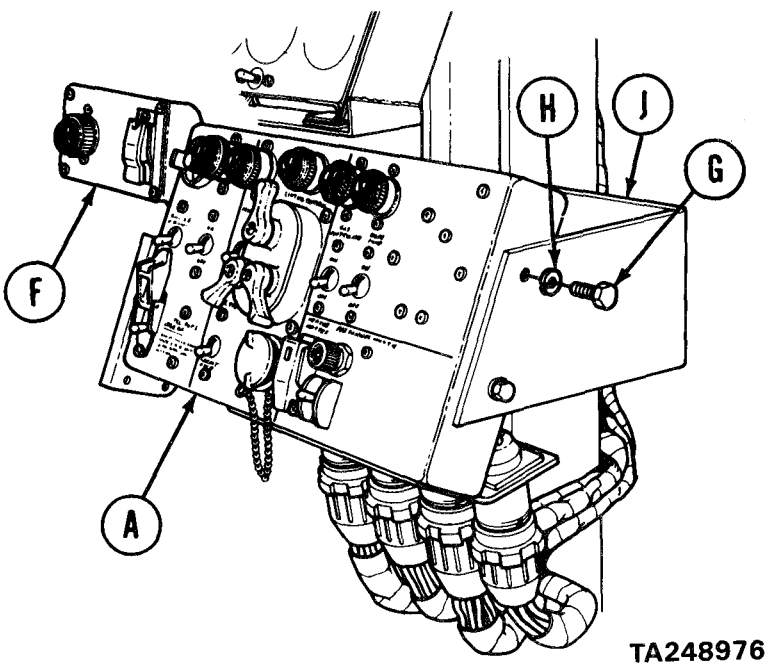
5. Using wrench remove four screws (G) and lockwashers (H) securing panel (A) and switch assembly (F) to mounting bracket (J).
6. Lay switch assembly (F) aside.



NOTE

Cables (E) must be removed from left to right or right to left.

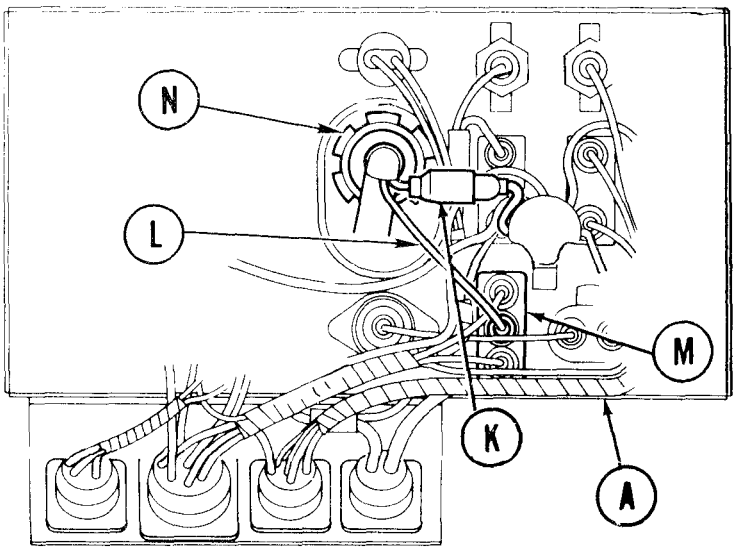
4. Using spanner wrench, remove four cables (E) from bottom rear of master control panel (A).



TA248976

Go on to Sheet 3

MASTER CONTROL PANEL REPLACEMENT (Sheet 3 of 4)



BACK OF MASTER CONTROL PANEL

7. Using fingers, disconnect electrical connector (K) (circuit 15).

8. Using fingers, disconnect electrical connector (L) (circuit 19) thru center of switch (M).

9. Using spanner wrench, remove electrical connector (N).

10. Remove panel (A).

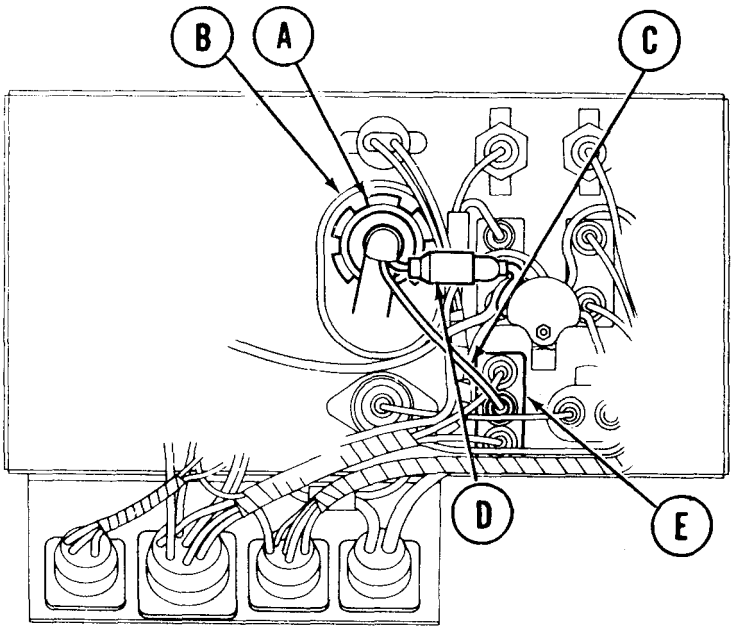
INSTALLATION:

1. Using spanner wrench, install electrical connector (A) on light control switch (B).

2. Apply silicone compound to two leads (C and D).

3. Using fingers, install lead (C) (circuit 19) in center connection on switch (E).

4. Using fingers, connect electrical connector (D) (circuit 15).



BACK OF MASTER CONTROL PANEL

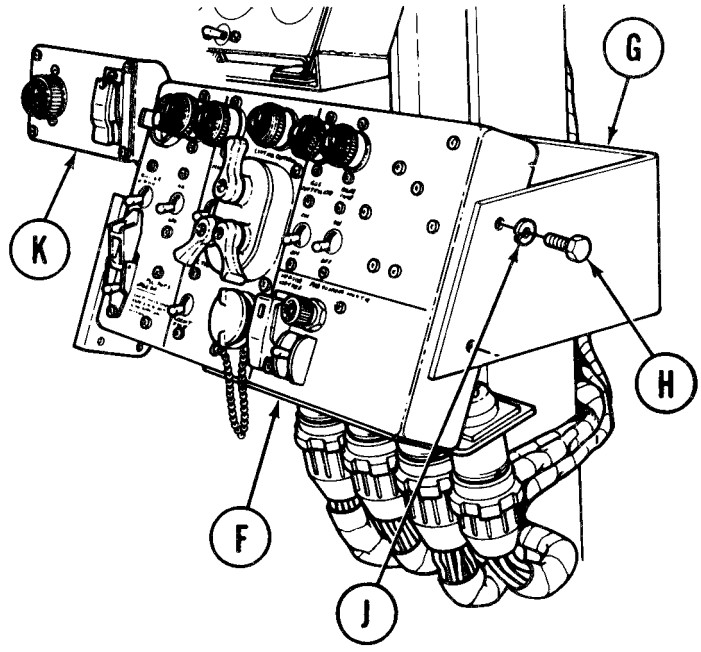
Go on to Sheet 4

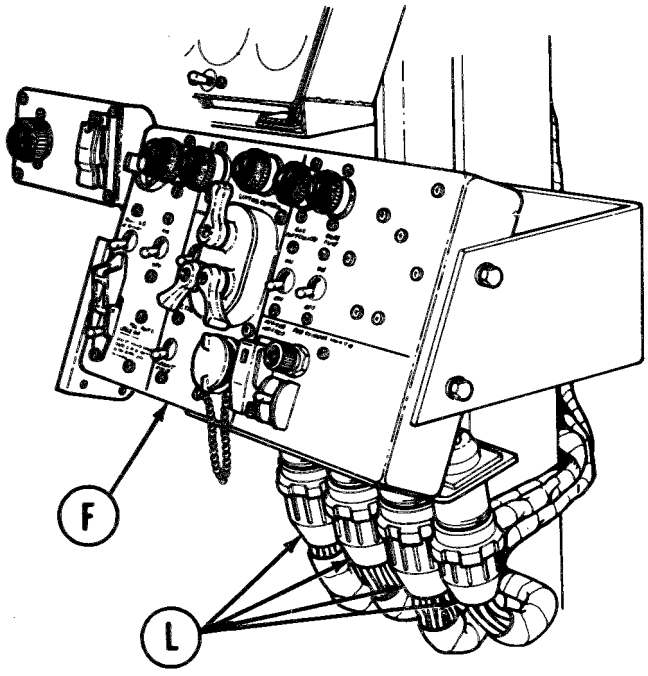
TA248977

MASTER CONTROL PANEL REPLACEMENT (Sheet 4 of 4)

5. Place panel (F) in position on mounting bracket (G).

6. Using wrench, install four screws (H) and lockwashers (J) to secure panel (F) and switch assembly (K) to mounting bracket (G).





NOTE

Cables (L) must be installed from right to left or left to right.

7. Using spanner wrench, install four cables (L) to bottom of panel (F).

8. Place screw and ground strap (M) in position on panel.

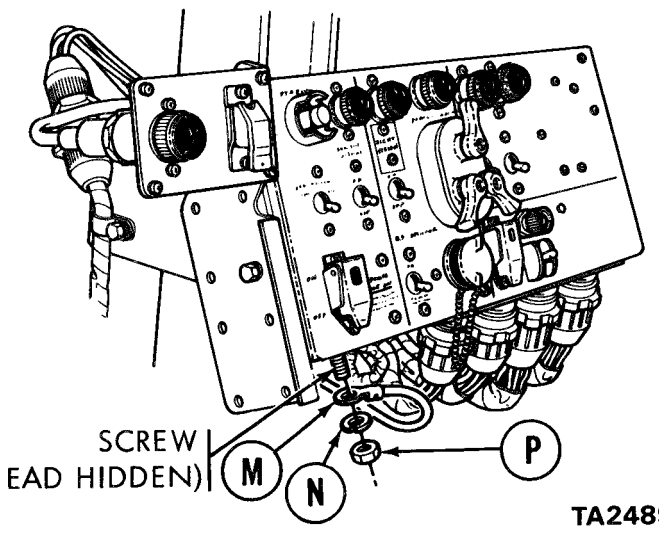
9. Using one wrench, grip head of screw (hidden) on bottom rear of panel.

10. Using other combination wrench, install new lockwasher (N) and nut (P) to secure ground strap (M) to panel.

11. Connect three battery ground straps (page 10-268).

12. Check master control panel for proper operation (TM 5-5420-202-10).

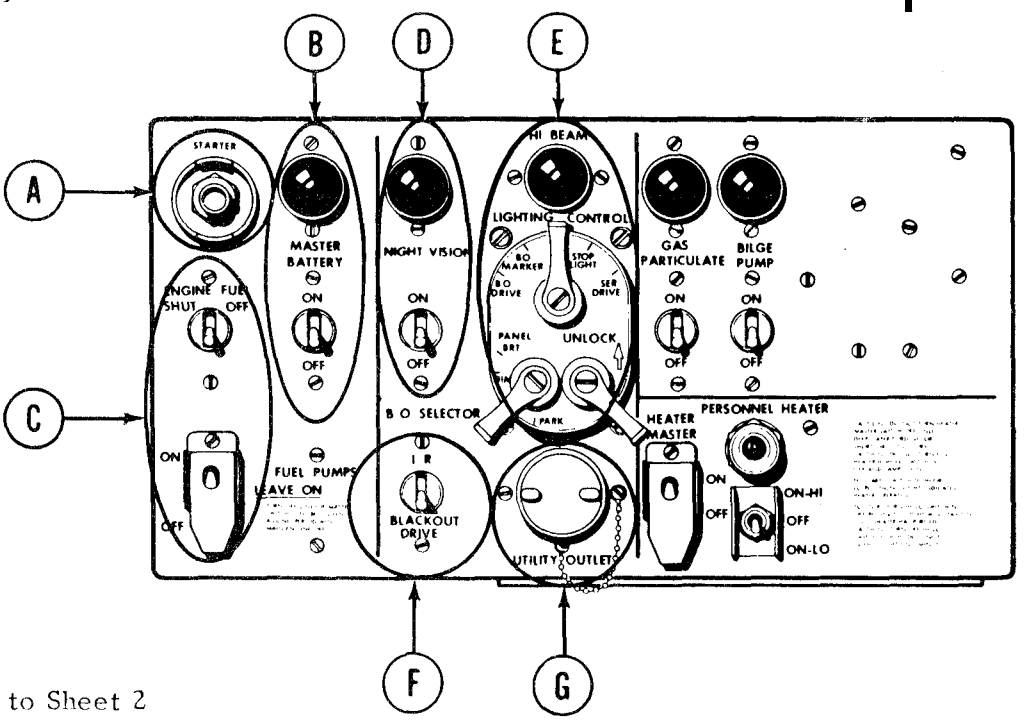
End of Task



TA248978

MASTER CONTROL PANEL REPAIR (Sheet 1 of 73)
Procedure Index (Sheet 1 of 3)

PROCEDURE INDEX

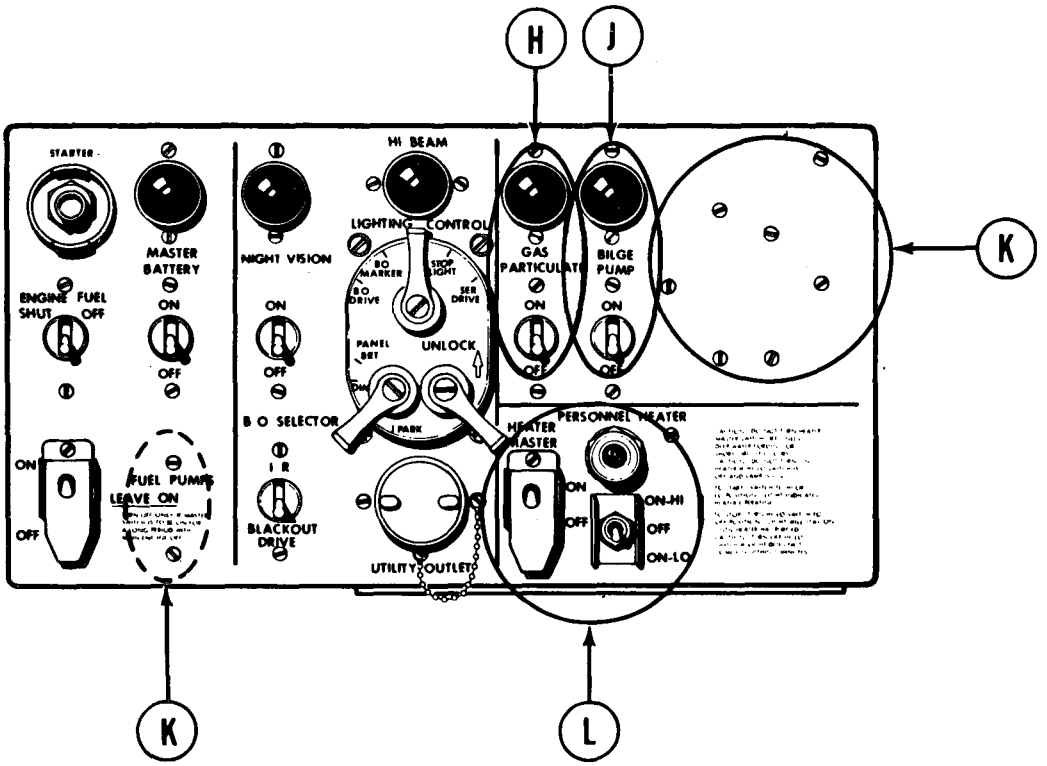


Go on to Sheet 2

TA248979

MASTER CONTROL PANEL REPAIR (Sheet 2 of 73)
Procedure Index (Sheet 2 of 3)

PROCEDURE INDEX

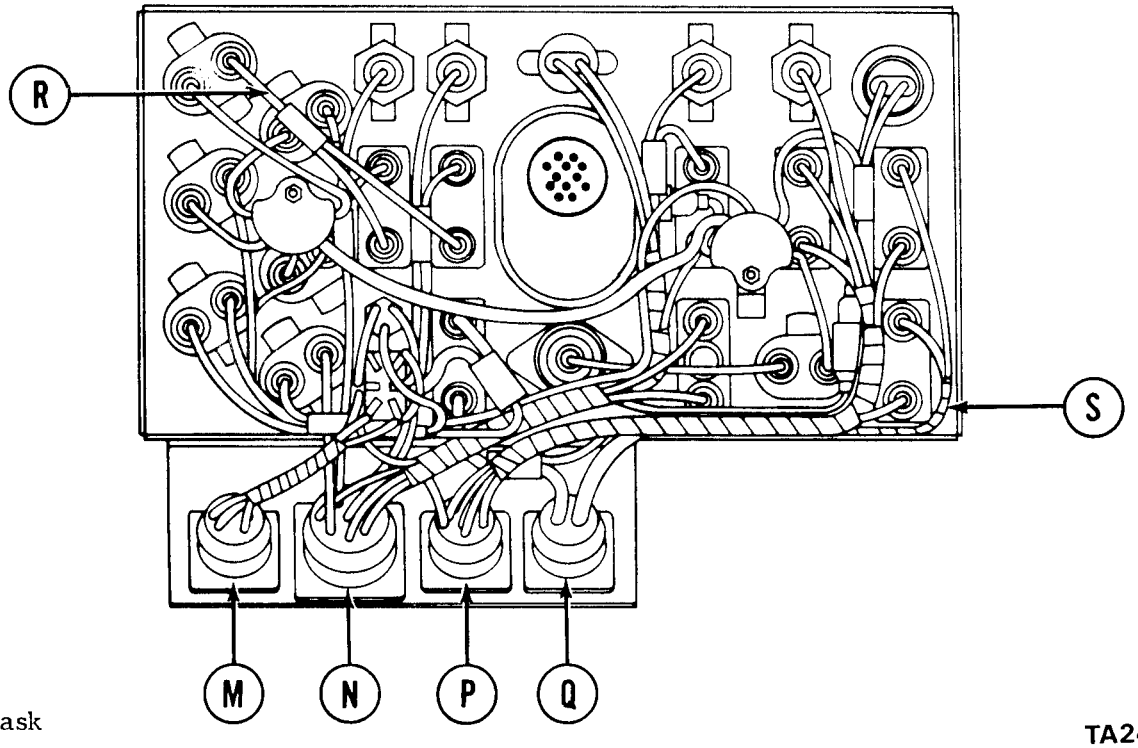


Go on to Sheet 3

TA248980

MASTER CONTROL PANEL REPAIR (Sheet 3 of 73)
Procedure Index (Sheet 3 of 3)

PROCEDURE INDEX



End of Task

TA248981

MASTER CONTROL PANEL REPAIR (Sheet 4 of 73)
Starter Switch Replacement (Sheet 1 of 2)

TOOLS: Ratchet with 1/2 in. drive
5 in. extension with 1/2 in. drive
13/16 in. socket with 1/2 in. drive

SUPPLIES: Silicone compound (Item 32, Appendix D)

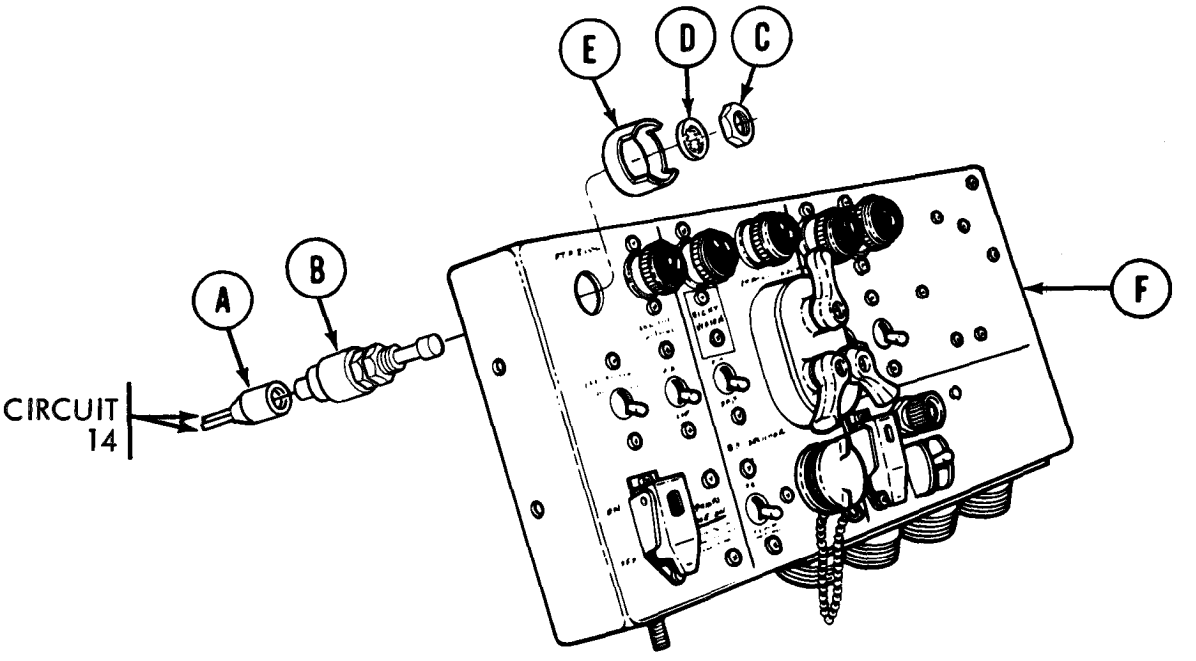
PRELIMINARY PROCEDURE: Remove panel from vehicle (page 10-34).

REMOVAL:

1. Using fingers, remove electrical connector (A) (circuit number 14) by pulling out from back of switch (B).

2. Using socket and extension, remove nut (C) and lockwasher (D) securing switch (B) and guard (E) to panel (F).

3. Remove switch (B) and guard (E).



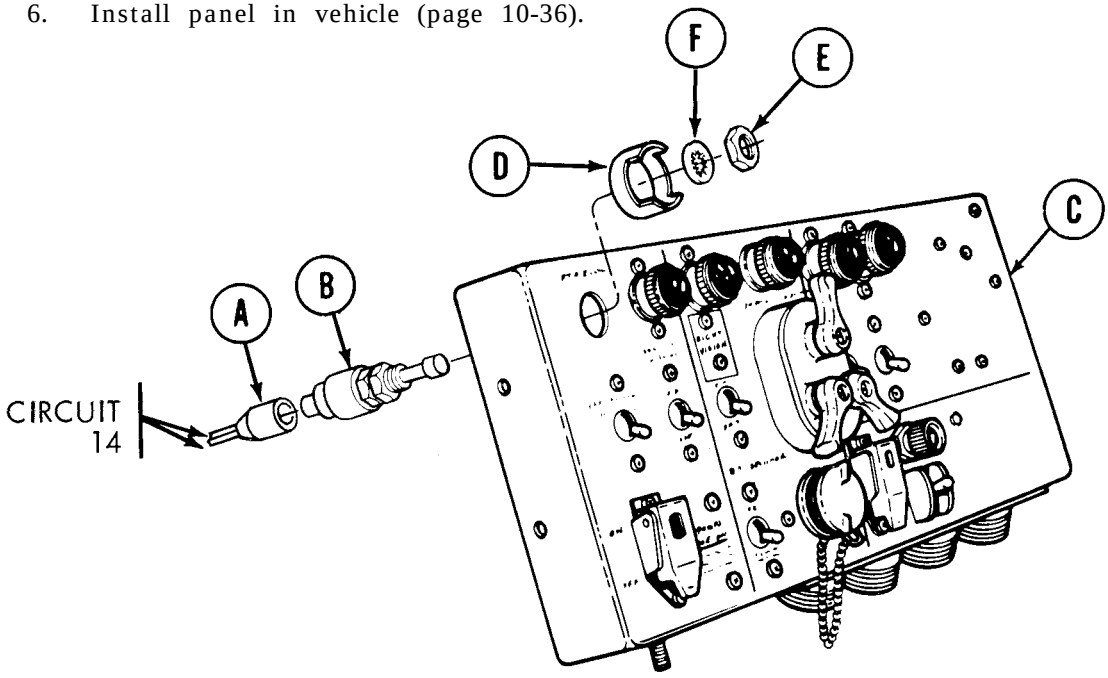
Go on to Sheet 2

TA248982

MASTER CONTROL PANEL REPAIR (Sheet 5 of 73)
Starter Switch Replacement (Sheet 2 of 2)

INSTALLATION:

1. Apply silicone compound to electrical connector (A).
2. Using finger, insert electrical connector (A) (circuit 14) into switch (B).
3. Place switch (B) in position on panel (C).
4. Place guard (D) in position on switch (B).
5. Using socket and extension, install nut (E) and lockwasher (F) securing guard (D) and switch (B) to panel (C).
6. Install panel in vehicle (page 10-36).



TA248983

MASTER CONTROL PANEL REPAIR (Sheet 6 of 73)
Master Battery Switch And Indicator Lamp Replacement (Sheet 1 of 4)

PROCEDURE INDEX

TOOLS: Cross-tip screwdriver
10 in. adjustable wrench.

SUPPLIES: Silicone compound (Item 32, Appendix D)

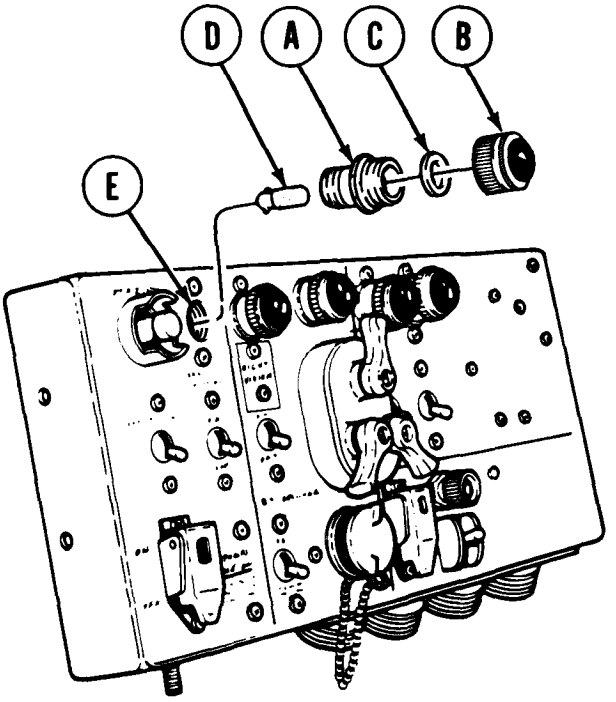
PRELIMINARY PROCEDURE: Remove panel from vehicle (page 10-34).

REMOVAL:

NOTE

If necessary, use adjustable wrench to remove adapter (A).

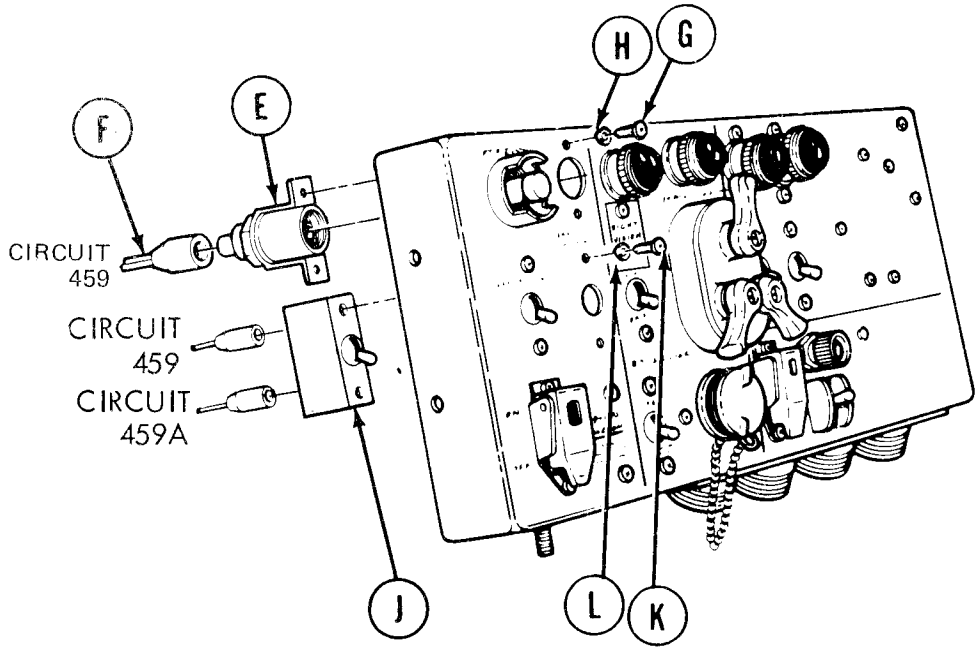
1. Using fingers, remove lens (B) and adapter (A).
2. Remove packing (C) from adapter (A).
3. Using fingers, remove lamp (D) from base assembly (E) by pushing in and turning counterclockwise.



Go on to Sheet 2

TA248984

MASTER CONTROL PANEL REPAIR (Sheet 7 of 73)
Master Battery Switch And Indicator Lamp Replacement (Sheet 2 of 4)

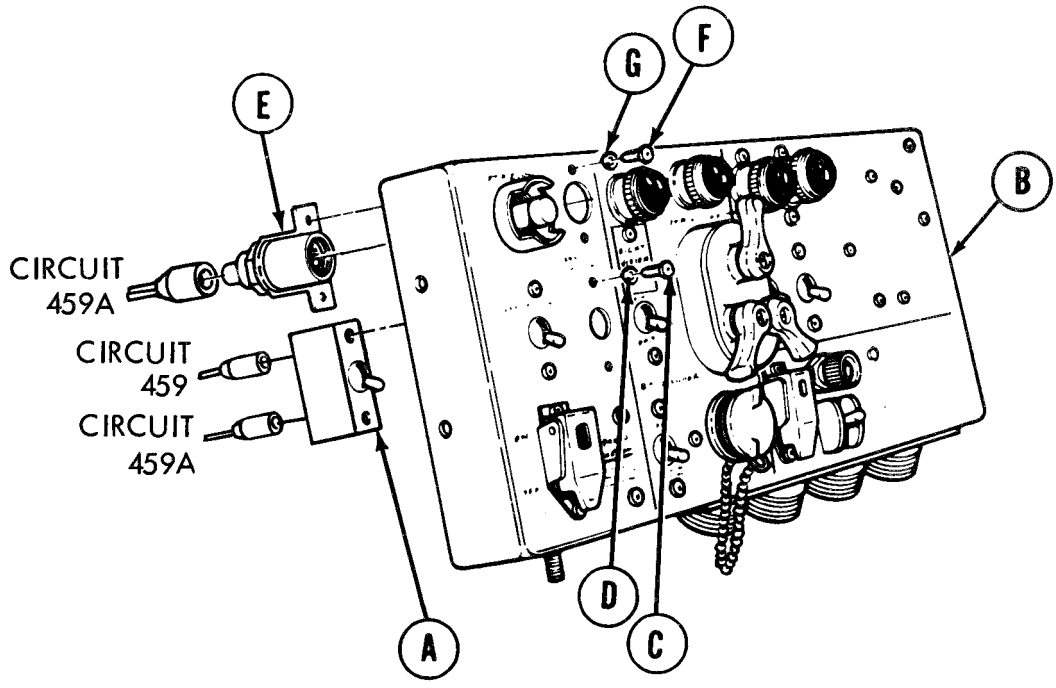


4. Using fingers, remove connector (F) from base assembly (E) by pulling out.
5. Using screwdriver, remove two screws (G) and lockwashers (H) securing base assembly (E) to panel.
6. Remove base assembly (E).
7. Using fingers, remove two connectors (circuits 459 and 459A) from back of switch (J) by pulling out.
8. Using screwdriver, remove two screws (K) and lockwashers (L) securing switch (J) to panel.
9. Remove switch (J).

Go on to Sheet 3

TA248985

MASTER CONTROL PANEL REPAIR (Sheet 8 of 73)
Master Battery Switch And Indicator Lamp Replacement (Sheet 3 of 4)



INSTALLATION:

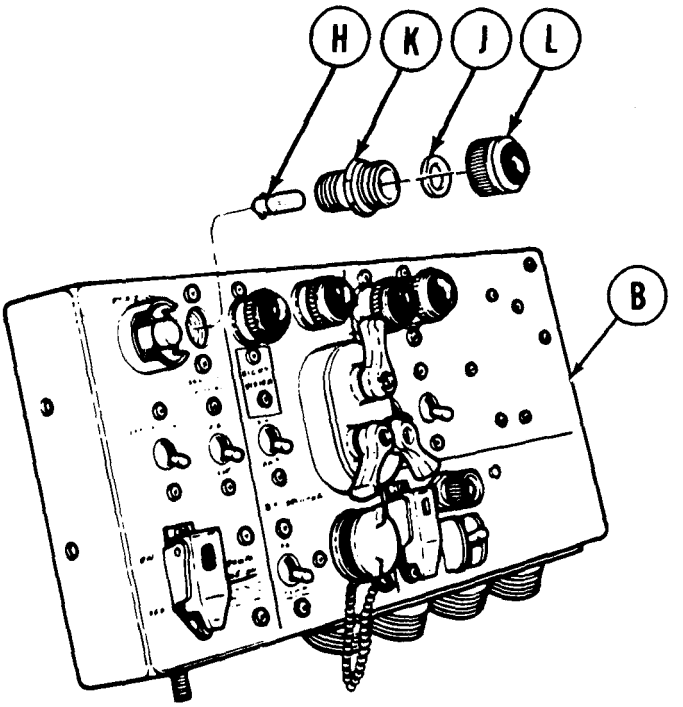
1. Apply silicone compound to two male connectors (circuits 459 and 459A).
2. Using fingers, install two connectors (circuits 459 and 459A) to rear of switch (A) by pushing in.
3. Place switch (A) in position on panel (B).
4. Using screwdriver, install two screws (C) and lockwashers (D).
5. Using fingers, install connector (circuit 459A) to rear of base assembly (E) by pushing in.
6. Place base assembly (E) in position on panel (B).
7. Using screwdriver, install two screws (F) and lockwashers (G) securing base assembly (E) to panel (B).

Go to Sheet 4

TA248986

MASTER CONTROL PANEL REPAIR (Sheet 9 of 73)
Master Battery Switch And Indicator Lamp Replacement (Sheet 4 of 4)

8. Using fingers, install lamp (H) in position by pushing in and turning clockwise.
9. Using fingers, place packing (J) on adapter (K).
10. Using fingers, install adapter (K) and lens (L) on panel (B).
11. Install panel in vehicle (page 10-36).



End of Task

TA248987

MASTER CONTROL PANEL REPAIR (Sheet 10 of 73)
Engine Fuel Shutoff and Fuel Pump Switch Replacement (Sheet 1 of 3)

PROCEDURE INDEX

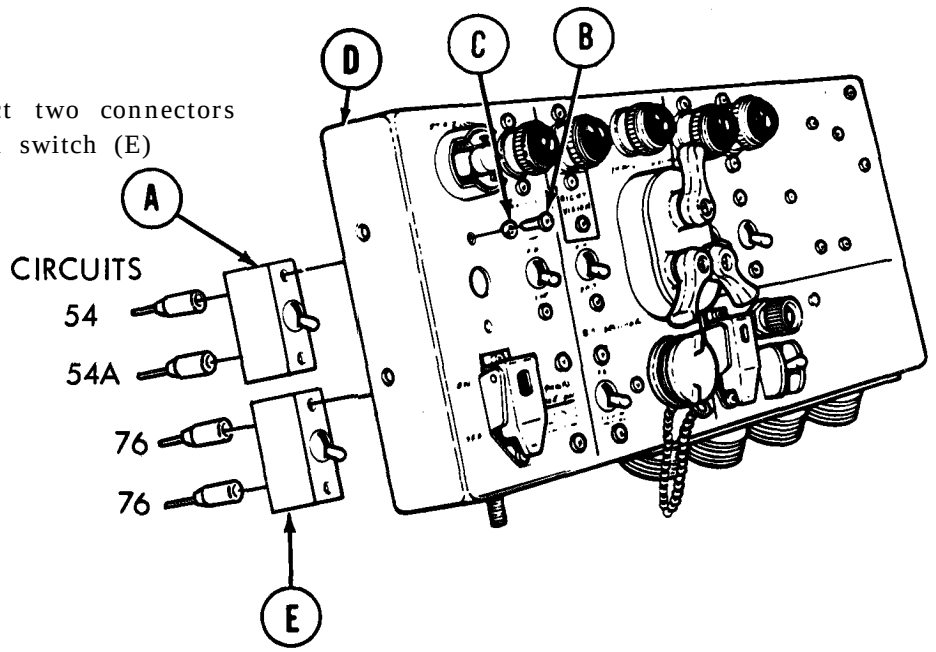
TOOLS: Cross-tip screwdriver

SUPPLIES: Silicone compound (Item 32, Appendix D)

PRELIMINARY PROCEDURE: Remove panel from vehicle (page 10-34).

REMOVAL:

1. Using fingers, remove two conectors (circuits 54 and 54A) from switch (A) by pulling out.
2. Using screwdriver, remove two screws (B) and lockwashers (C) securing switch (A) to panel (D).
3. Remove switch (A).
4. Using fingers, disconnect two connectors (circuits 76 and 76) from switch (E) by pulling out.



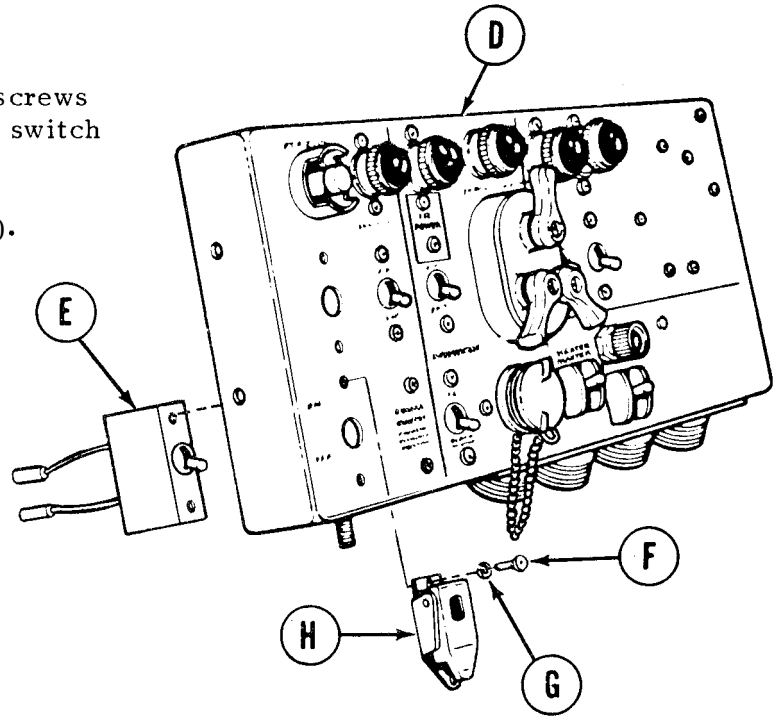
Go on to Sheet 2

TA248988

MASTER CONTROL PANEL REPAIR (Sheet 11 of 73)
Engine Fuel Shutoff and Fuel Pump Switch Replacement (Sheet 2 of 3)

5. Using screwdriver, remove two screws (F) and lockwashers (G) securing switch (E) and guard (H) to panel (D).

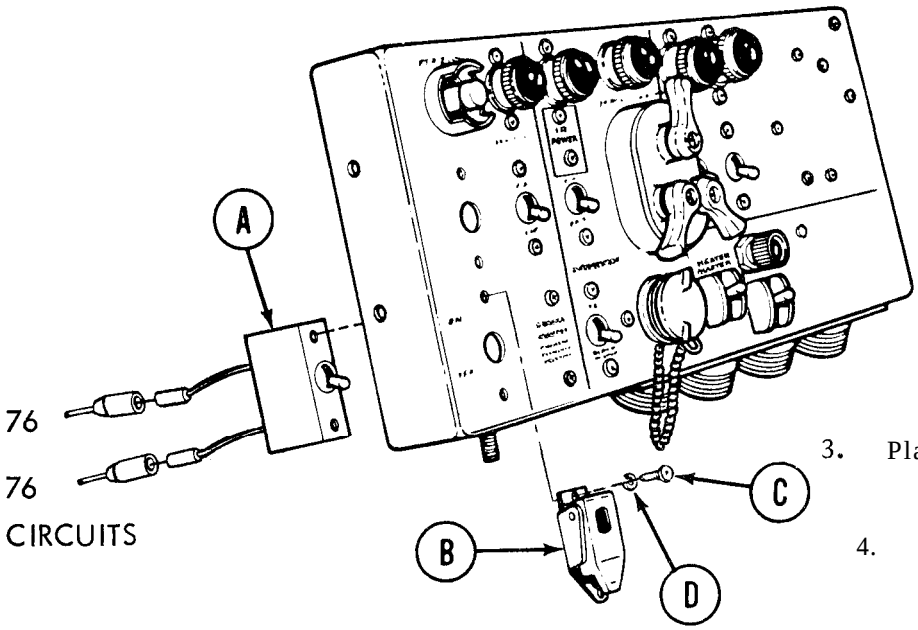
6. Remove guard (H) and switch (E).



INSTALLATION:

1. Apply silicone compound to two male connectors.

2. Using fingers, connect two connectors (circuits 76 and 76) to switch (A).



3. Place switch (A) and guard (B) in

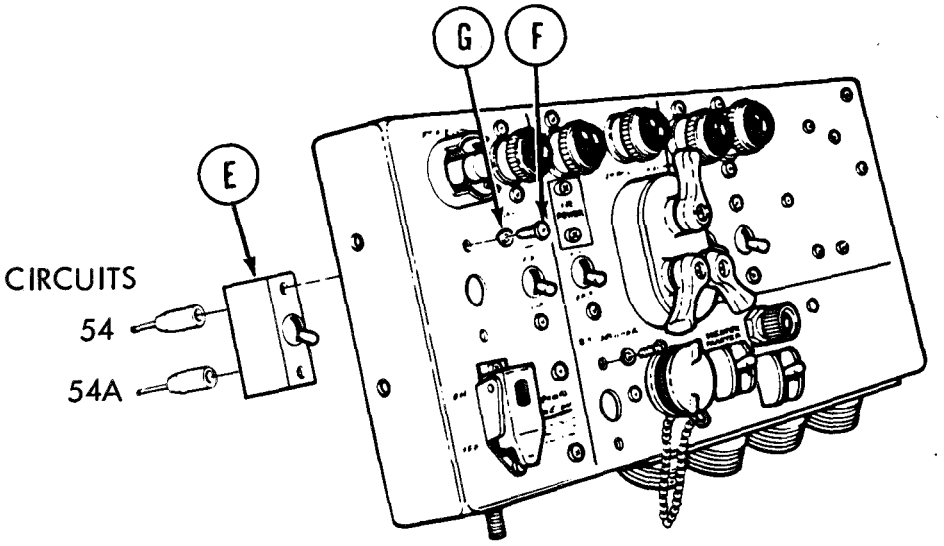
4. Using screwdriver, install two screws (C) and lockwashers (D).

Go on to Sheet 3

TA248989

MASTER CONTROL PANEL REPAIR (Sheet 12 of 73)
Engine Fuel Shutoff and Fuel Pump Switch Replacement (Sheet 3 of 3)

5. Apply silicone compound to two male connectors.
6. Using fingers, connect connectors (circuits 54 and 54A) to switch (E) by pushing in.
7. Place switch (E) in position on panel.
8. Using screwdriver, install two screws (F) and lockwashers (G).
9. Install panel in vehicle (page 10-36).



End of Task

TA248990

MASTER CONTROL PANEL REPAIR (Sheet 13 of 73)
Night Vision (IR) Power Switch And Indicator Light Replacement (Sheet 1 of 4)

PROCEDURE INDEX

TOOLS: Cross-tip screwdriver
10 in. adjustable wrench.

SUPPLIES: Silicone compound (Item 32, Appendix D)

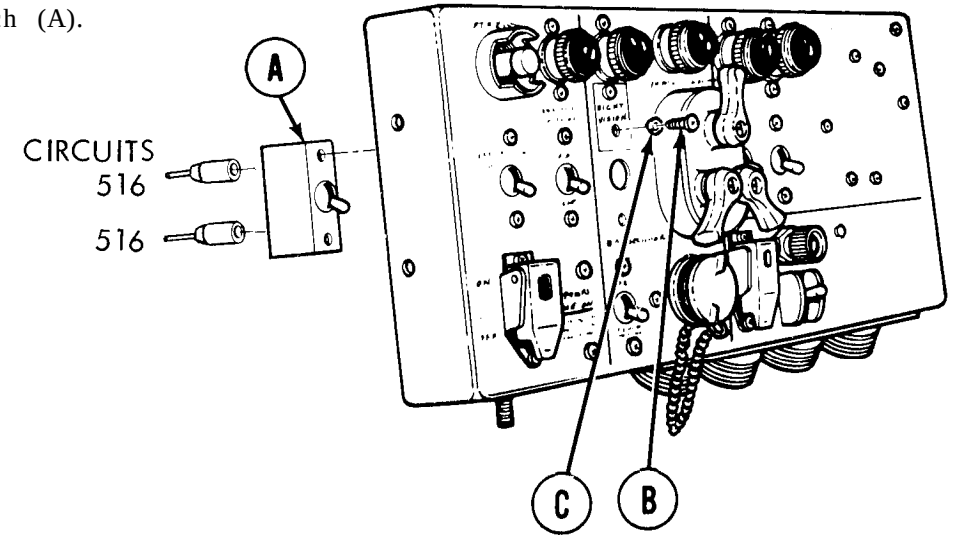
PRELIMINARY PROCEDURE: Remove panel from vehicle (page 10-34).

REMOVAL:

1. Using fingers, remove two connectors (circuit 516) from rear of switch (A).

2. Using screwdriver, remove two screws (B) and lockwashers (C) securing switch (A) to panel.

3. Remove switch (A).



Go on to Sheet 2

TA248991

MASTER CONTROL PANEL REPAIR (Sheet 14 of 73)
Night Vision (IR) Power Switch And Indicator Light Replacement (Sheet 2 of 4)

4. Using fingers, remove connector (circuit 516) from rear of base assembly (D).

5. Remove lens (E) and adapter (F) from base assembly (D) by turning counter clockwise.

NOTE

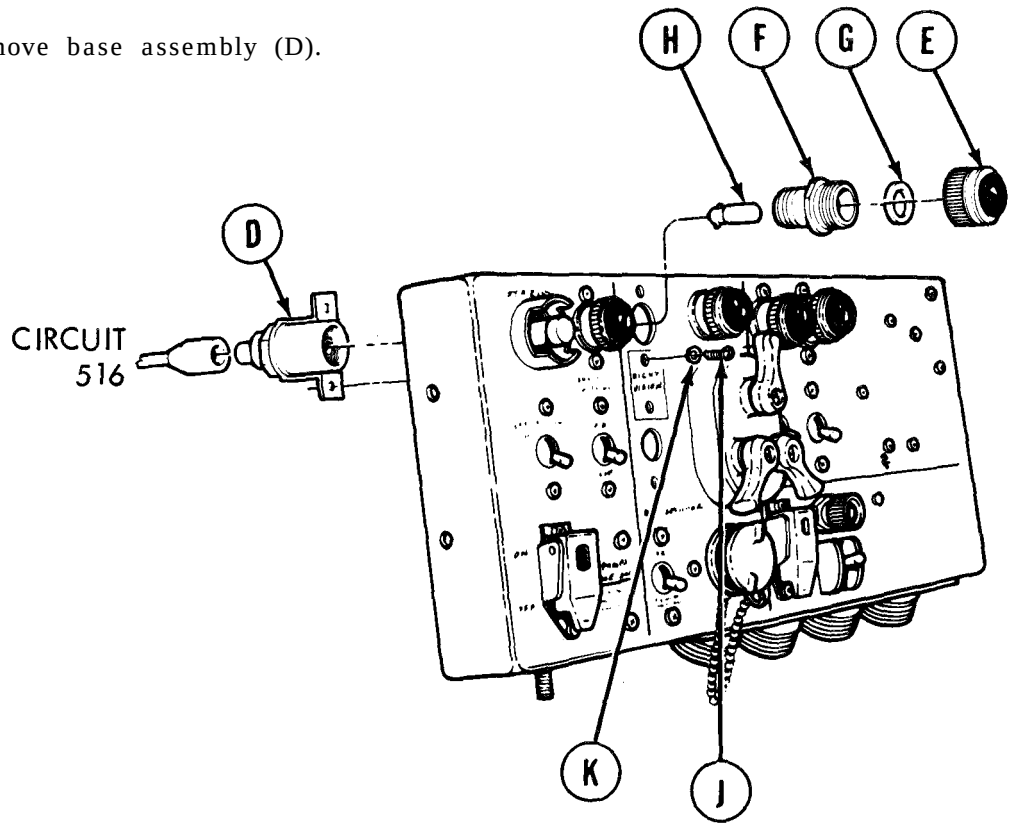
If necessary, use adjustable wrench to remove adapter (F).

6. Remove packing (G) from adapter (F).

7. Using fingers, remove lamp (H) by pushing in and turning counterclockwise.

8. Using screwdriver, remove two screws (J) and lockwashers (K) securing base assembly (D) to panel.

9. Remove base assembly (D).



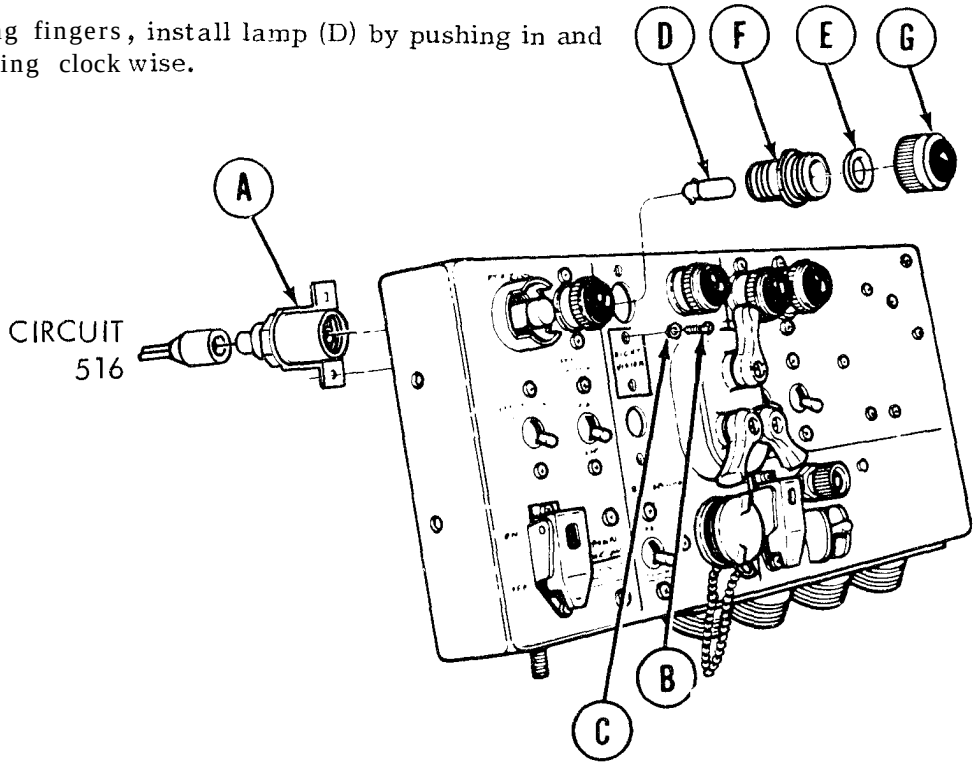
Go on to Sheet 3

TA248992

MASTER CONTROL PANEL REPAIR (Sheet 15 of 73)
Night Vision (IR) Power Switch And Indicator Light Replacement (Sheet 3 of 4)

INSTALLATION:

1. Using fingers, connect electrical connector (circuit 516) to base assembly (A) by pushing in.
2. Place base assembly (A) in position on panel.
3. Using screwdriver, install two screws (B) and lockwashers (C) securing base assembly (A) to panel.
4. Using fingers, install lamp (D) by pushing in and turning clockwise.



5. Using fingers, install packing (E) on adapter (F).
6. Using fingers, install adapter (F) and lens (G) in panel by turning clockwise.

Go on to Sheet 4

TA248993

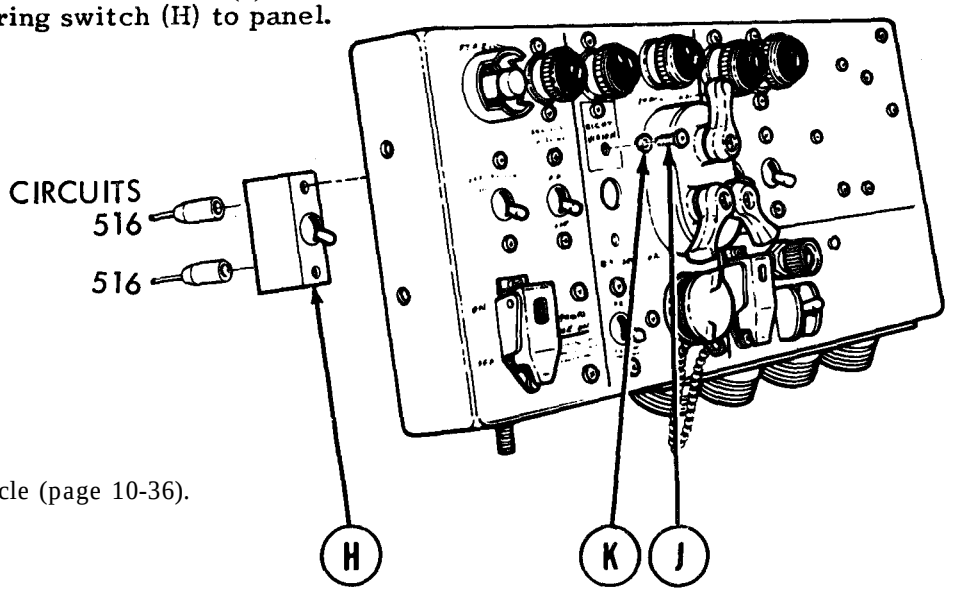
MASTER CONTROL PANEL REPAIR (Sheet 16 of 73)
Night Vision (IR) Power Switch And Indicator Light Replacement (Sheet 4 of 4)

7. Apply silicone compound to two male electrical connectors circuit 516.

8. Using fingers, connect two electrical connectors (circuit 516) to rear of switch (H) by pushing in.

9. Place switch (H) in position on panel.

10. Using screwdriver, install two screws (J) and lockwashers (K) securing switch (H) to panel.



11. Install panel in vehicle (page 10-36).

End of Task

TA248994

MASTER CONTROL PANEL REPAIR (Sheet 17 of 73)
Lighting Control Switch And Hi Beam Indicator Light Replacement (Sheet 1 of 4)

PROCEDURE INDEX

TOOLS: Cross-tip screwdriver
10 in. adjustable wrench

SUPPLIES: Silicone compound (Item 32, Appendix D)

PRELIMINARY PROCEDURE: Remove panel from vehicle (page 10-34).

REMOVAL:

1. Using fingers, disconnect electrical connector (circuit 519) from base assembly (A) by pulling out.

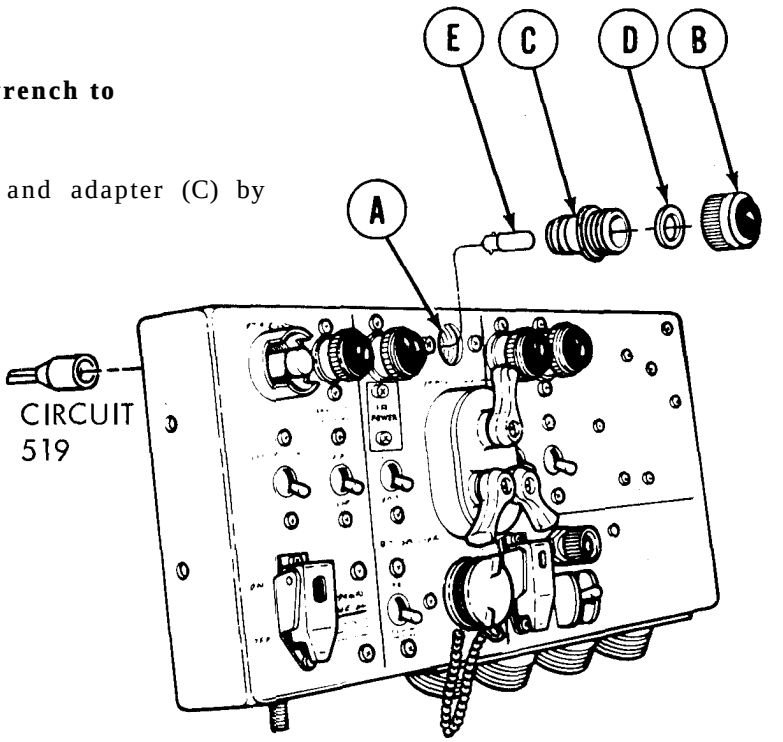
NOTE

If necessary, use adjustable wrench to remove adapter.

2. Using fingers, remove lens (B) and adapter (C) by turning counterclockwise.

3. Remove packing (D) from adapter (C).

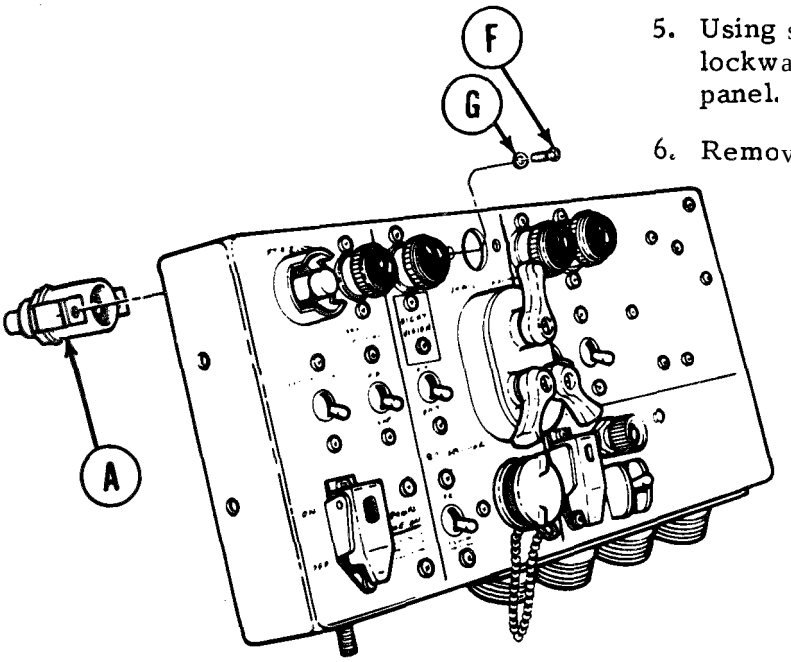
4. Using fingers, remove lamp (E) by pushing in and turning counterclockwise.



Go on to Sheet 2

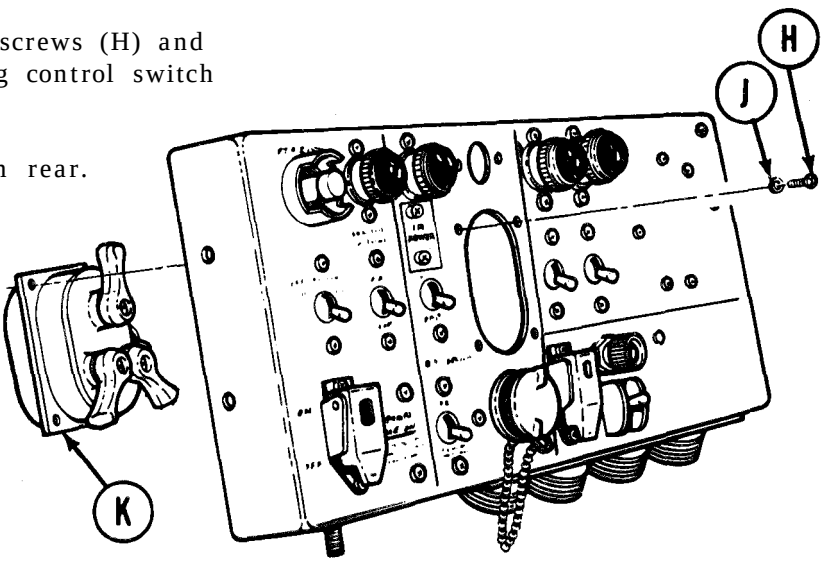
TA248995

MASTER CONTROL PANEL REPAIR (Sheet 18 of 73)
Lighting Control Switch And Hi Beam Indicator Light Replacement (Sheet 2 of 4)



5. Using screwdriver, remove two screws (F) and lockwashers (G) securing base assembly (A) to panel.
6. Remove base assembly (A).

7. Using screwdriver, remove four screws (H) and lockwashers (J) securing lighting control switch (K) to panel.
8. Remove control switch (K), from rear.



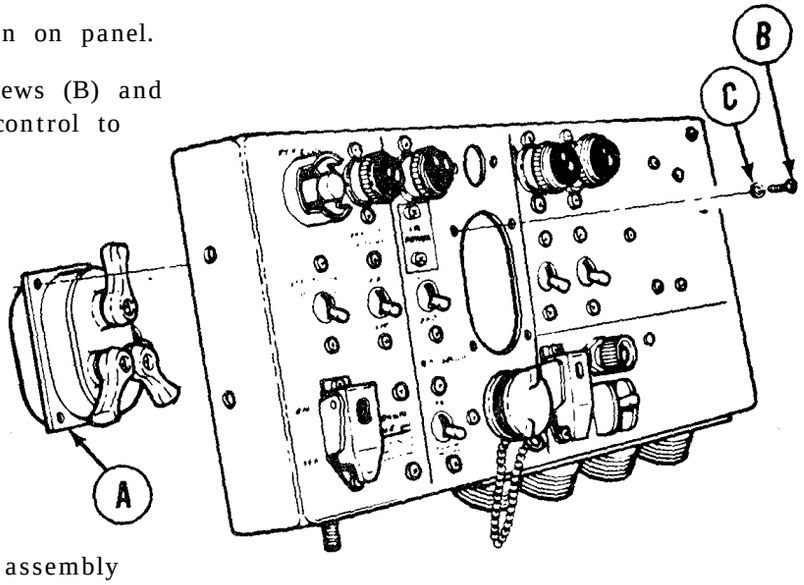
Go on to Sheet 3

TA248996

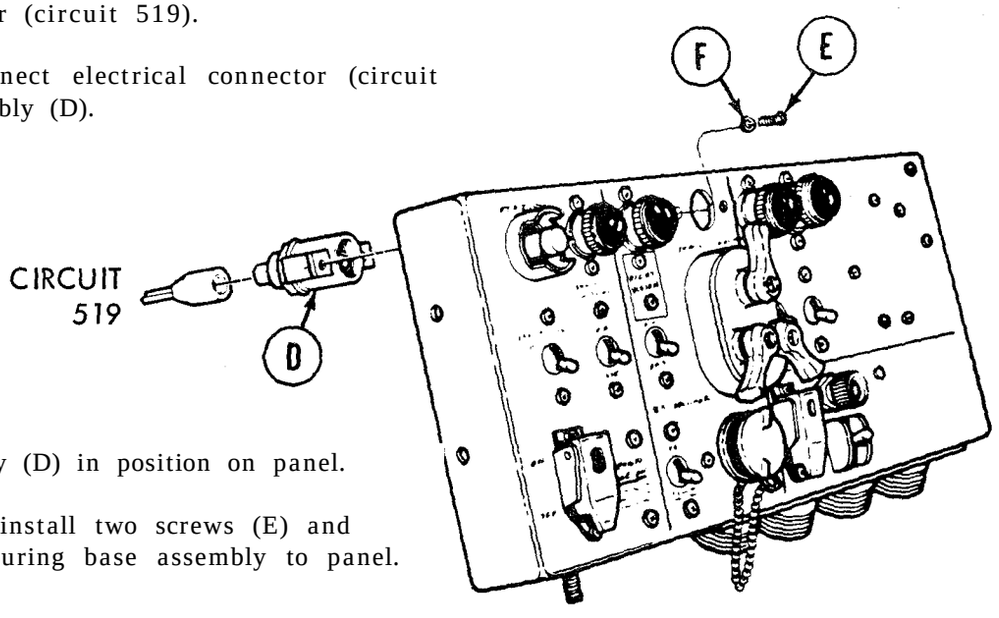
MASTER CONTROL PANEL REPAIR (Sheet 19 of 73)
Lighting Control Switch And Hi Beam Indicator Light Replacement (Sheet 3 of 4)

INSTALLATION:

1. Place control switch (A) in position on panel.
2. Using screwdriver, install four screws (B) and lockwashers (C) securing switch control to panel.



3. Apply silicone compound to base assembly electrical connector (circuit 519).
4. Using fingers, connect electrical connector (circuit 519) to base assembly (D).



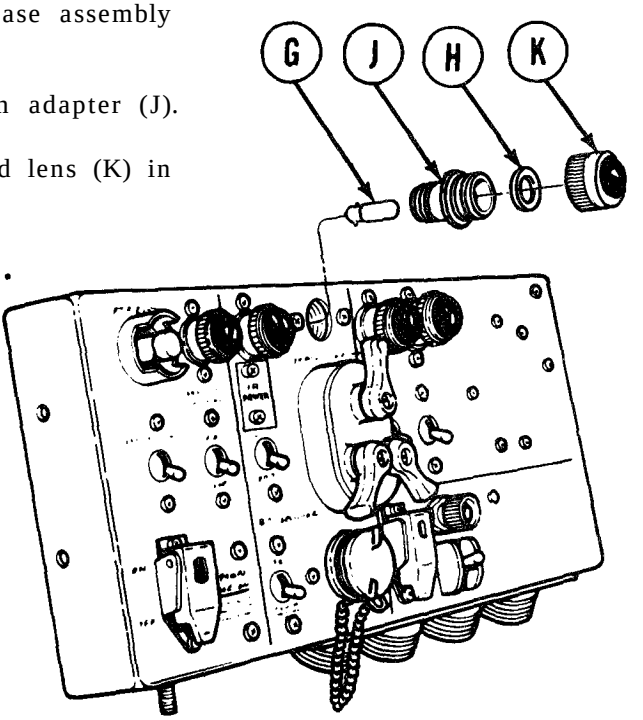
5. Place base assembly (D) in position on panel.
6. Using screwdriver, install two screws (E) and lockwashers (F) securing base assembly to panel.

Go on to Sheet 4

TA248997

MASTER CONTROL PANEL REPAIR (Sheet 20 of 73)
Lighting Control Switch And Hi Beam Indicator Light Replacement (Sheet 4 of 4)

7. Using fingers, install lamp (G) in base assembly by pushing in turning clockwise.
8. Using fingers, install packing (H) on adapter (J).
9. Using fingers, install adapter (J) and lens (K) in panel by turning clockwise.
10. Install panel in vehicle (page 10-36).



End of Task

TA248998

MASTER CONTROL PANEL REPAIR (Sheet 21 of 73)
Blackout Selector Switch Replacement (Sheet 1 of 2)

TOOLS: Cross-tip screwdriver

SUPPLIES: Silicone compound (Item 32, Appendix D)

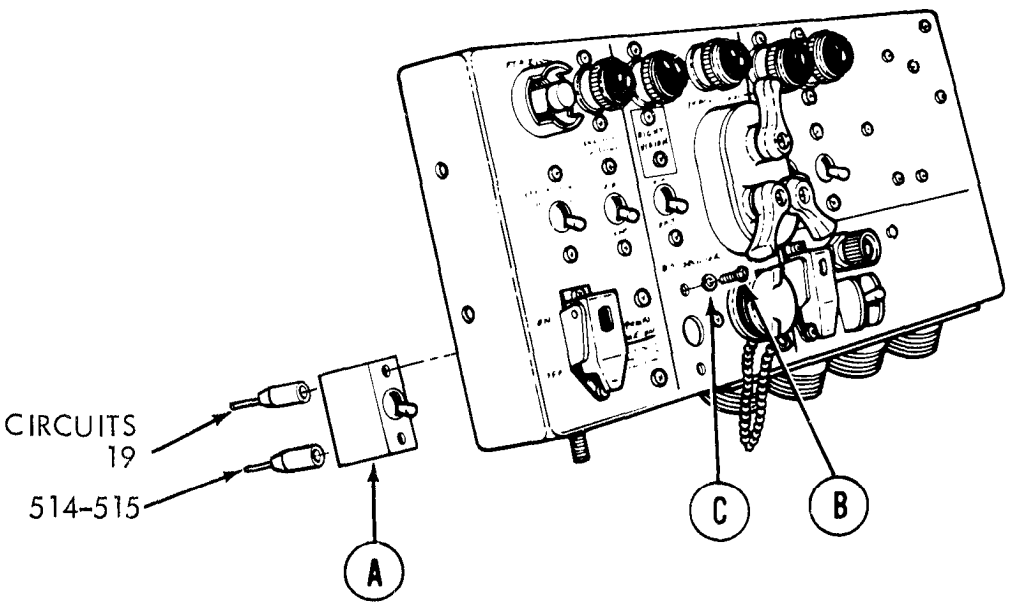
PRELIMINARY PROCEDURE:
Remove panel from vehicle (page 10-34).

REMOVAL:

1. Using fingers, remove two connectors (circuits 19 and 514-515) from switch (A) by pulling out.

2. Using screwdriver, remove two screws (E) and lockwashers (C).

3. Remove switch (A) from panel.



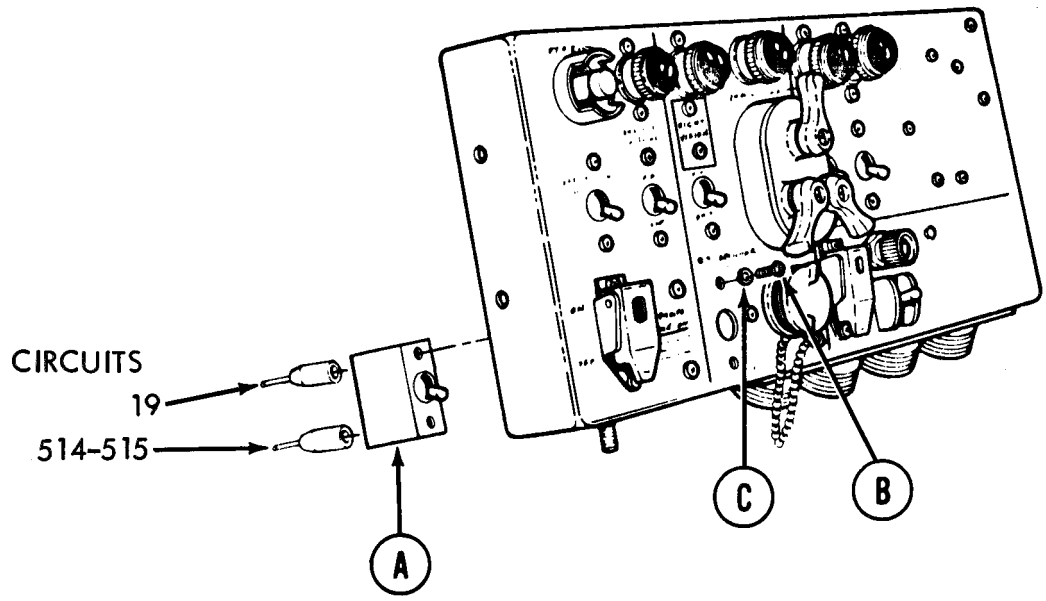
Go on to Sheet 2

TA248999

MASTER CONTROL PANEL REPAIR (Sheet 22 of 73)
Blackout Selector Switch Replacement (Sheet 2 of 2)

INSTALLATION:

1. Apply silicone compound to two male connectors.
2. Using fingers, connect connectors (circuits 19 and 514-515) to switch (A).
3. Place switch (A) in position on panel.
4. Using screwdriver, install two screws (B) and lockwashers (C) securing switch (A) to panel.
5. Install panel in vehicle (page 10-36).



End of Task

TA249000

MASTER CONTROL PANEL REPAIR (Sheet 23 of 73)
Utility Outlet Replacement (Sheet 1 of 2)

TOOLS: Cross-tip screwdriver

SUPPLIES: Silicone compound (Item 32, Appendix D)

PRELIMINARY PROCEDURE:
Remove panel from vehicle (page 10-34).

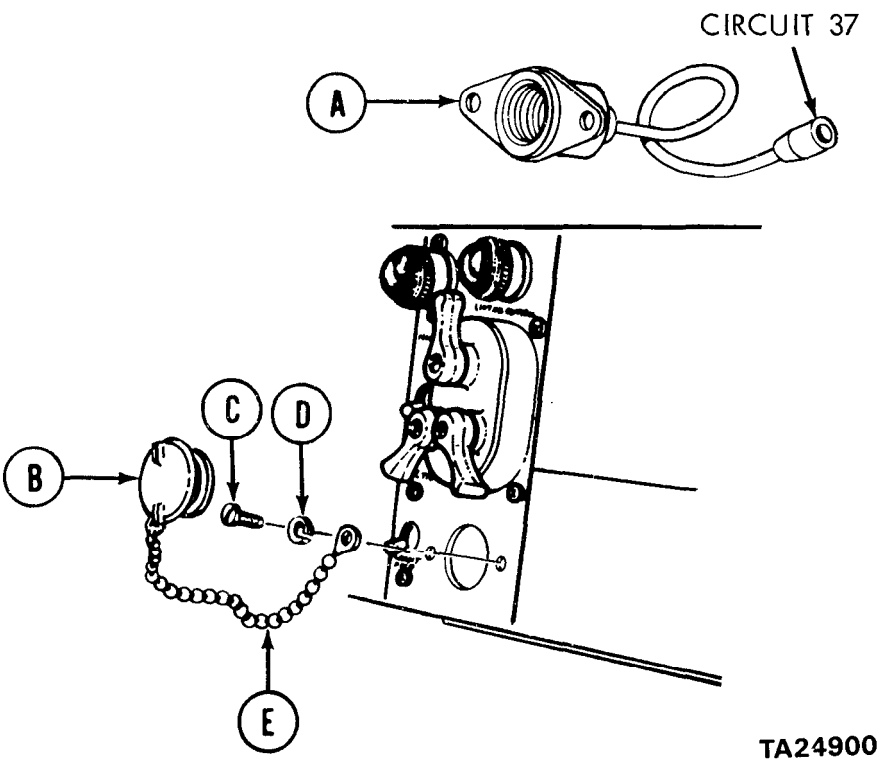
REMOVAL:

1. Using fingers, disconnect electrical connector (circuit 37) from utility outlet assembly (A).

2. Using fingers, remove cap (B) by turning counterclockwise.

3. Using screwdriver, remove two screws (C) and lockwashers (D) securing utility outlet assembly (A) to panel.

4. Remove utility outlet assembly (A), cap (B) and retainer chain (E).



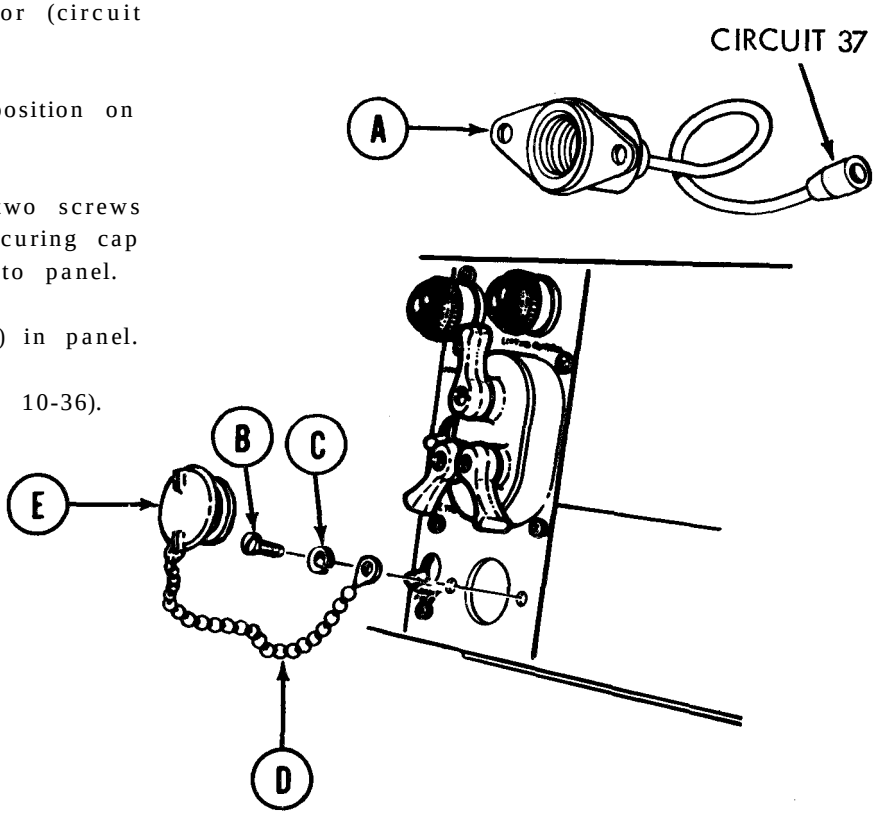
TA249001

Go on to Sheet 2

MASTER CONTROL PANEL REPAIR (Sheet 24 of 73)
Utility Outlet Replacement (Sheet 2 of 2)

INSTALLATION:

1. Apply silicone compound to utility outlet (A) electrical connector.
2. Connect electrical connector (circuit 37) to utility outlet (A).
3. Place utility outlet (A) in position on panel.
4. Using screwdriver, install two screws (B), lockwashers (C) and securing cap chain (D) utility outlet (A) to panel.
5. Using fingers, install cap (E) in panel.
6. Install panel in vehicle (page 10-36).



End of Task

TA249002

MASTER CONTROL PANEL REPAIR (Sheet 25 of 73)
Gas Particulate Switch And Indicator Light Replacement (Sheet 1 of 4)

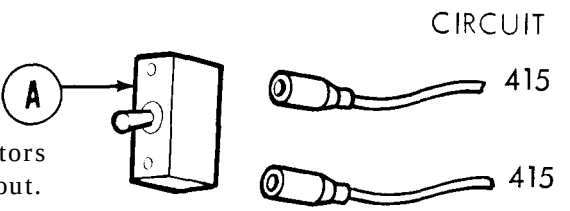
PROCEDURE INDEX

TOOLS: Cross-tip screwdriver

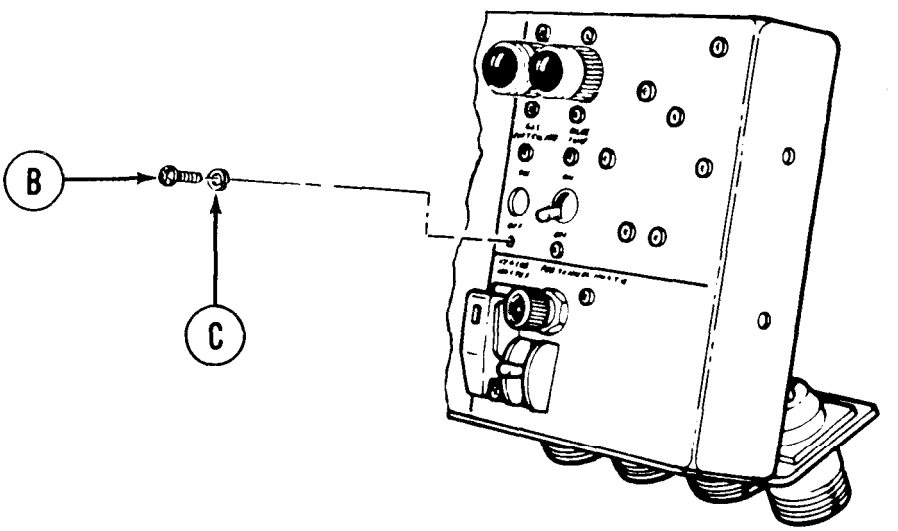
SUPPLIES: Silicone compound (Item 32, Appendix D)

PRELIMINARY PROCEDURE:
Remove panel from vehicle (page 10-34).

REMOVAL:



1. Using fingers, disconnect two electrical connectors (circuit 415) from rear of switch (A) by pulling out.
2. Using screwdriver, remove two screws (B) and lock-washers (C) securing switch (A) to panel.
3. Remove switch (A).

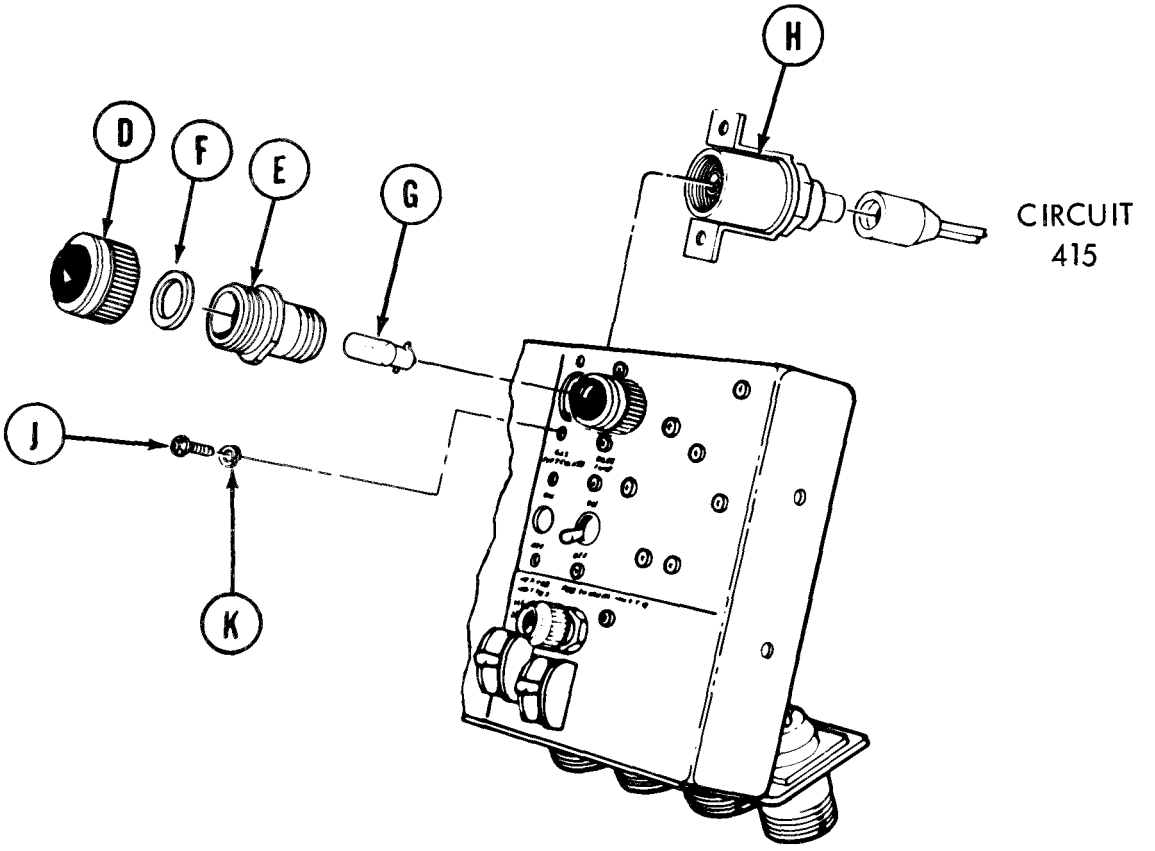


Go on to Sheet 2

TA249003

MASTER CONTROL PANEL REPAIR (Sheet 26 of 73)
Gas Particulate Switch And Indicator Light Replacement (Sheet 2 of 4)

4. Using fingers, remove lens (D) and adapter (E) by turning counterclockwise.
5. Remove packing (F) from adapter (E).
6. Using fingers, remove lamp (G) by pushing in, turning counterclockwise.
7. Using fingers, disconnect electrical connector from rear of base assembly (H).
8. Using screwdriver, remove two screws (J) and lockwashers (K) securing base assembly (H) to panel.
9. Remove base assembly (H).



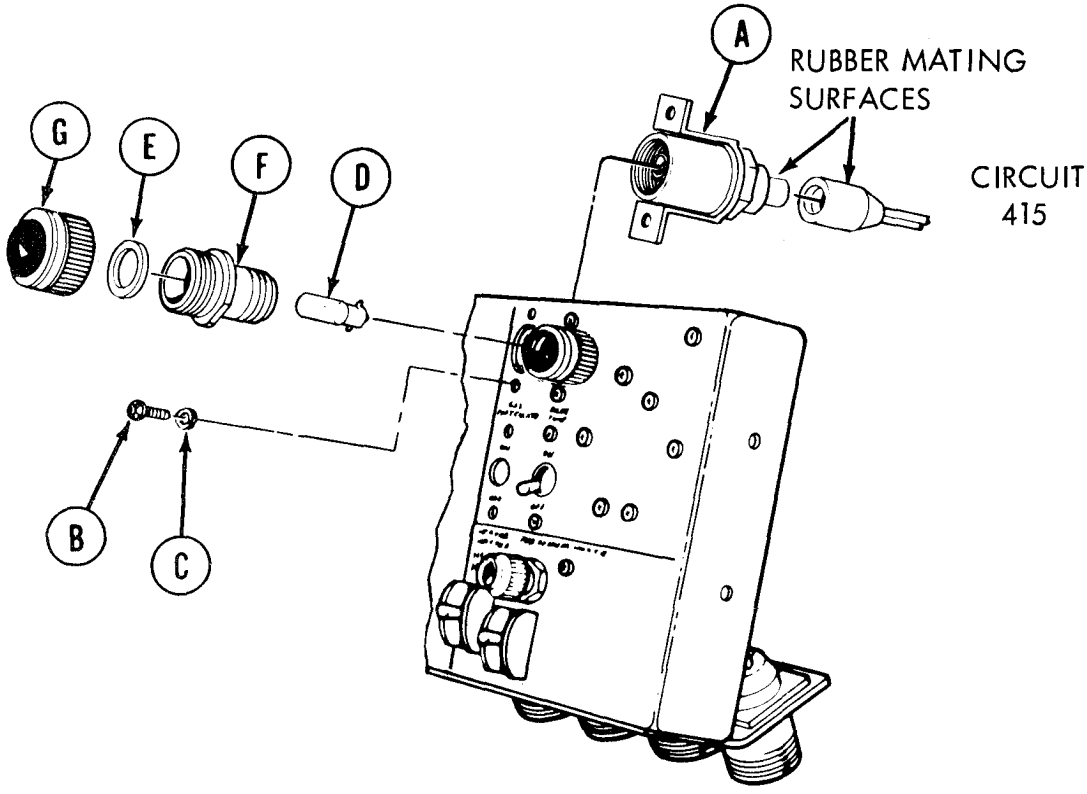
Go on to Sheet 3

TA249004

MASTER CONTROL PANEL REPAIR (Sheet 27 of 73)
Gas Particulate Switch And Indicator Light Replacement (Sheet 3 of 4)

INSTALLATION:

1. Apply silicone compound to rubber mating surfaces of connectors.
2. Using fingers, connect electrical connector (circuit 415) to rear of base assembly (A) by pushing in.
3. Place base assembly (A) in position on panel.
4. Using screwdriver, install two screws (B) and lockwashers (C) securing base assembly (A) to panel.
5. Using fingers, install lamp (D) by pushing in, turning clockwise.
6. Using fingers, place packing (E) on adapter (F).
7. Using fingers, install adapter (F) and lens (G) in panel by turning clockwise.

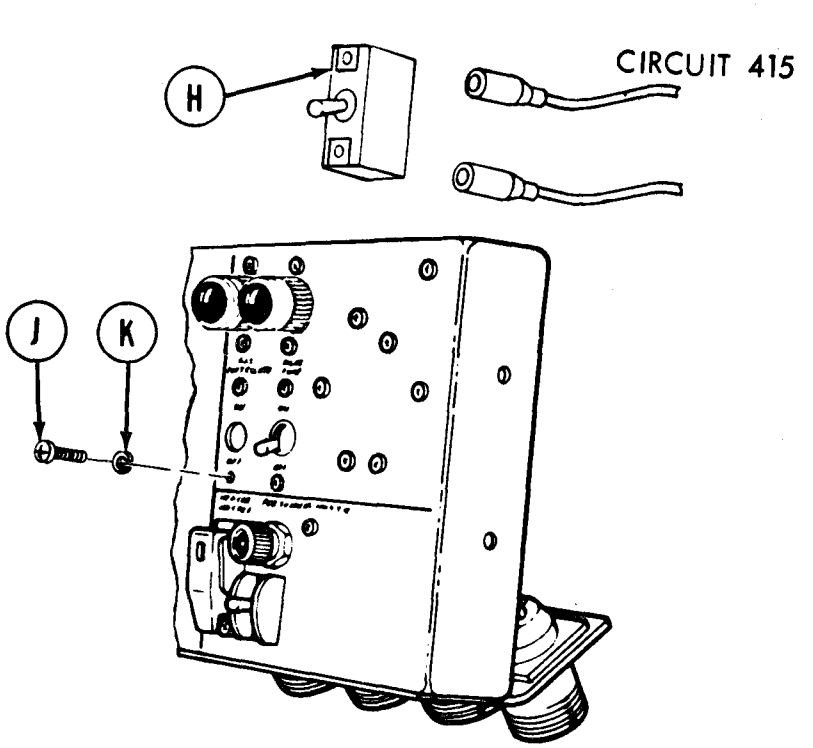


Go on to Sheet 4

TA249005

MASTER CONTROL PANEL REPAIR (Sheet 28 of 73)
Gas Particulate Switch And Indicator Light Replacement (Sheet 4 of 4)

8. Apply silicone compound to two male electrical connectors (circuit 415).
9. Using fingers, connect two male connectors (circuit 415) to switch (H) by pushing in.
10. Place switch (H) in position on panel.
11. Using screwdriver, install two screws (J) and lockwashers (K) securing switch (H) to panel.
12. Install panel in vehicle (page 10-36).



End of Task

TA249006

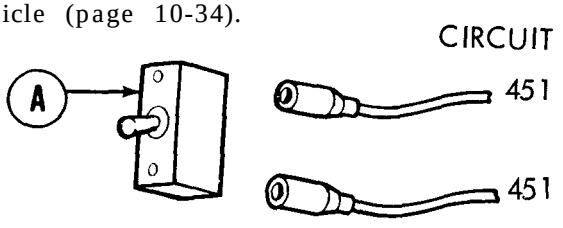
MASTER CONTROL PANEL REPAIR (Sheet 29 of 73)
Bilge Pump Switch And Indicator Light Replacement (Sheet 1 of 4)

PROCEDURE INDEX

TOOLS: Cross-tip screwdriver
10 in. adjustable wrench
1 in. combination and open end wrench

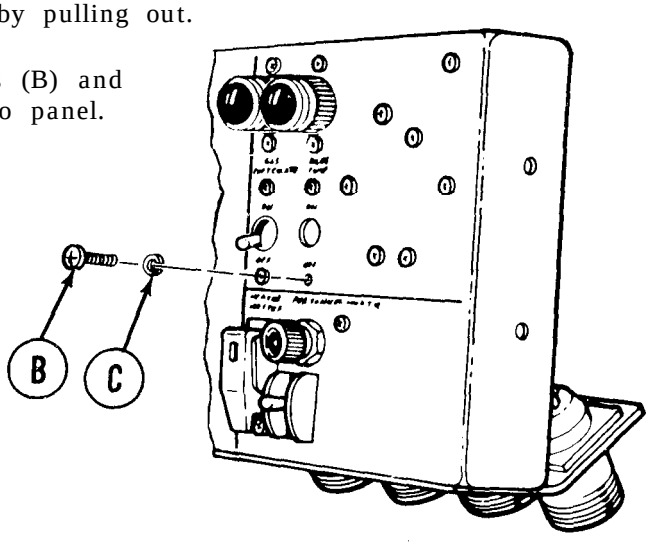
SUPPLIES: Silicone compound (Item 32, Appendix D)

PRELIMINARY PROCEDURE: Remove panel from vehicle (page 10-34).



REMOVAL:

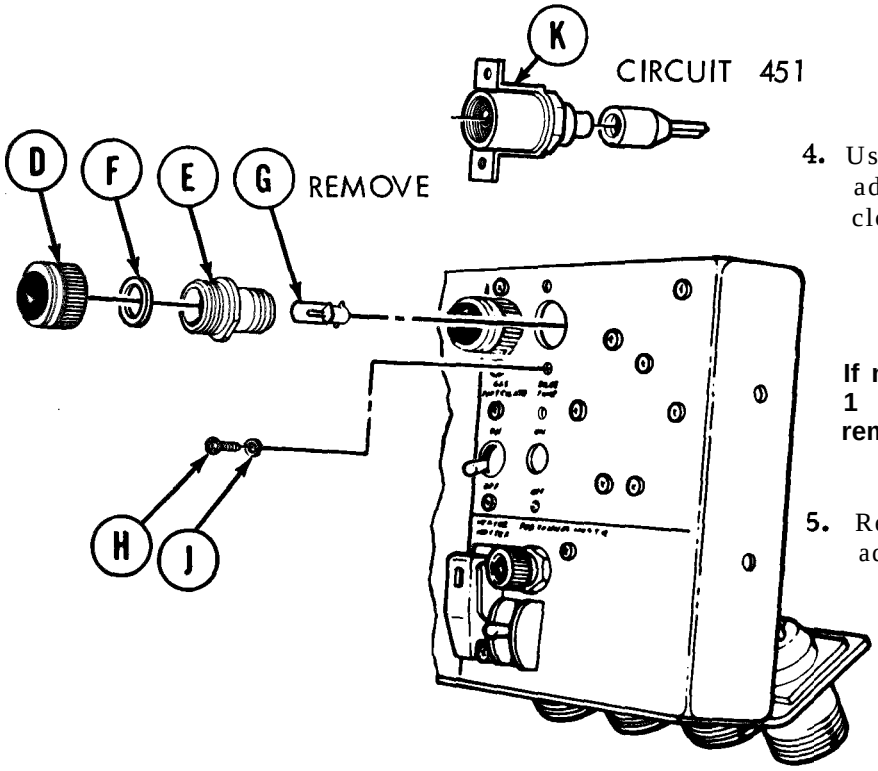
1. Using fingers, disconnect tow electrical connectors (circuit 451) from rear of switch (A) by pulling out.
2. Using screwdriver, remove two screws (B) and lockwashers (C) securing switch (A) to panel.
3. Remove switch (A).



Go on to sheet 2

TA249007

MASTER CONTROL PANEL REPAIR (Sheet 30 of 73)
Bilge Pump Switch And Indicator Light Replacement (Sheet 2 of 4)



4. Using fingers, remove lens (D) and adapter (E) by turning counterclockwise.

NOTE

If necessary, use adjustable wrench, 1 inch combination wrench, to remove adapter (E).

5. Remove packing (F) from adapter (E).

6. Using fingers, remove lamp (G) by pushing in, turning counterclockwise.

7. Using screwdriver, remove two screws (H) and lockwashers (J) securing base assembly (K) to panel.

8. Remove base assembly (K).

9. Using fingers, remove electrical connector (circuit 451) from rear of base assembly (K) by pulling out.

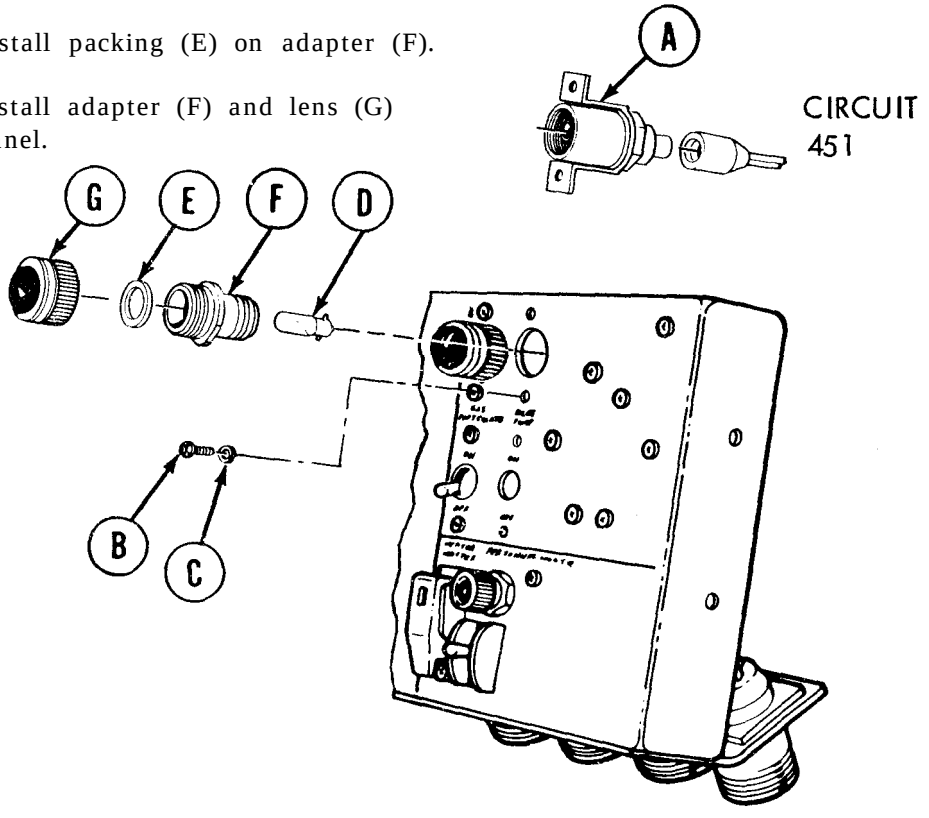
Go on to Sheet 3

TA249008

MASTER CONTROL PANEL REPAIR (Sheet 31 of 73)
Bilge Pump Switch And Indicator Light Replacement (Sheet 3 of 4)

INSTALLATION:

1. Using fingers, connect electrical connector (circuit 451) to rear of base assembly (A) by pushing in.
2. Place base assembly (A) in position on panel.
3. Using screwdriver, install two screws (B) and lockwashers, (C) securing base assembly (A) to panel.
4. Using fingers, install lamp (D) by pushing in and turning clockwise.
5. Using fingers, install packing (E) on adapter (F).
6. Using fingers, install adapter (F) and lens (G) in position on panel.

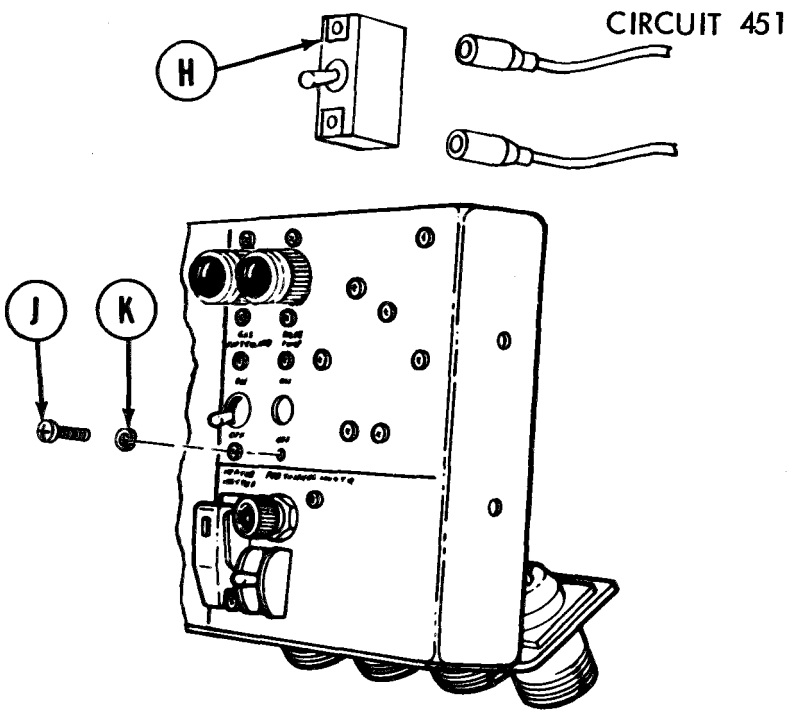


TA249009

Go on to Sheet 4

MASTER CONTROL PANEL REPAIR (Sheet 32 of 73)
Bilge Pump Switch And Indicator Light Replacement (Sheet 4 of 4)

7. Apply silicone compound to two electrical connectors (circuits 451).
8. Using fingers, connect two electrical connectors, (circuit 451) to rear of switch (H) by pushing in.
9. Place switch (H) in position on panel.
10. Using screwdriver, install two screws (J) and lockwashers (K) securing switch (H) to panel.



Install panel in vehicle (page 10-36).

End of Task

TA249010

MASTER CONTROL PANEL REPAIR (Sheet 33 of 73)
Circuit Breaker Replacement (Sheet 1 of 7)

PROCEDURE INDEX

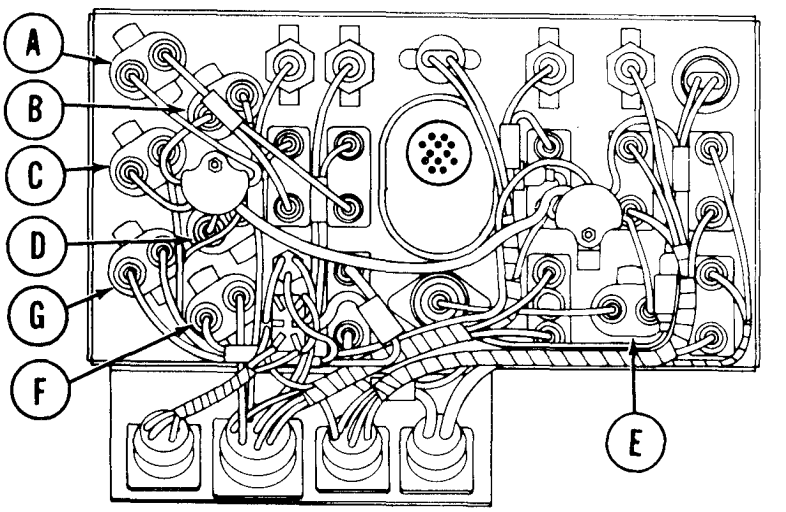
TOOLS: 3/8 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
Cross-tip screwdriver
11/32 in. wrench
4 in. flat-tip screwdriver

SUPPLIES: Silicone compound (Item 32, Appendix D)
Lockwashers

PRELIMINARY PROCEDURE: Remove panel from vehicle (page 10-34).

NOTE

There are seven circuit breakers located in the master control panel. Five circuit breakers (gas particulate (A), IR (night vision), power (B), fuel shut-off (C), fuel pump (D) and bilge pump and utility outlet (E)) are replaced by removing mounting screws from the front of the panel. Two circuit breakers (gage (F) and manifold preheat (G) are replaced by removing mounting screws from the rear of the panel.



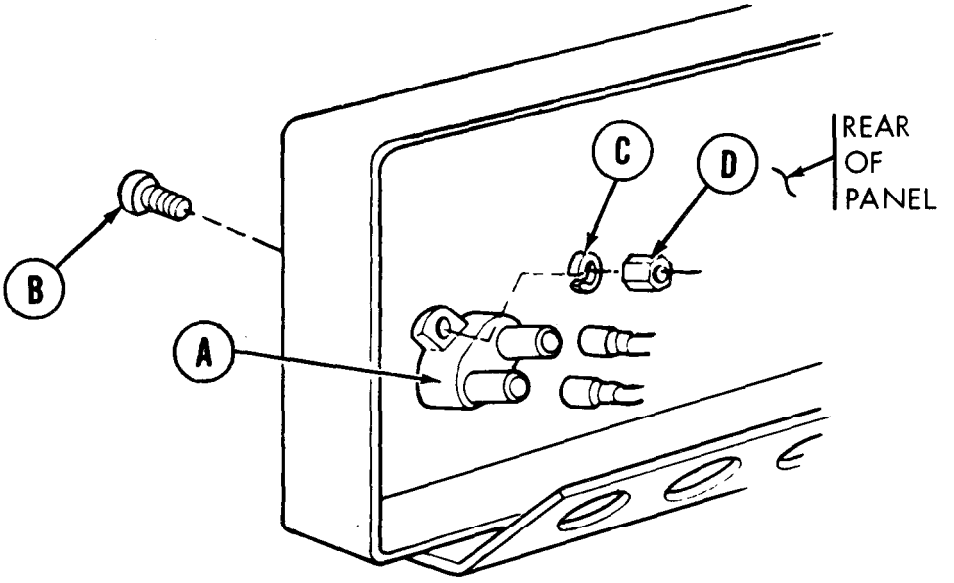
Go on to Sheet 2

TA249011

MASTER CONTROL PANEL REPAIR (Sheet 34 of 73)
Circuit Breaker Replacement (Sheet 2 of 7)

REMOVAL; CIRCUIT BREAKERS (A, B, C, AND E):

1. Using fingers, remove two electrical connectors from rear of circuit breaker (A) by pulling out.
2. Using cross-tip screwdriver and wrench, remove two screws (B), lockwashers (C), and nuts (D) securing circuit breaker (A) to panel.
3. Remove circuit breaker (A).



INSTALLATION; CIRCUIT BREAKERS (A,B,C, AND E):

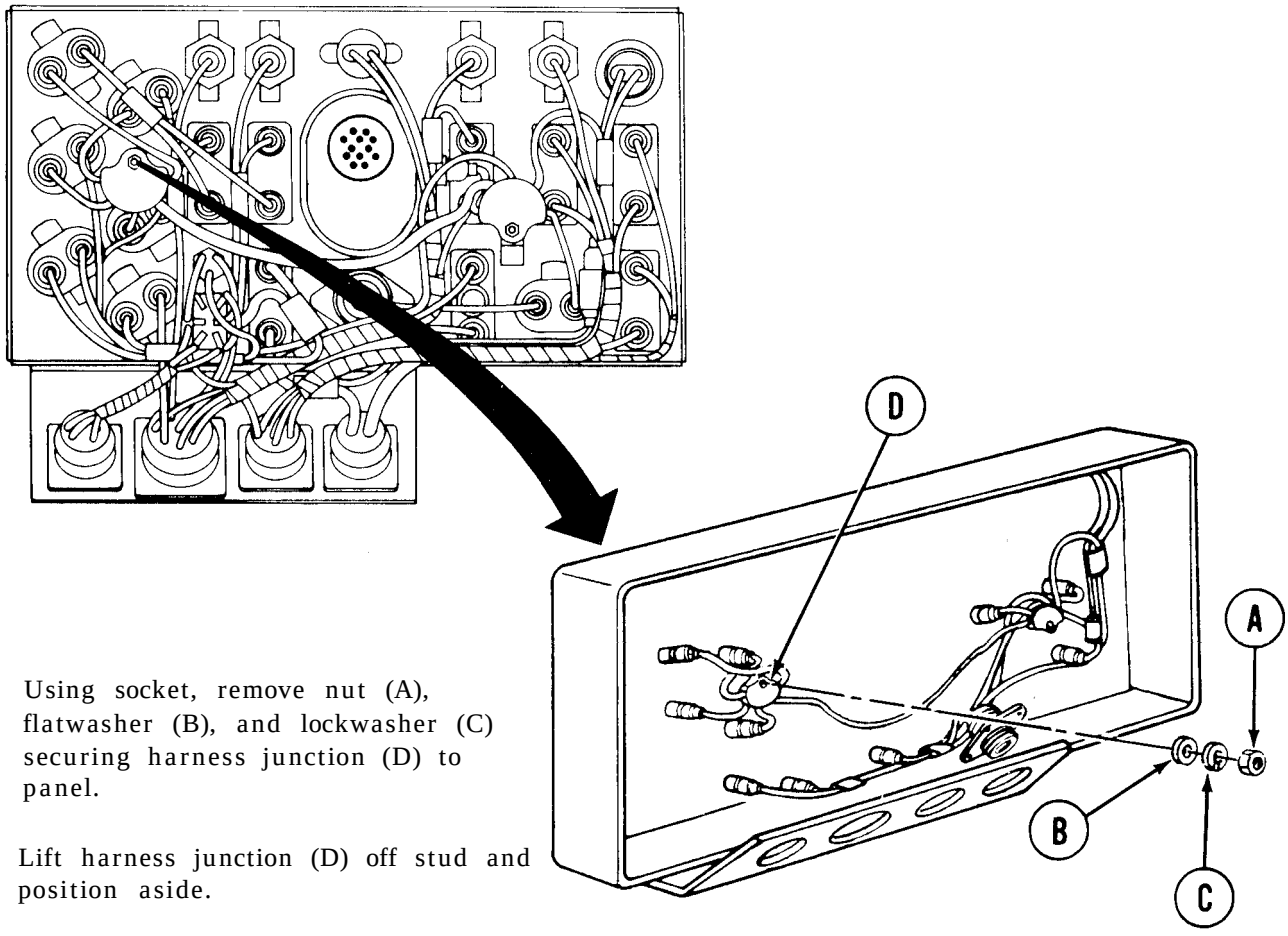
1. Place circuit breaker (A) in position on panel.
2. Using cross-tip screwdriver and wrench, install two screws (B), lockwashers (C), and nuts (D).
3. Apply silicone compound to two male electrical connectors for circuit breaker (A).
4. Using fingers, connect two electrical connectors in rear of circuit breaker (A) by pushing in.

Go on to Sheet 3

TA249012

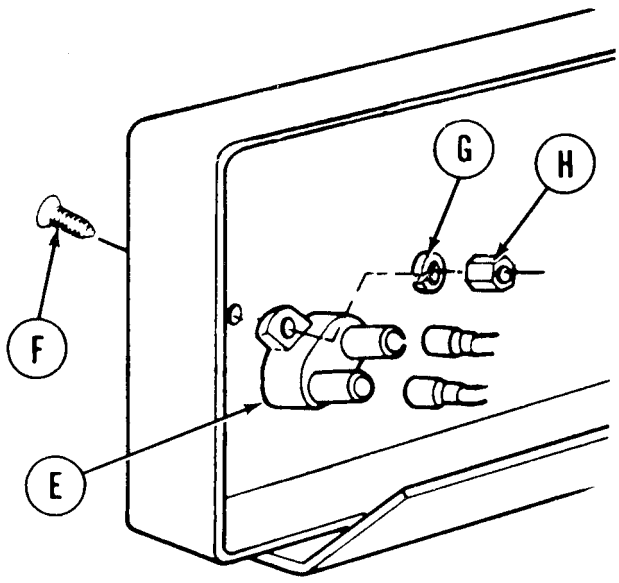
MASTER CONTROL PANEL REPAIR (Sheet 35 of 73)
Circuit Breaker Replacement (Sheet 3 of 7)

REMOVAL; CIRCUIT BREAKER (D):



1. Using socket, remove nut (A), flatwasher (B), and lockwasher (C) securing harness junction (D) to panel.

2. Lift harness junction (D) off stud and position aside.



3. Using fingers, remove two electrical connectors from rear of circuit breaker (E) by pulling out.

4. Using cross-tip screwdriver and wrench, remove two screws (F), lockwashers (G), and nuts (H) securing circuit breaker (E) to panel.

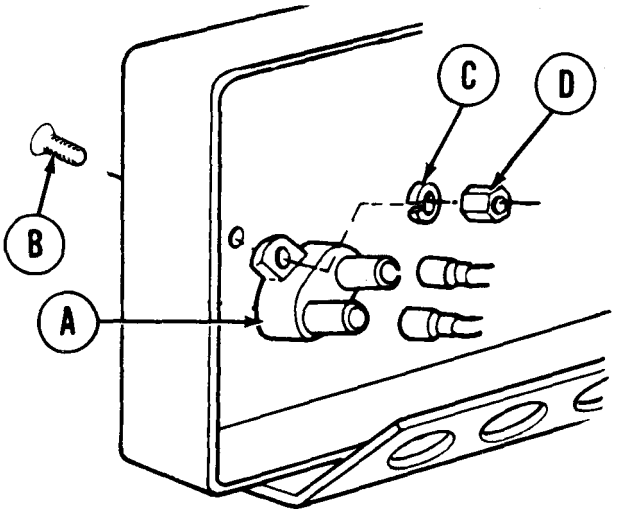
5. Remove circuit breaker (E).

Go on to Sheet 4

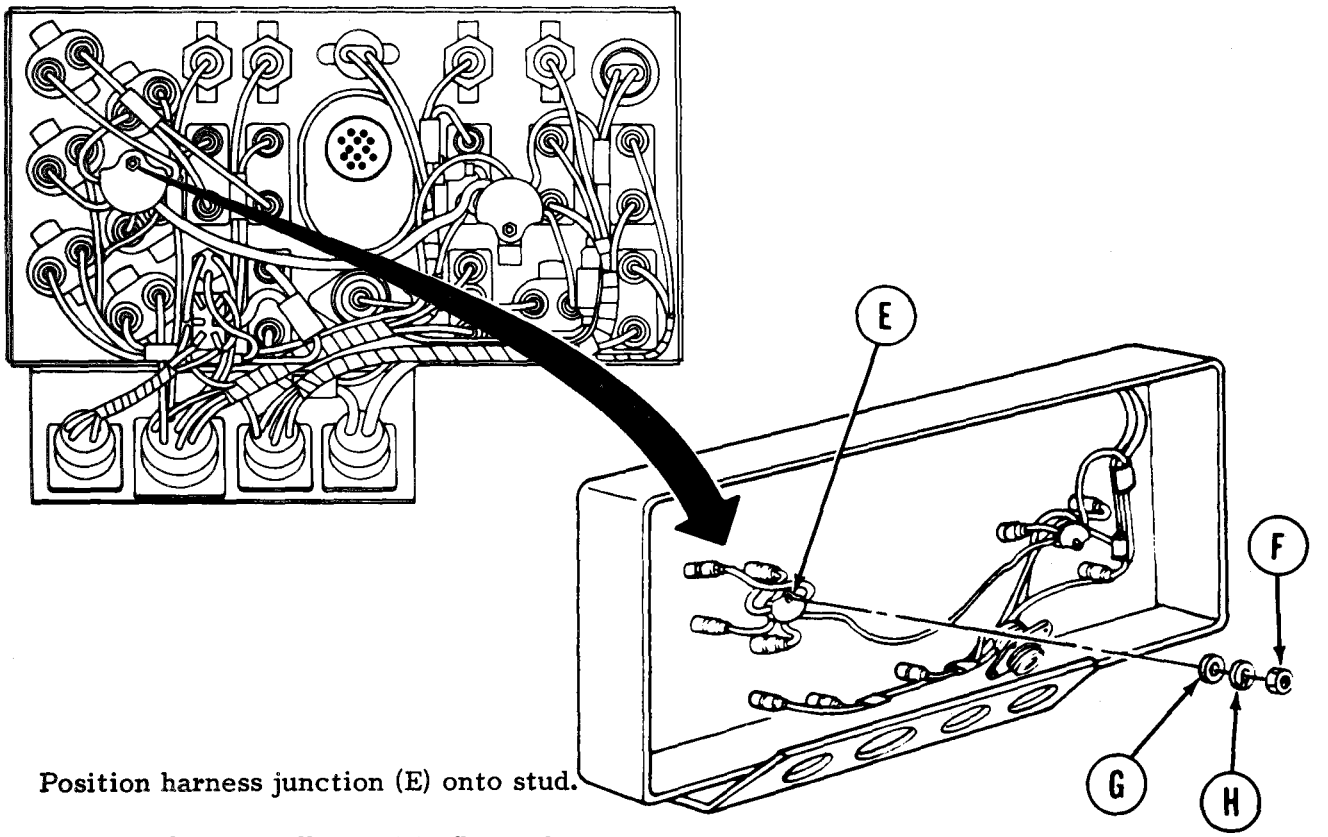
TA249013

MASTER CONTROL PANEL REPAIR (Sheet 36 of 73)
Circuit Breaker Replacement (Sheet 4 of 7)

INSTALLATION: CIRCUIT BREAKER (D):



1. Place circuit breaker (A) in position on panel.
2. Using cross-tip screwdriver and wrench, install two screws (B), new lockwashers (C), and nuts (D).
3. Apply silicone compound to two male electrical connectors for circuit breaker (A).
4. Using fingers, connect two electrical connectors in rear of circuit breaker (A) by pushing in.



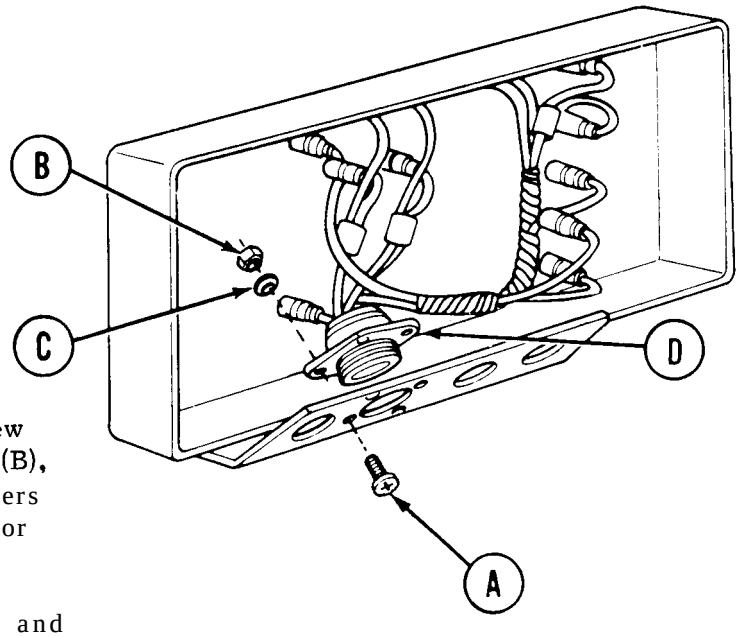
5. **Position harness junction (E) onto stud.**
6. Using socket, install nut (F), flatwasher (G), and lockwasher (H) securing harness junction (E) to panel.

Go on to Sheet 5

TA249014

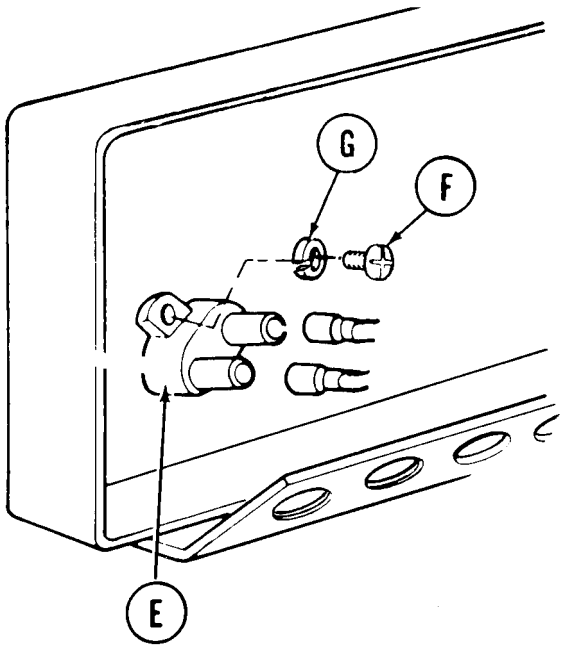
MASTER CONTROL PANEL REPAIR (Sheet 37 of 73)
Circuit Breaker Replacement (Sheet 5 of 7)

REMOVAL; CIRCUIT BREAKER (F):



1. Using flat-tip screw driver on screw (A) and 11/32 inch wrench on nut (B), remove four screws (A), lockwashers (C), and nuts (B) securing connector (D) to panel.

2. Remove connector (D) from panel and position aside.



3. Using fingers, remove two electrical connectors from rear of circuit breaker (E) by pulling out.

4. Using cross-tip screwdriver, remove two screws (F) and lockwashers (G) securing circuit breaker (E) to panel,

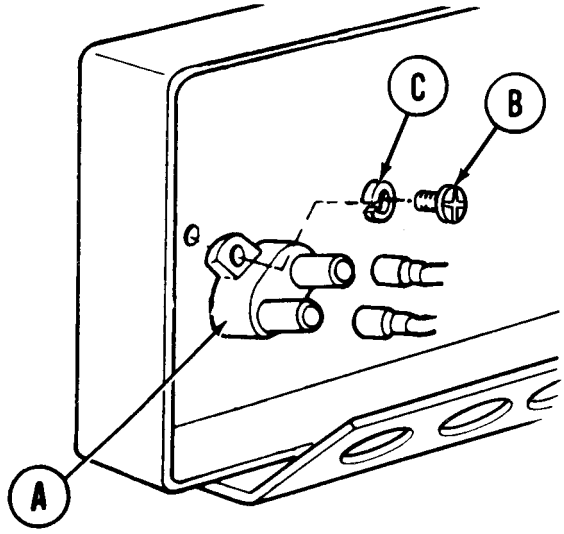
5. Remove circuit breaker (E).

Go on to Sheet 6

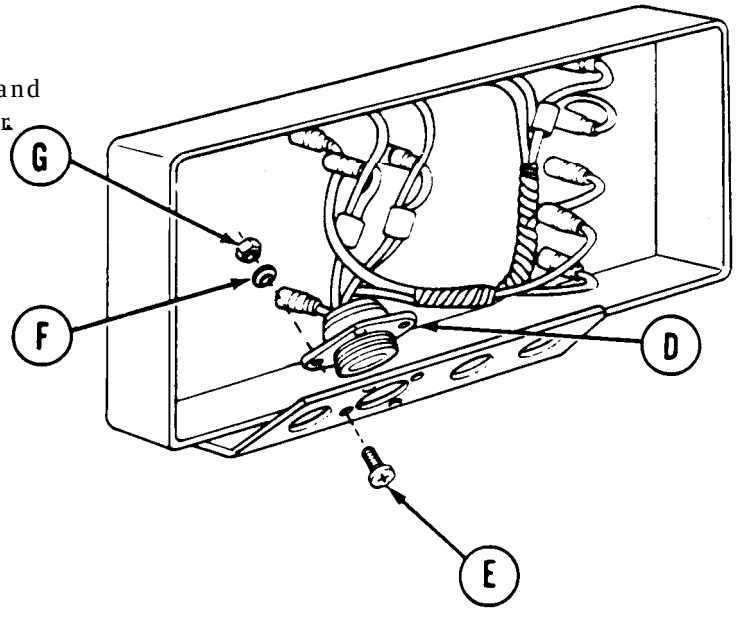
TA249015

MASTER CONTROL PANEL REPAIR (Sheet 38 of 73)
Circuit Breaker Replacement (Sheet 6 of 7)

INSTALLATION; CIRCUIT BREAKER (F):



1. Place circuit breaker (A) in position on panel.
2. Using cross-tip screwdriver, install two screws (B) and lock washers (C).
3. Apply silicone compound to two male electrical connectors on circuit breaker (A).
4. Using fingers, connect two electrical connectors in rear of circuit breaker (A) by pushing in.
5. Position connector (D) to panel.
6. Using flat-tip screwdriver on screws and wrench on nuts, install and secure four screws (E), lockwashers (F), and nuts (G).



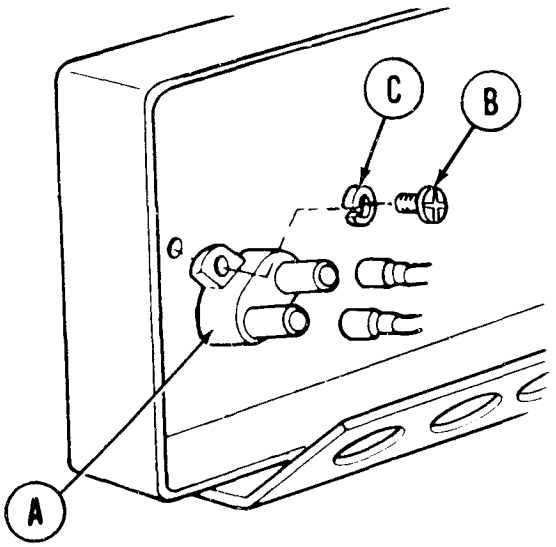
Go on to Sheet 7

TA249016

MASTER CONTROL PANEL REPAIR (Sheet 39 of 73)
Circuit Breaker Replacement (Sheet 7 of 7)

REMOVAL; CIRCUIT BREAKER (G):

1. Using fingers, disconnect two electrical connectors from rear of circuit breaker (A) by pulling out.
2. Using cross-tip screwdriver, remove two screws (B) and lockwashers (C) securing circuit breaker (A) to panel.
3. Remove circuit breaker (A).



INSTALLATION; CIRCUIT BREAKER (G):

1. Place circuit breaker (A) in position on panel.
2. Using cross-tip screwdriver, install two screws (B) and lockwashers (C) securing circuit breaker (A) to panel.
3. Apply silicone compound to two male electrical connectors for circuit breaker (A).
4. Using fingers, connect two electrical connectors in rear of circuit breaker (A).
5. Install panel in vehicle (page 10-36).

End of Task

TA249017

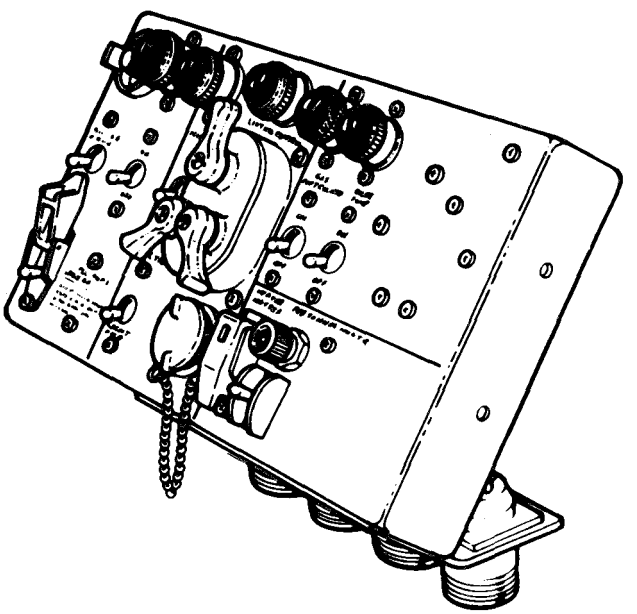
MASTER CONTROL PANEL REPAIR (Sheet 40 of 73)
Master Heater Switch, Hi-Lo Switch And Indicator Light Replacement (Sheet 1 of 8)

PROCEDURE INDEX

TOOLS: Ratchet with 1/2 in. drive
3/4 in. socket with 1/2 in. drive
Long round nose pliers
Flat-tip screwdriver
Cross-tip screwdriver
11/32 in. open end wrench

SUPPLIES: Silicone compound (Item 32, Appendix D)

PRELIMINARY PROCEDURE: Remove panel from vehicle (page 10-34).

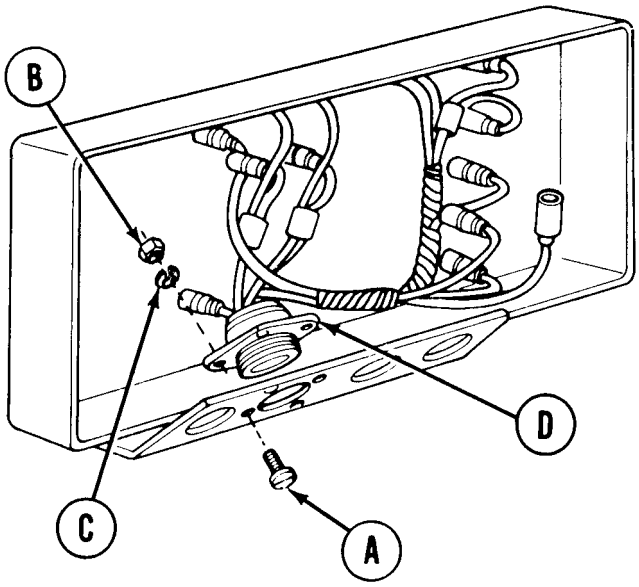


Go on to Sheet 2

TA249018

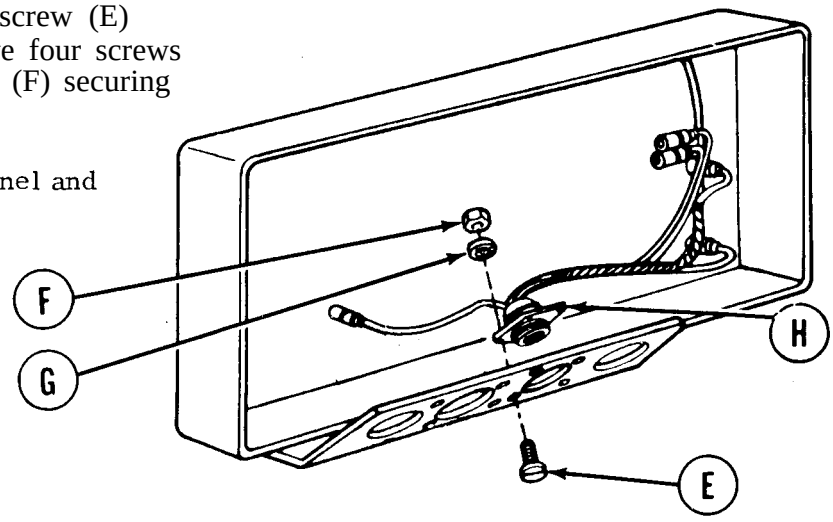
MASTER CONTROL PANEL REPAIR (Sheet 41 of 73)
Master Heater Switch, Hi-Lo Switch And Indicator Light Replacement (Sheet 2 of 8)

REMOVAL:



1. Using flat-tip screwdriver on screws (A) and wrench on nuts (B), remove four screws (A), lockwashers (C), and nuts (B) securing connector (D) to panel.
2. Remove connector (D) from panel and position aside.

3. Using flat-tip screwdriver on screw (E) and wrench on nut (F), remove four screws (E), lockwashers (G), and nuts (F) securing connector (H) to panel.
4. Remove connecto r (H) from panel and position aside.



Go on to Sheet 3

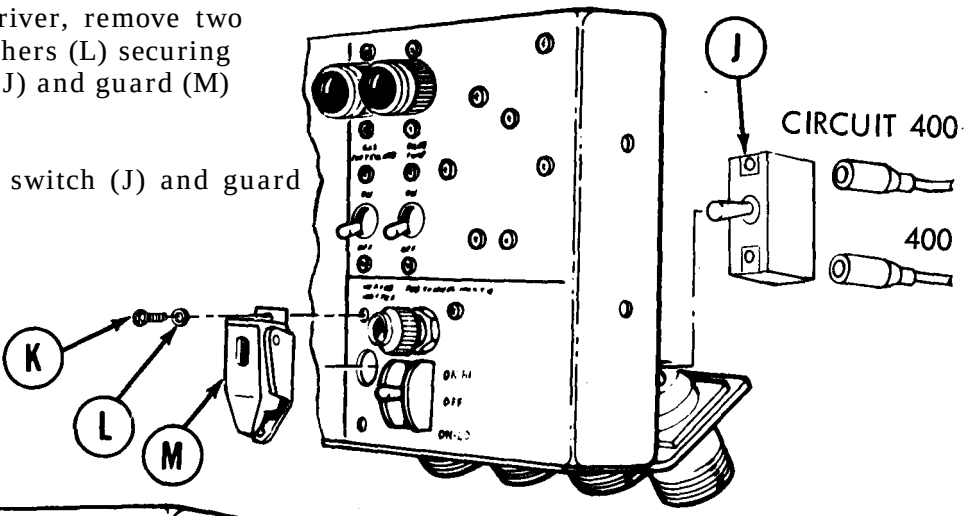
TA249019

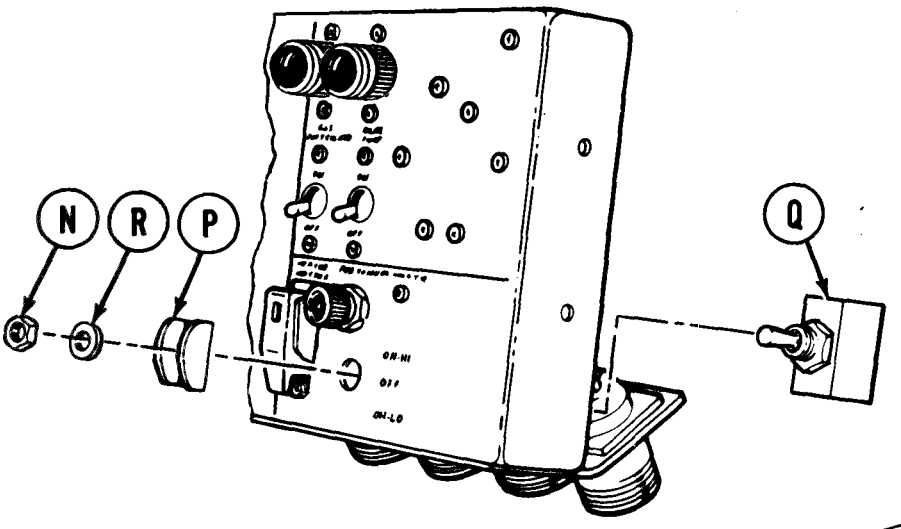
MASTER CONTROL PANEL REPAIR (Sheet 42 of 73)
Master Heater Switch, Hi-Lo Switch And Indicator Light Replacement (Sheet 3 of 8)

5. Remove two electrical connectors (circuit 400) from rear of switch (J) by pulling out.

6. Using cross-tip screwdriver, remove two screws (K) and lockwashers (L) securing heating master switch (J) and guard (M) to panel.

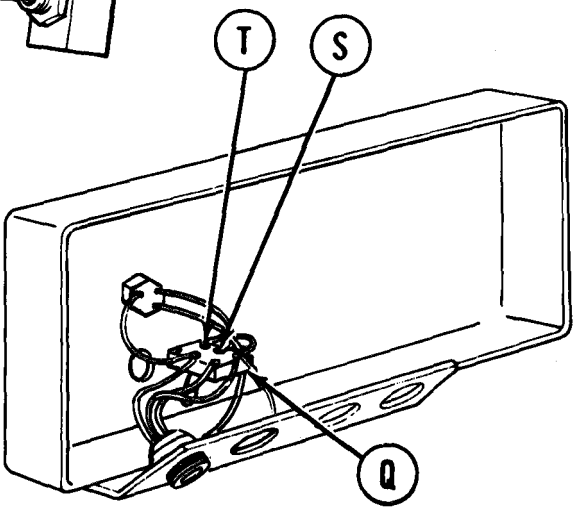
7. Remove heater master switch (J) and guard





8. Using pliers, remove nut (N) securing guard (P) and switch (Q) to panel.

9. Remove switch (Q), guard (P) and washer (R).



10. Using flat-tip screwdriver, remove five screws (S) and lockwashers (T) securing six electrical leads and jumper wire to switch (Q).

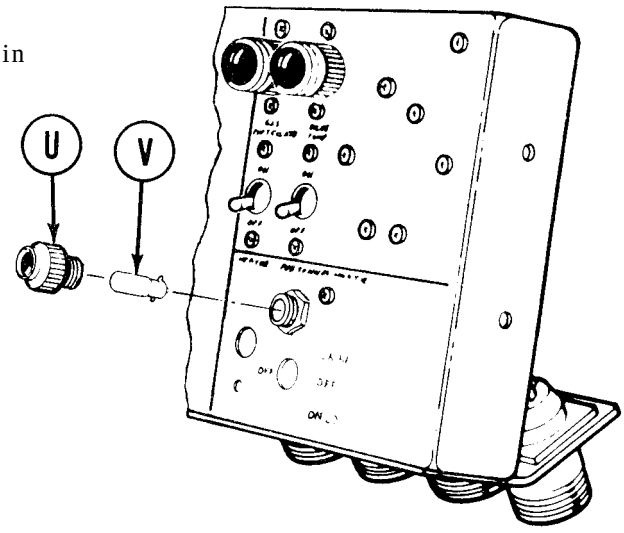
Go on to Sheet 4

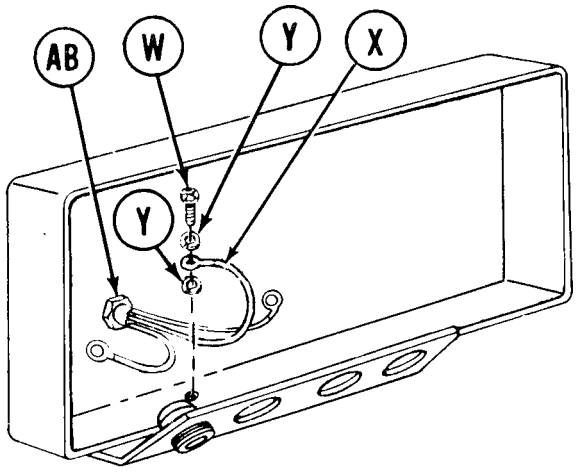
TA249020

MASTER CONTROL PANEL REPAIR (Sheet 43 of 73)
Master Heater Switch, Hi-Lo Switch And Indicator Light Replacement (Sheet 4 of 8)

11. Remove lens (U) by turning counterclockwise.

12. Using fingers, remove lamp (V) by pushing in and turning counterclockwise.



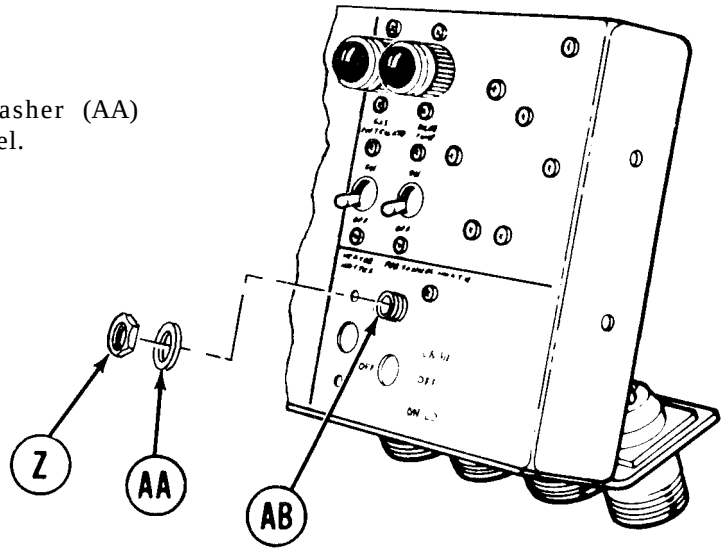


13. Using cross-tip screwdriver, remove screw (W) securing ground lead (X) to rear of panel.

14. Remove lockwashers (Y).

15. Using socket, remove nut (Z) and washer (AA) securing indicator light (AB) to panel.

16. Remove indicator light (AB).



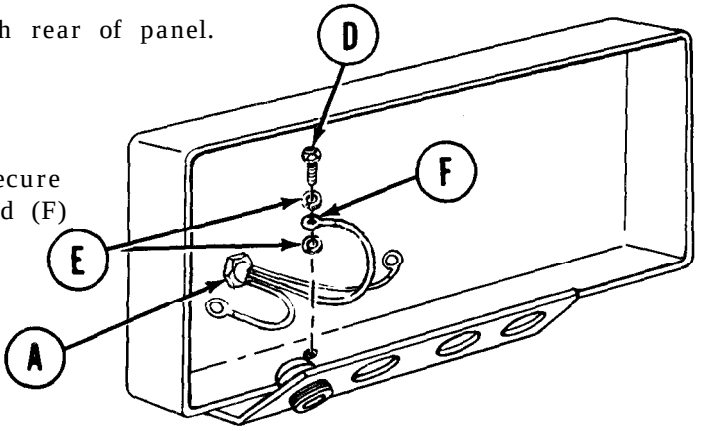
Go on to Sheet 5

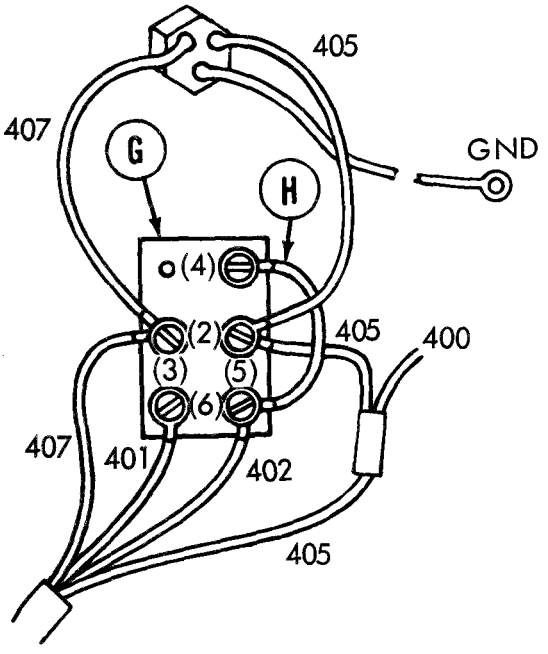
TA249021

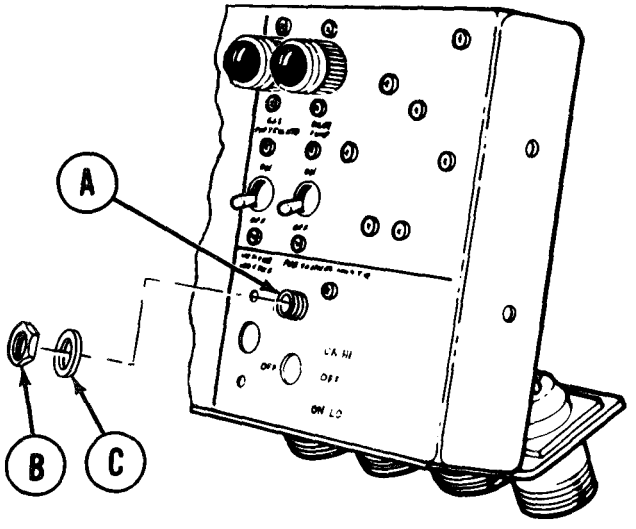
MASTER CONTROL PANEL REPAIR (Sheet 44 of 73)
Master Heater Switch, Hi-Lo Switch And Indicator Light Replacement (Sheet 5 of 8)

INSTALLATION:

1. Place indicator light (A) in position through rear of panel.
2. Using socket, install nut (B), washer (C) securing indicator light (A) to panel.
3. Using cross-tip screwdriver, install and secure screw (D), lockwashers (E), and ground lead (F) to panel.







4. Using flat-tip screwdriver, remove screws and washers from terminals 2 through 6 of replacement hi-lo switch (G). Retain screws and washers for installation.
5. Position electrical leads and jumper wire (H) to switch (G) as shown.

NOTE

Electrical leads (circuits 407 and 405) are part of indicator light (A).

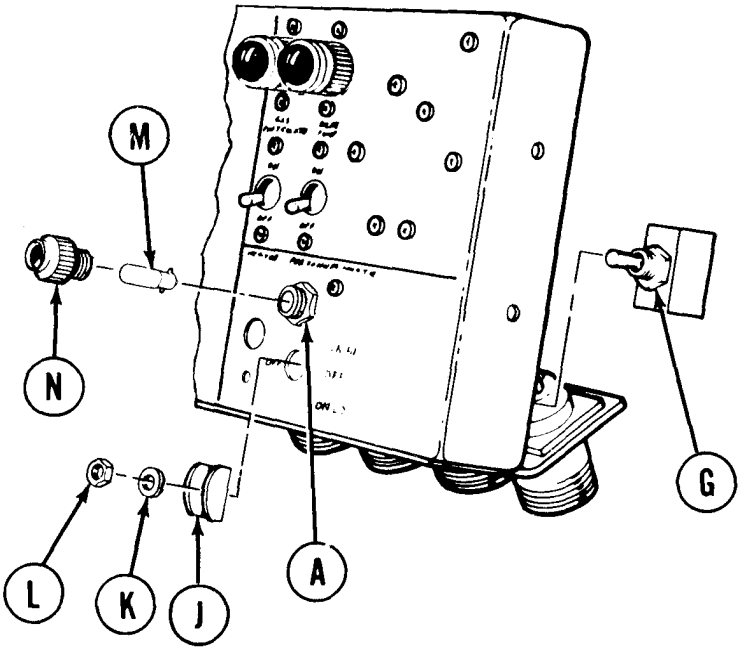
6. Using flat-tip screwdriver, secure leads to terminals with screws and washers removed in step 4.

Go on to Sheet 6

TA249022

MASTER CONTROL PANEL REPAIR (Sheet 45 of 73)
Master Heater Switch, Hi- Lo Switch And Indicator Light Replacement (Sheet 6 of 8)

7. Place switch (G) in position on panel.
8. Place guard (J) and washer (K) on panel over switch (G).
9. Using pliers install nut (L) securing guard (J) and switch (G) to panel.
10. Install lamp (M) in indicator light (A) by pushing in and turning clockwise.
11. Install lens (N) on indicator light (A) by turning clockwise.



TA249023

Go on **to** Sheet 7

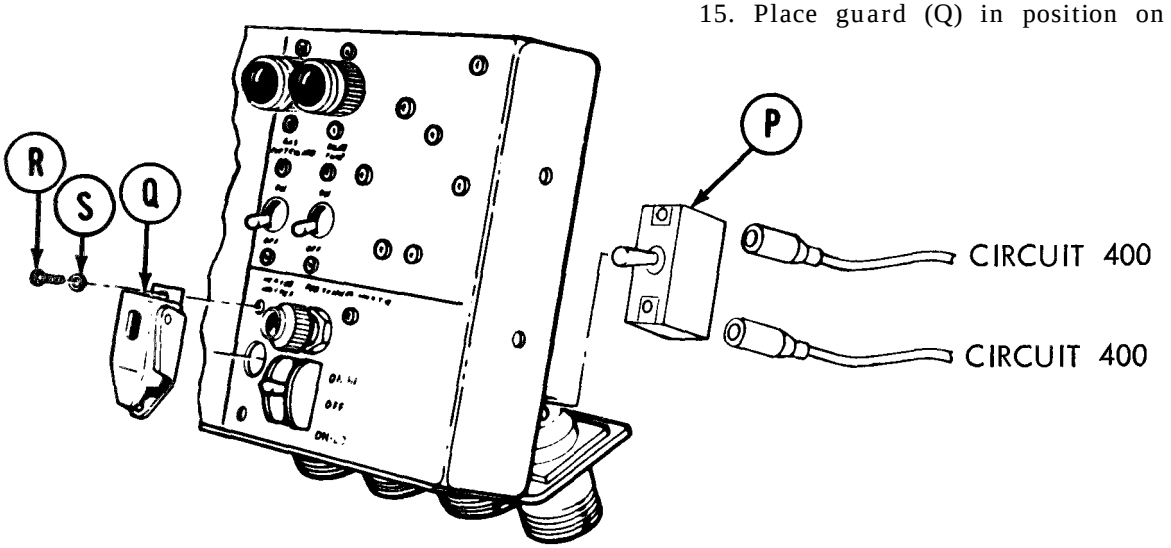
MASTER CONTROL PANEL REPAIR (Sheet 46 of 73)
Master Heater Switch, Hi-Lo Switch And Indicator Light Replacement (Sheet 7 of 8)

12. Apply silicone compound to two electrical connectors (circuit 400).

13. Connect two electrical connectors (circuit 400) to rear of heater switch (P) by pushing in.

14. Place switch (P) in position on panel.

15. Place guard (Q) in position on switch (P).



16. Using screwdriver, install two screws (R) and lockwashers (S) securing guard (Q) and heater master switch (P) to panel.

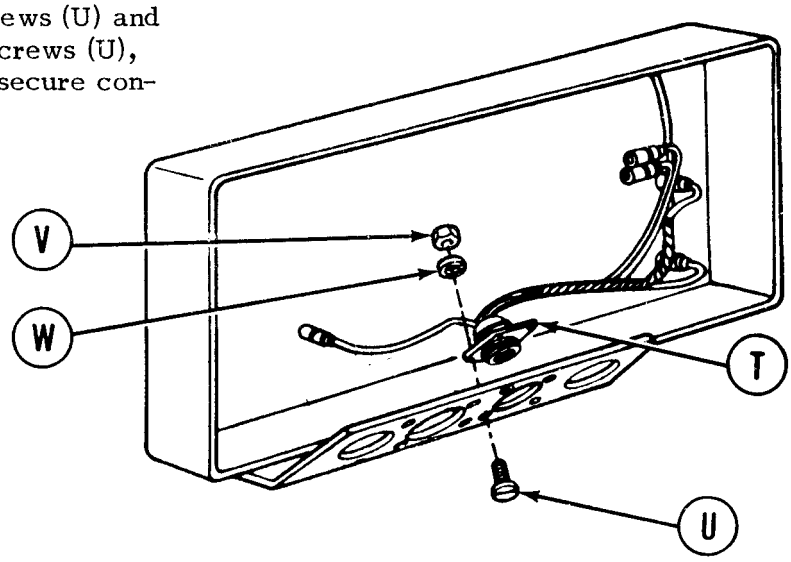
Go on to Sheet 8

TA249024

MASTER CONTROL PANEL REPAIR (Sheet 47 of 73)
Master Heater Switch, Hi-Lo Switch And Indicator Light Replacement (Sheet 8 of 8)

17. Position connector (T) onto panel.

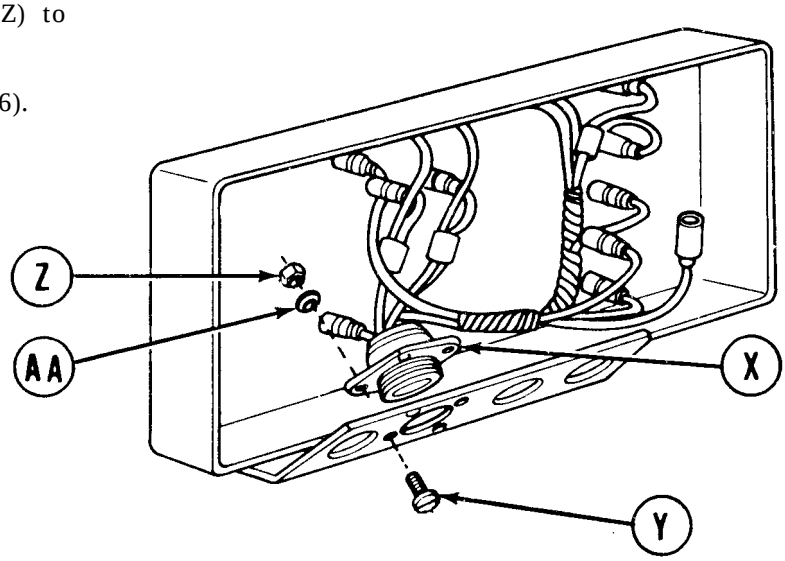
18. Using flat-tip screwdriver on screws (U) and wrench on nuts (V), install four screws (U), lockwashers (W), and nuts (V) to secure connector (T) to panel.



19. Position connector (X) onto panel.

20. Using flat-tip screwdriver on screws (Y), and wrench on nuts (Z), install four screws (Y), lockwashers (AA), and nuts (Z) to secure connector (X) to panel.

21. Install panel in vehicle (page 10-36).



End of Task

TA249025

MASTER CONTROL PANEL REPAIR (Sheet 48 of 73)
Personnel Heater Wiring Harness Replacement (Sheet 1 of 6)

PROCEDURE INDEX

TOOLS: Flat-tip screwdriver
11/32 in. wrench
Long nose pliers

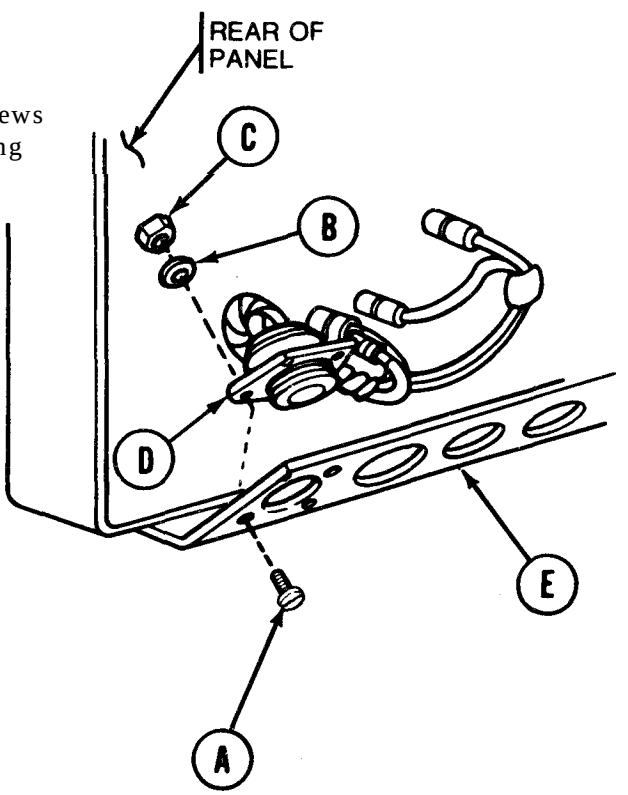
SUPPLIES: Silicone compound (Item 32, Appendix D)

PRELIMINARY PROCEDURE: Remove panel from vehicle (page 10-34).

REMOVAL:

1. Using flat-tip screwdriver on screws (A) and wrench on nuts (C), remove four screws (A), lockwashers (B), and nuts (C) securing connector (D) to panel (E).

2. Remove connector (D) from panel and position aside.



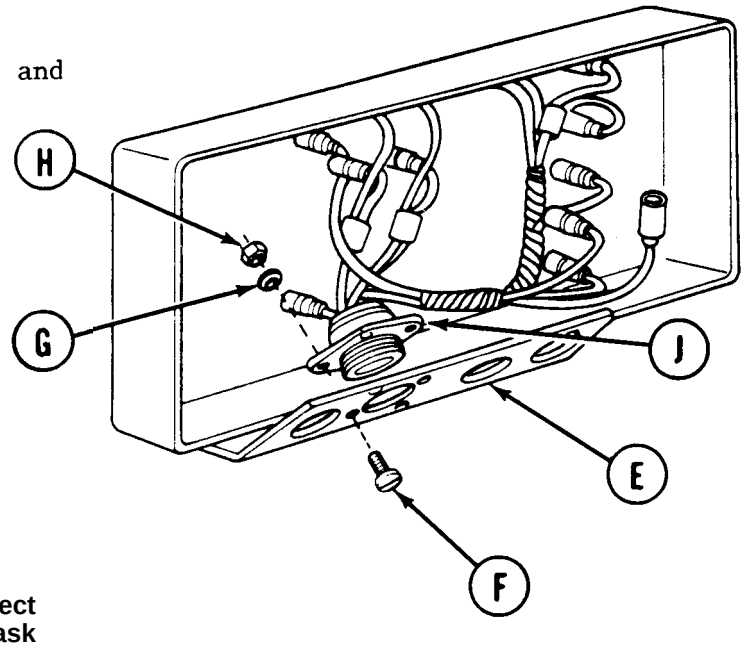
Go on to Sheet 2

TA249026

MASTER CONTROL PANEL REPAIR (Sheet 49 of 73)
Personnel Heater Wiring Harness Replacement (Sheet 2 of 6)

3. Using flat-tip screwdriver on screws (F) and wrench on nuts (H), remove four screws (F), lockwashers (G), and nuts (H) securing connector (J) to panel (E).

4. Remove conector (J) from panel and position aside.



NOTE

It may be necessary to disconnect other circuitry not related to the task at hand, for access. Make note of all circuits disconnected so that at installation all circuits are properly connected.

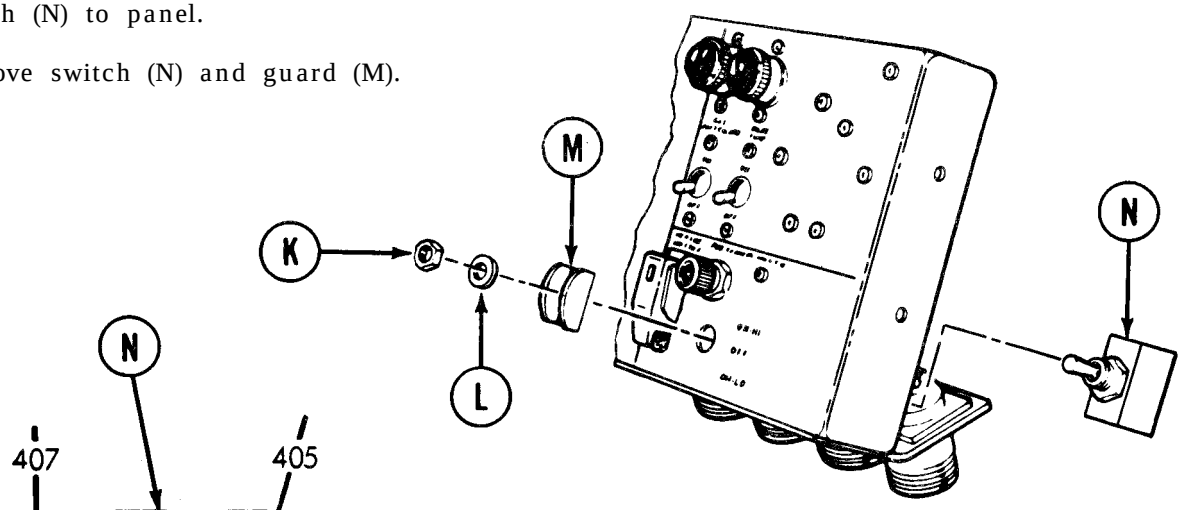
Go on to Sheet 3

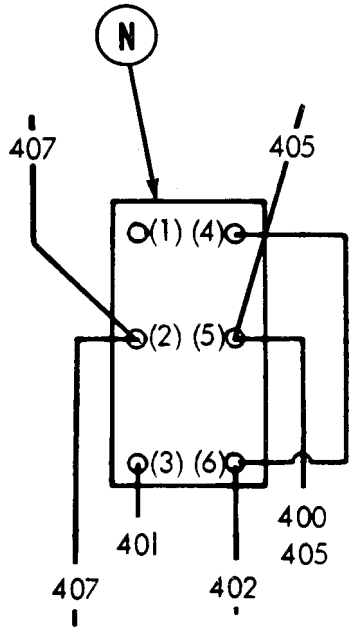
TA249027

MASTER CONTROL PANEL REPAIR (Sheet 50 of 73)
Personnel Heater Wiring Harness Replacement (Sheet 3 of 6)

5. Using pliers, remove nut (K) and washer (L) securing guard (M) and switch (N) to panel.

6. Remove switch (N) and guard (M).





7. Using flat-tip screwdriver, remove screws and washers securing circuits 400/405, 401, 402, and 407 to switch (N).

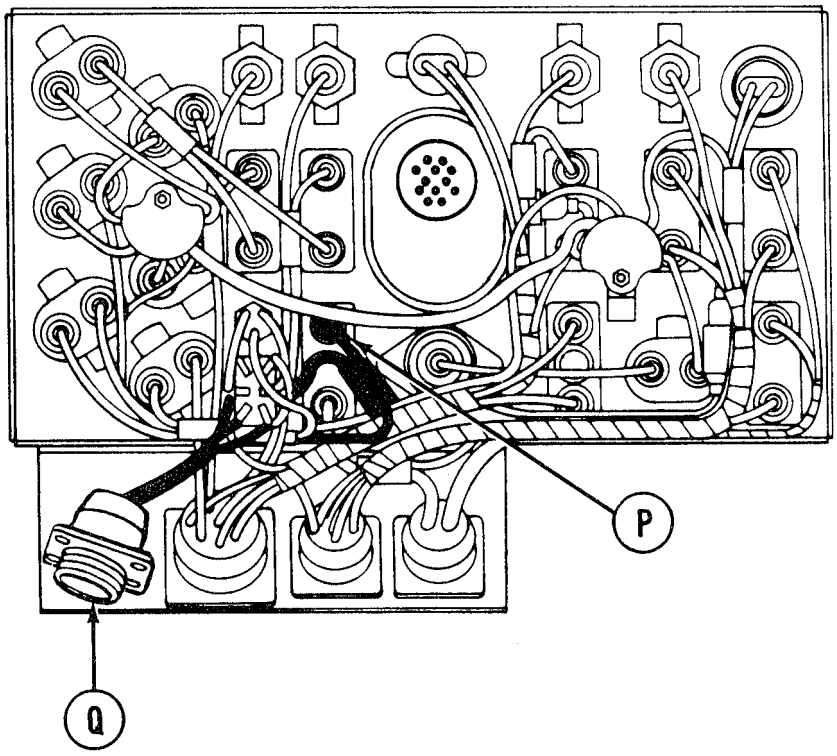
Go on to Sheet 4

TA249028

MASTER CONTROL PANEL REPAIR (Sheet 51 of 73)
Personnel Heater Wiring Harness Replacement (Sheet 4 of 6)

8. Disconnect connector (P) from heater master switch (circuit 400).

9. Remove harness assembly (Q).



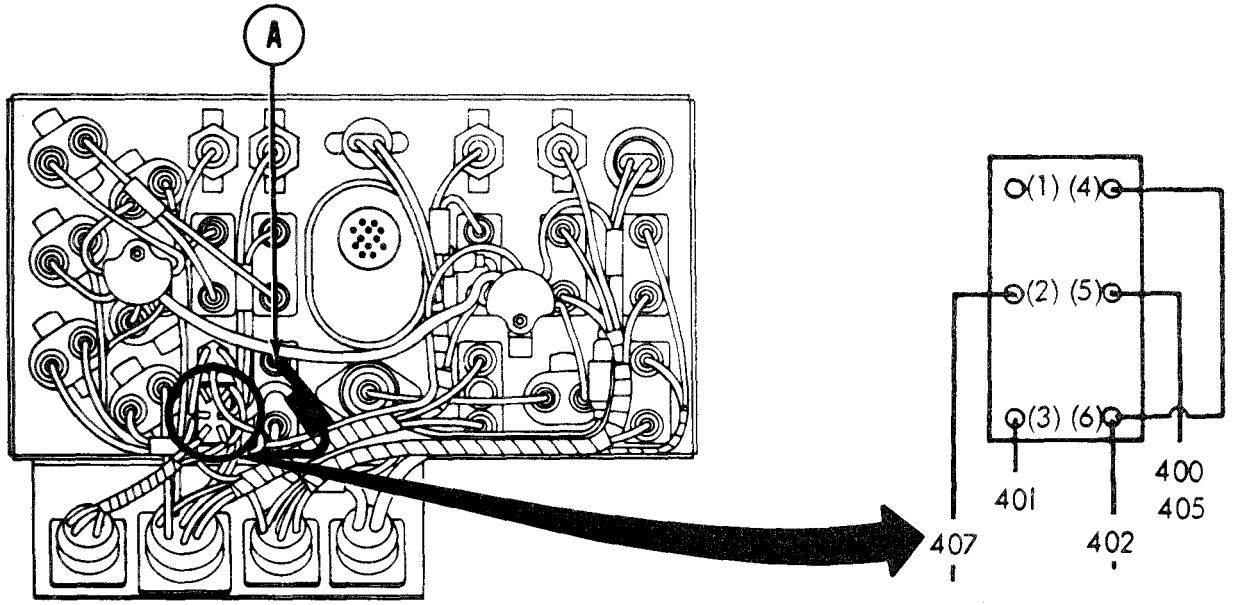
Go on to Sheet 5

TA249029

MASTER CONTROL PANEL REPAIR (Sheet 52 of 73)
Personnel Heater Wiring Harness Replacement (Sheet 5 of 6)

INSTALLATION:

1. Apply silicone compound to male electrical end of connector (A).



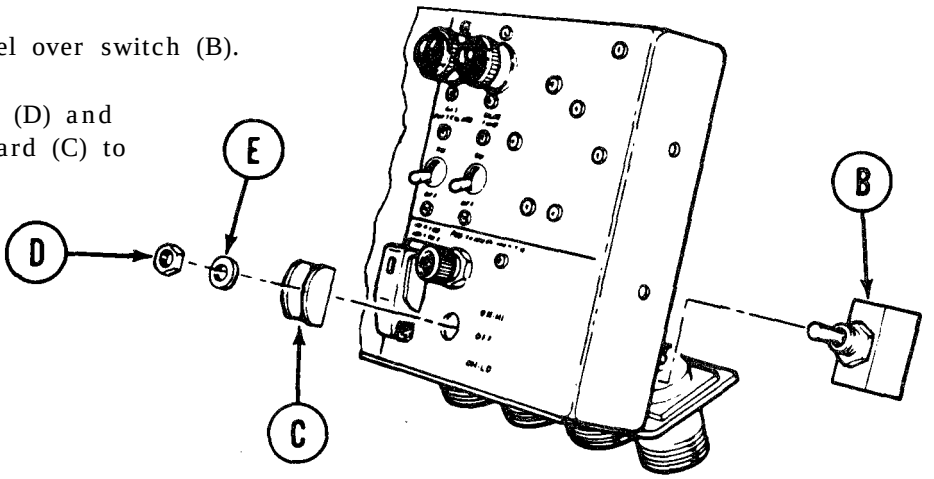
2. Connect connector (A) to heater master switch (B) (circuit 400).

3. Using flat-tip screwdriver, secure electrical leads (circuits 400/405, 401, 402 and 407) with screws and washers to their respective terminals of switch, as shown.

4. Place switch (B) in position on panel.

5. Place guard (C) on panel over switch (B).

6. Using pliers, install nut (D) and washer (E) securing guard (C) to panel.



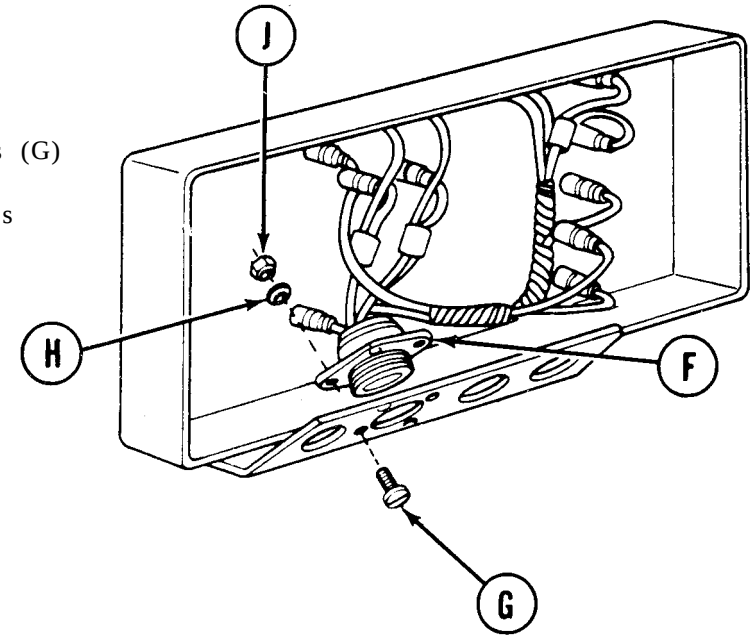
Go on to Sheet 6

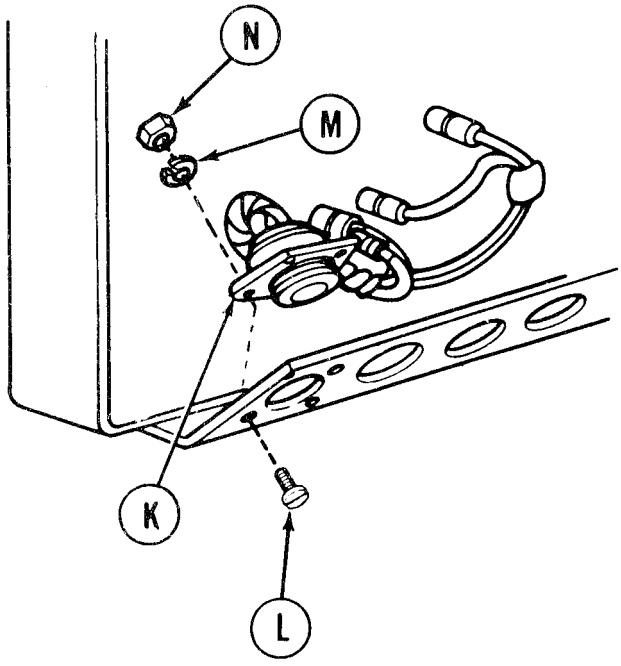
TA249030

MASTER CONTROL PANEL REPAIR (Sheet 53 of 73)
Personnel Heater Wiring Harness Replacement (Sheet 6 of 6).

7. Position connector (F) onto panel.

8. Using flat-tip screwdriver on screws (G) and wrench on nuts (J), install four screws (G), lockwashers (H), and nuts (J) to secure conneetor (F) to panel.





9. Position connector (K) onto panel.

10. Using flat-tip screwdriver on screws (L) and wrench on nuts (N), install four screws (L), lockwashers (M), and nuts (N) to secure connector (K) to panel.

11. Make sure that all circuits are connected.

12. Install panel in vehicle (page 10-36).

End of Task

TA249031

MASTER CONTROL PANEL REPAIR (Sheet 54 of 73)
Accessories Wiring Harness Replacement (Sheet 1 of 6)

PROCEDURE INDEX

TOOLS: Flat-tip screwdriver
11/32 inch wrench open end

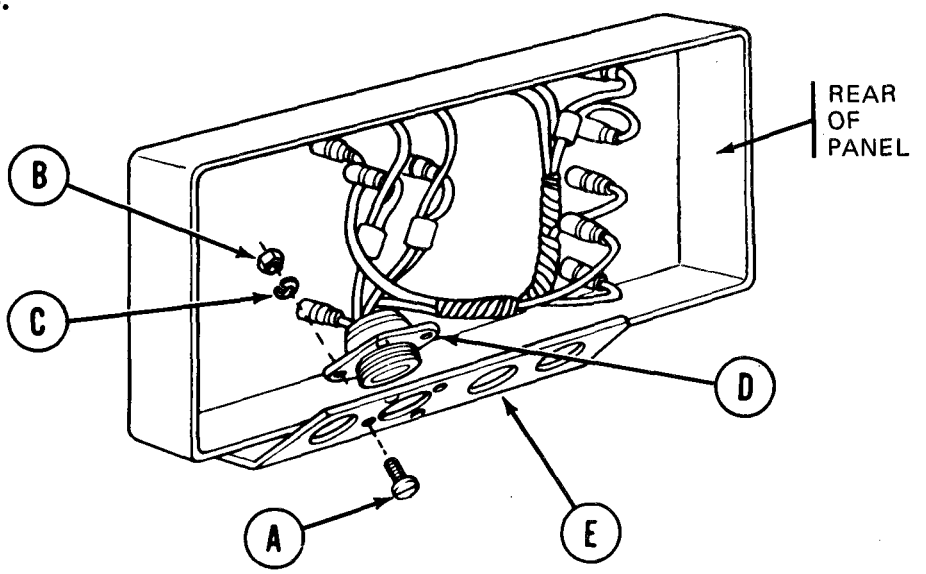
SUPPLIES: Silicone compound (Item 32, Appendix D)

PRELIMINARY PROCEDURE: Remove panel from vehicle (page 10-34).

REMOVAL:

1. Using screwdriver on screws (A) and wrench on nuts (B), remove four screws (A), lockwashers (C), and nuts (B) securing connector (D) to panel (E).

2. Remove connector (D) from panel and position aside.



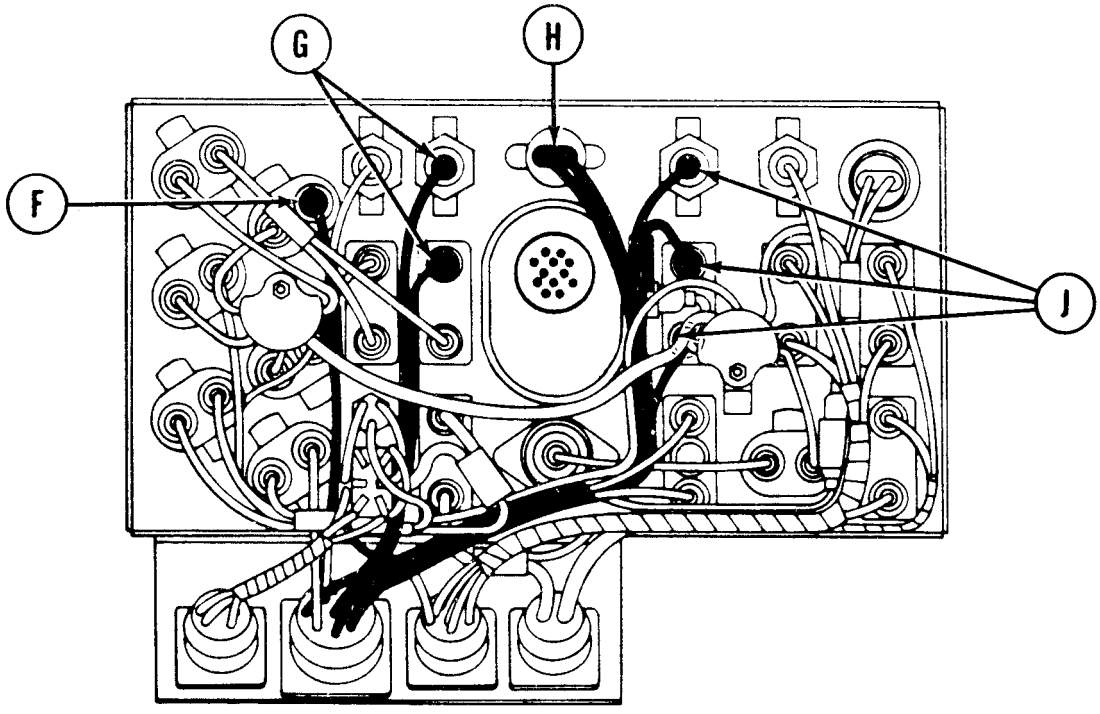
TA249032

Go on to Sheet 2

MASTER CONTROL PANEL REPAIR (Sheet 55 of 73)
Accessories Wiring Harness Replacement (Sheet 2 of 6)

3. Remove lead (circuit 38/516) from IR (night vision) power circuit breaker (F).

4. Remove two leads (circuit 415) from gas particulate switch and indicator light (G).



5. Remove two leads (circuit 519) from hi beam indicator light (H).

6. Remove three leads (circuit 516) from night vision (IR) power switch and indicator light (J).

Go on to Sheet 3

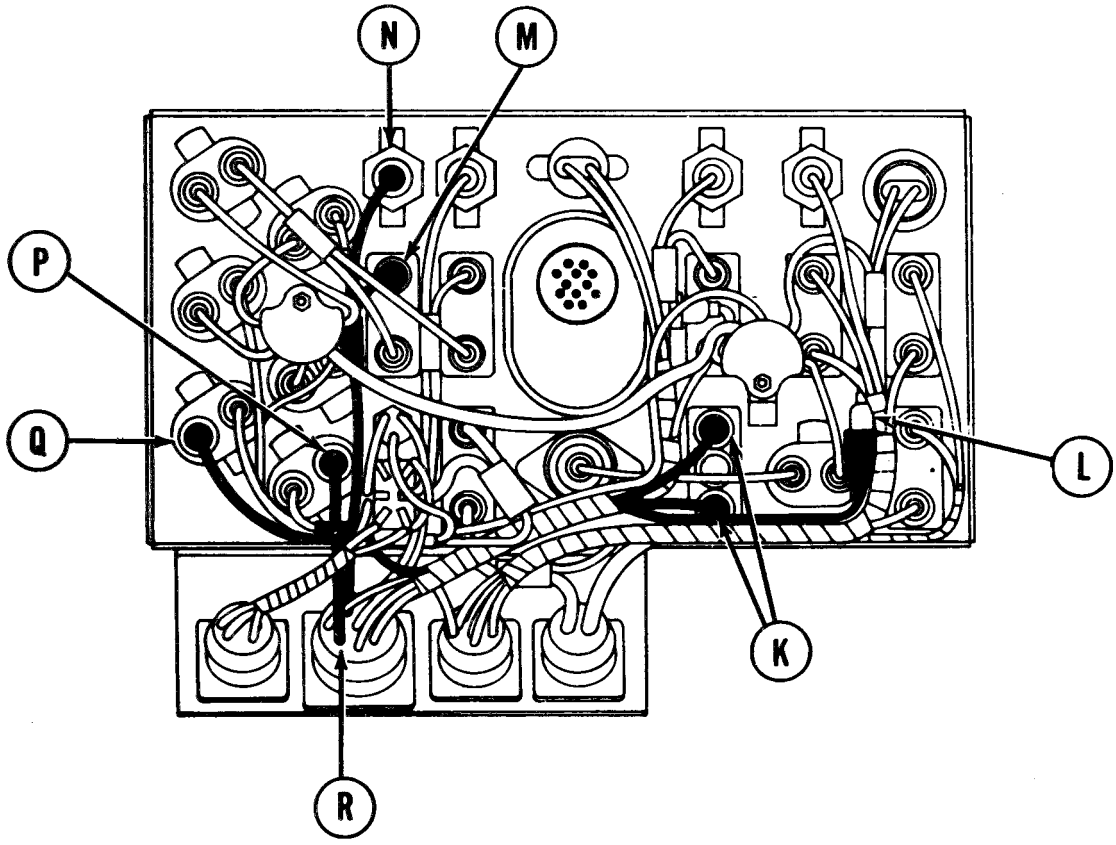
TA249033

MASTER CONTROL PANEL REPAIR (Sheet 56 of 73)
Accessories Wiring Harness Replacement (Sheet 3 of 6)

7. Remove two leads (circuits 19 and 514/515) from blackout selector switch (K).

8. Disconnect lead (circuit 14) from starter switch connector (L) by pulling apart.

9. Remove two connectors (circuit 451) from rear of bilge pump switch (M) and indicator light (N).



10. Remove connector (circuit 27) from gage circuit breaker (P).

11. Remove connector (circuit 486) from manifold preheat circuit breaker (Q).

12. Remove wiring harness (R) from panel.

Go on to Sheet 4

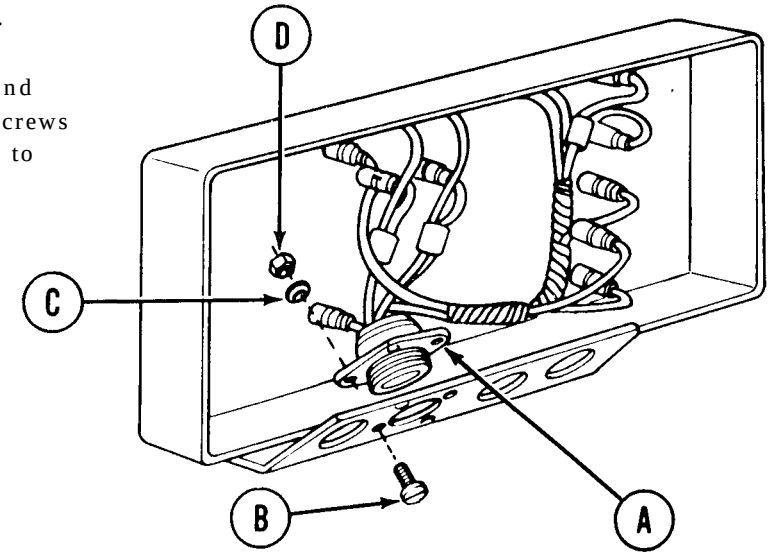
TA249034

MASTER CONTROL PANEL REPAIR (Sheet 57 of 73)
Accessories Wiring Harness Replacement (Sheet 4 of 6)

INSTALLATION:

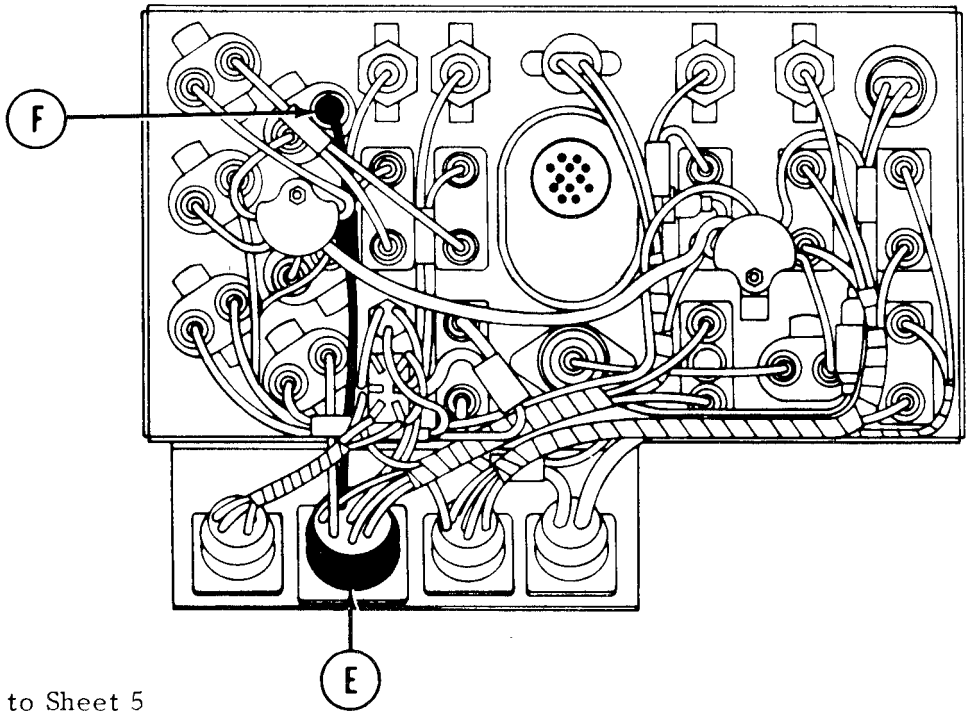
1. Position connector (A) onto panel.

2. Using screwdriver on screws (B) and wrench on nuts (D), install four screws (B), lockwashers (C), and nuts (D) to secure connector (A) to panel.



3. Apply silicone compound to all male electrical connectors of wiring harness (E).

4. Connect lead (circuit 38/516) to night vision (IR) power circuit breaker (F).



Go on to Sheet 5

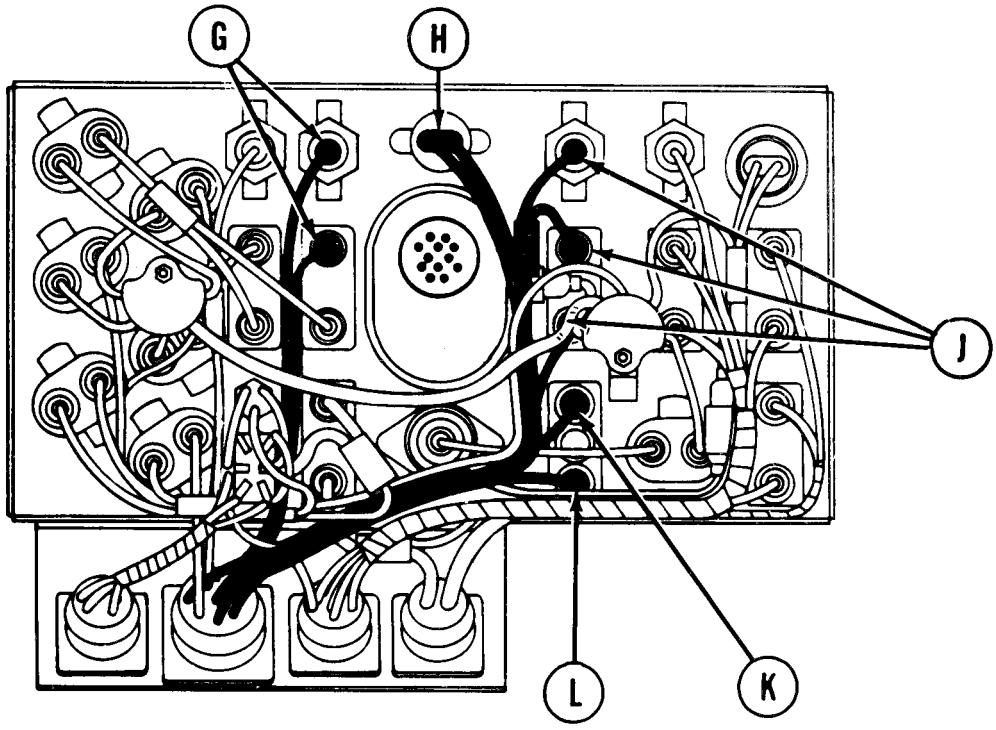
TA249035

MASTER CONTROL PANEL REPAIR (Sheet 58 of 73)
Accessories Wiring Harness Replacement (Sheet 5 of 6)

5. Connect two leads (circuit 415) to gas particulate switch and indicator light (G).

6. Connect lead (circuit 519) to hi beam indicator light (H).

7. Connect three leads (circuit 516) to night vision (IR) power switch and indicator light (J).



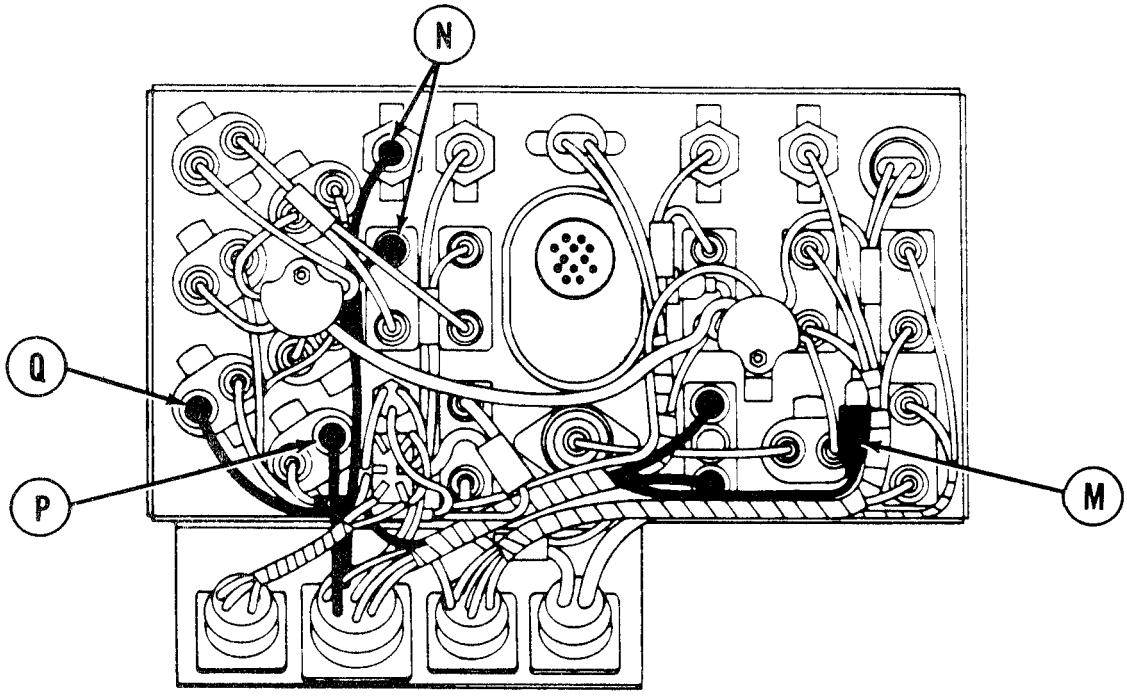
8. Connect lead (circuit 19) to blackout selector switch contact (K).

9. Connect lead (circuit 514/515) to blackout selector switch contact (L).

Go on to Sheet 6

TA249036

MASTER CONTROL PANEL REPAIR (Sheet 59 of 73)
Accessories Wiring Harness Replacement (Sheet 6 of 6)



10. Connect lead (circuit 14) to starter switch (M).
11. Connect two leads (circuit 451) to bilge pump switch and indicator light (N).
12. Connect lead (circuit 27) to gage circuit breaker (P).
13. Connect lead (circuit 486) to manifold preheat circuit breaker (Q).
14. Install panel in vehicle (page 10-36).

End of Task

TA249037

MASTER CONTROL PANEL REPAI R (Sheet 60 of 73)
Master Battery Wiring Harness Replacement (Sheet 1 of 4)

PROCEDURE INDEX

TOOLS: Flat-tip screwdriver
11/32 in. wrench open end

SUPPLIES: Silicone compound (Item 32, Appendix D)
Lockwashers

PRELIMINARY PROCEDURE: Remove panel from vehicle (page 10-34).

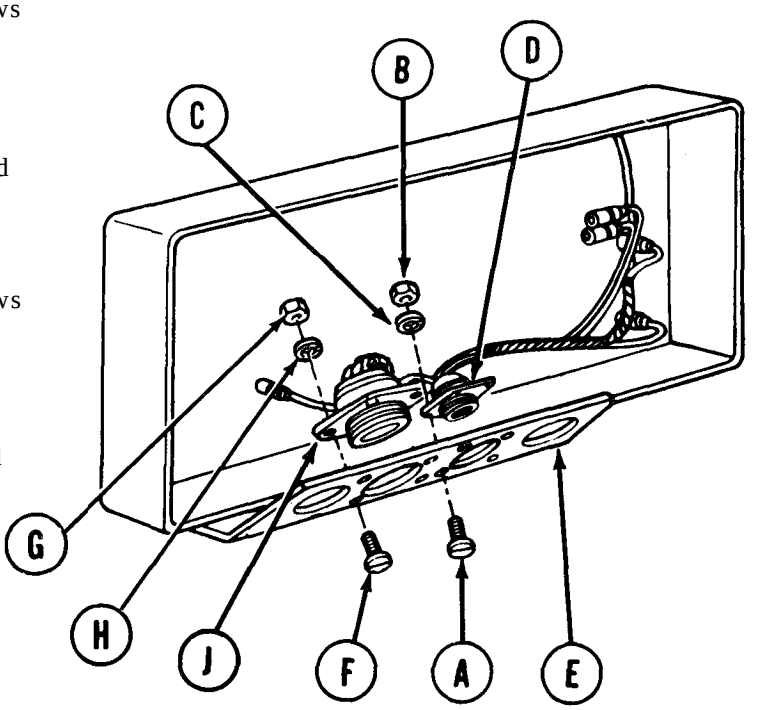
REMOVAL:

1. Using screwdriver on screw (A) and wrench on nut (B), remove four screws (A), lockwashers (C), and nuts (B) securing connector (D) to panel (E).

2. Remove connector (D) from panel and position aside.

3. Using screwdriver on screw (F) and wrench on nut (G), remove four screws (F), lockwashers (H), and nuts (G) securing connector (J) to panel (E).

4. Remove connector (J) from panel and position aside.

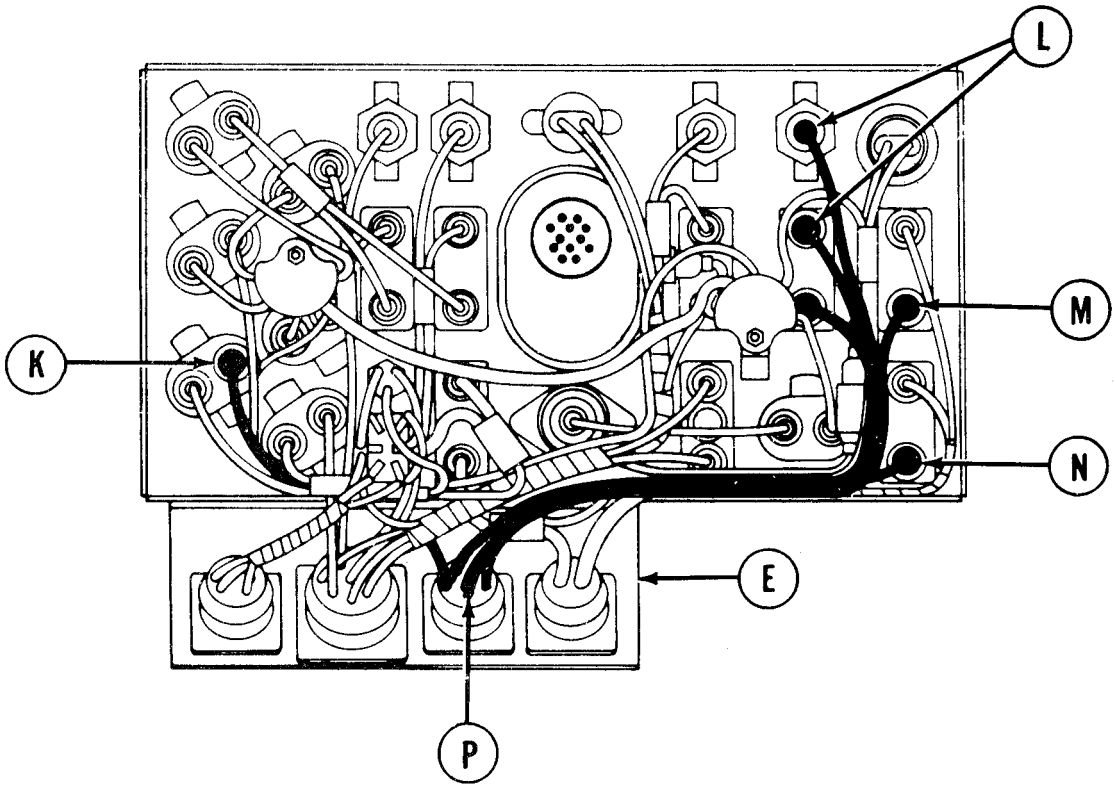


Go on to Sheet 2

TA249038

MASTER CONTROL PANEL REPAIR (Sheet 61 of 73)
Master Battery Wiring Harness Replacement (Sheet 2 of 4)

5. Remove lead (circuit 486) from manifold preheat circuit breaker (K).



6. Remove two leads (circuit 59A) from master battery switch and indicator light (L).

7. Remove lead (circuit 54A) from fuel shutoff switch (M).

8. Remove lead (circuit 76) from fuel pumps switch (N).

9. Remove wiring harness (P) from panel (E).

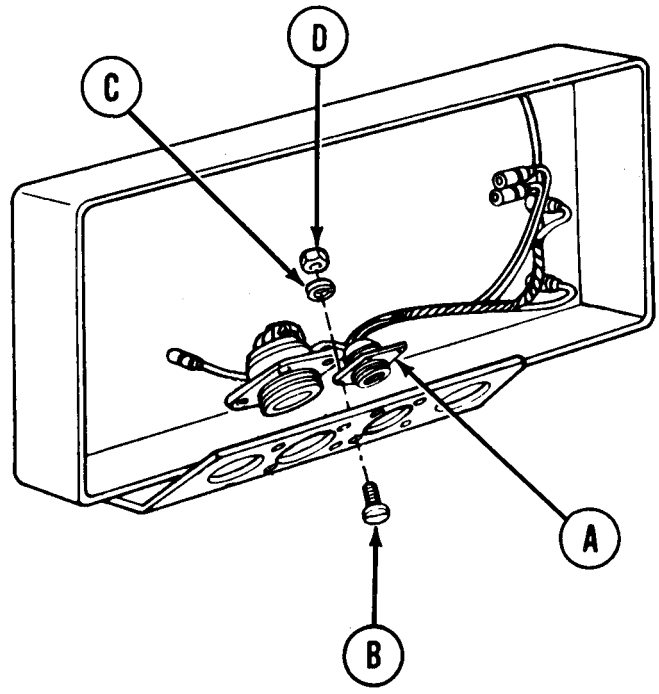
Go on to Sheet 3

TA249039

MASTER CONTROL PANEL REPAIR (Sheet 62 of 73)
Master Battery Wiring Harness Replacement (Sheet 3 of 4)

INSTALLATION:

1. Position connector (A) onto panel.
2. Using screwdriver on screw (B) and wrench on nut (D), install four screws (B), lockwashers (C), and nuts (D) to secure connector (A) to panel.

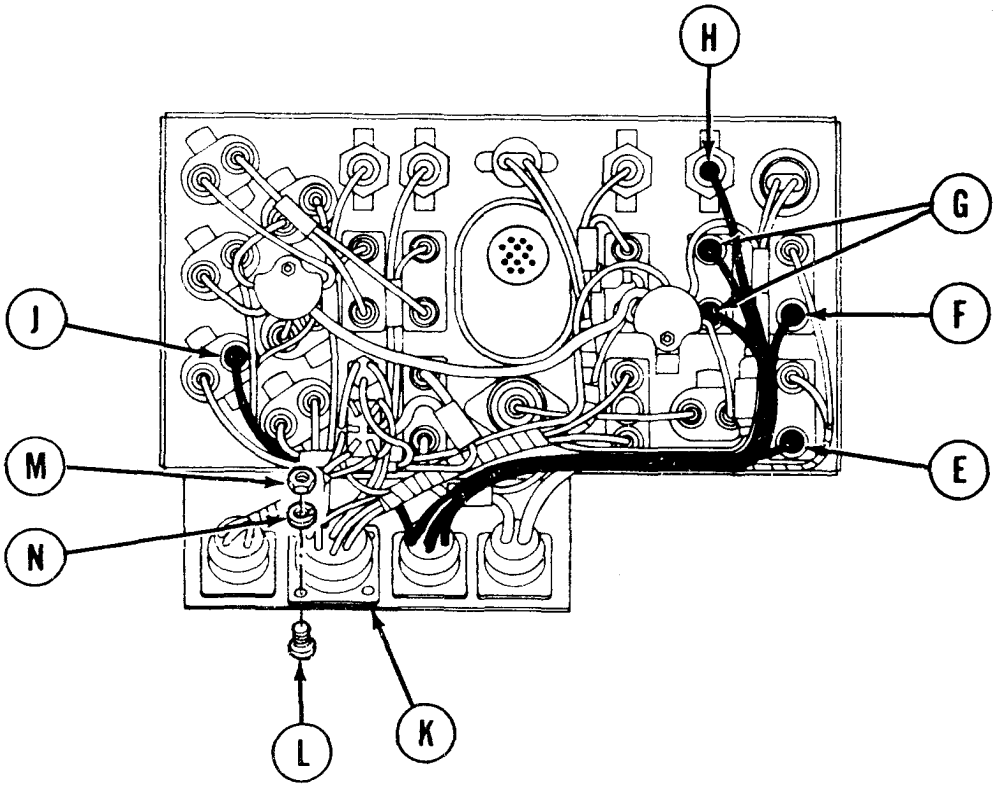


Go on to Sheet 4

TA249040

MASTER CONTROL PANEL REPAIR (Sheet 63 of 73)
Master Battery Wiring Harness Replacement (Sheet 4 of 4)

3. Apply silicone compound to all male connectors of the master battery wiring harness.
4. Connect electrical connector (circuit 76) (E).
5. Connect lead (circuit 54A) to fuel shutoff switch (F).



6. Connect two leads (circuit 459A), one to master battery switch (G) and one to master battery indicator light (H).
7. Connect lead (circuit 486) to manifold pre-heat circuit breaker (J).
8. Position connector (K) onto panel.
9. Using screwdriver on screw (L) and wrench on nut (M), install four screws (L), new lockwashers (N), and nuts (M) to secure connector (K) to panel.
10. Install panel in vehicle (page 10-36).

End of Task

TA249041

MASTER CONTROL PANEL REPAIR (Sheet 64 of 73)
Master Control Panel Wiring Harness Replacement (Sheet 1 of 7)

PROCEDURE INDEX

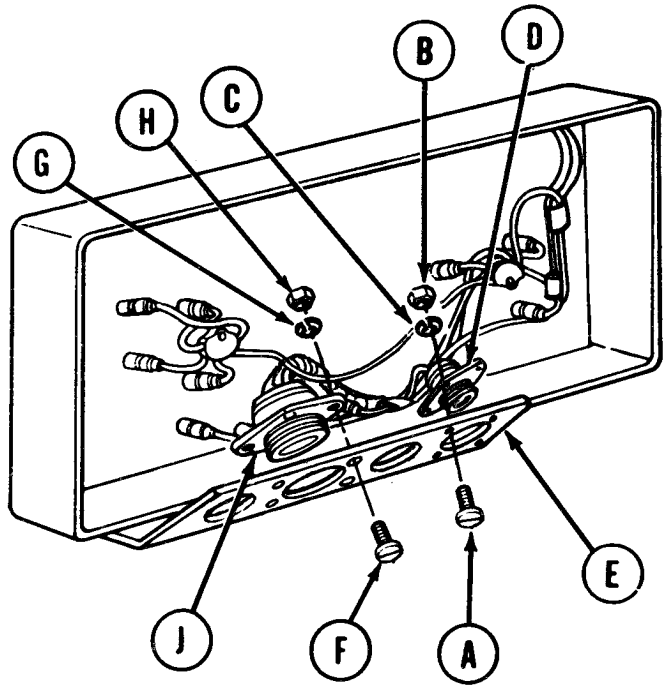
TOOL: 3/8 in. combination box and open end wrench
Offset cross-tip screwdriver
Flat-tip screwdriver
3/8 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
11/32 in. open end wrench

SUPPLIES: Silicone compound (Item 32, Appendix D)

PRELIMINARY PROCEDURE: Remove panel from vehicle (page 10-34).

REMOVAL:

1. Using flat-tip screwdriver on screws (A) and wrench on nuts (B), remove four screws (A), lockwashers (C), and nuts (B) securing connector (D) to panel (E).
2. Remove connector (D) from panel (E) and position aside.
3. Using flat-tip screwdriver on screws (F) and wrench on nuts (H), remove four screws (F), lockwashers (G), and nuts (H) securing connector (J) to panel (E).
4. Remove connector (J) from panel(E) and position aside.

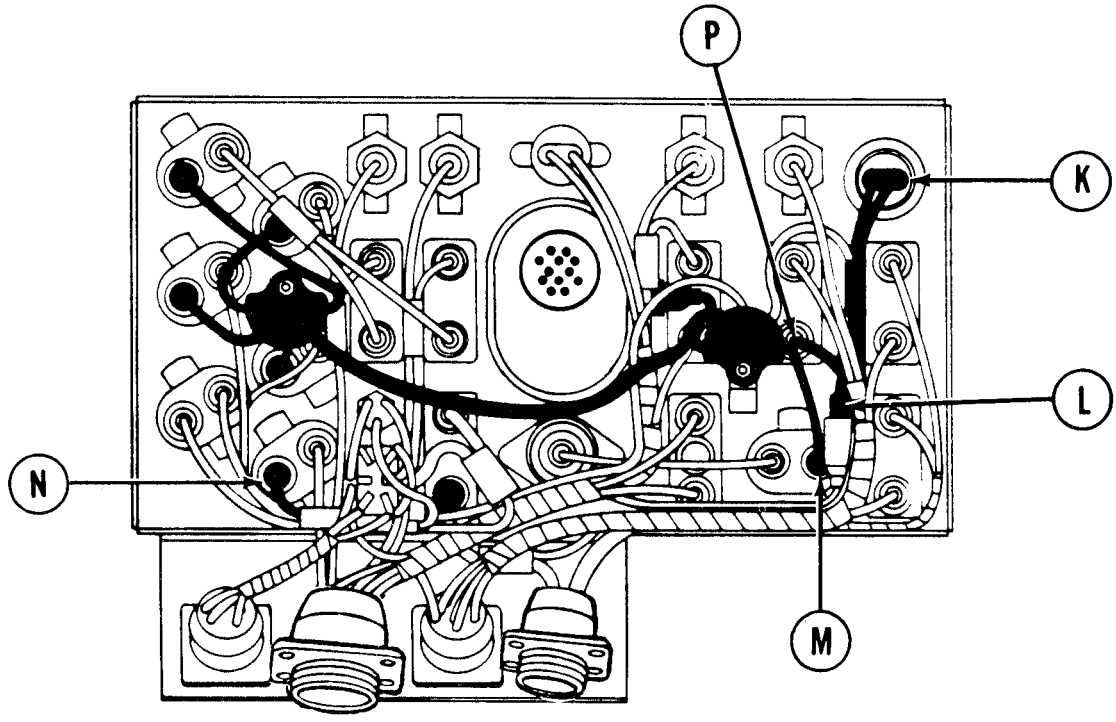


Go on to Sheet 2

TA249042

MASTER CONTROL PANEL REPAIR (Sheet 65 of 73)
Master Control Panel Wiring Harness Replacement (Sheet 2 of 7)

5. Disconnect electrical connector (circuit 14) from starter switch (K).
6. Disconnect electrical connector (circuit 14) (L).
7. Remove lead (circuit 37) from utility outlet circuit breaker (M).



8. Remove lead (circuit 27) from gage circuit breaker (N).
9. Disconnect electrical connector (circuit 15) and (circuit 459) from master battery switch (P).

Go on to Sheet 3

TA249043

MASTER CONTROL PANEL REPAIR (Sheet 66 of 73)
Master Control Panel Wiring Harness Replacement (Sheet 3 of 7)

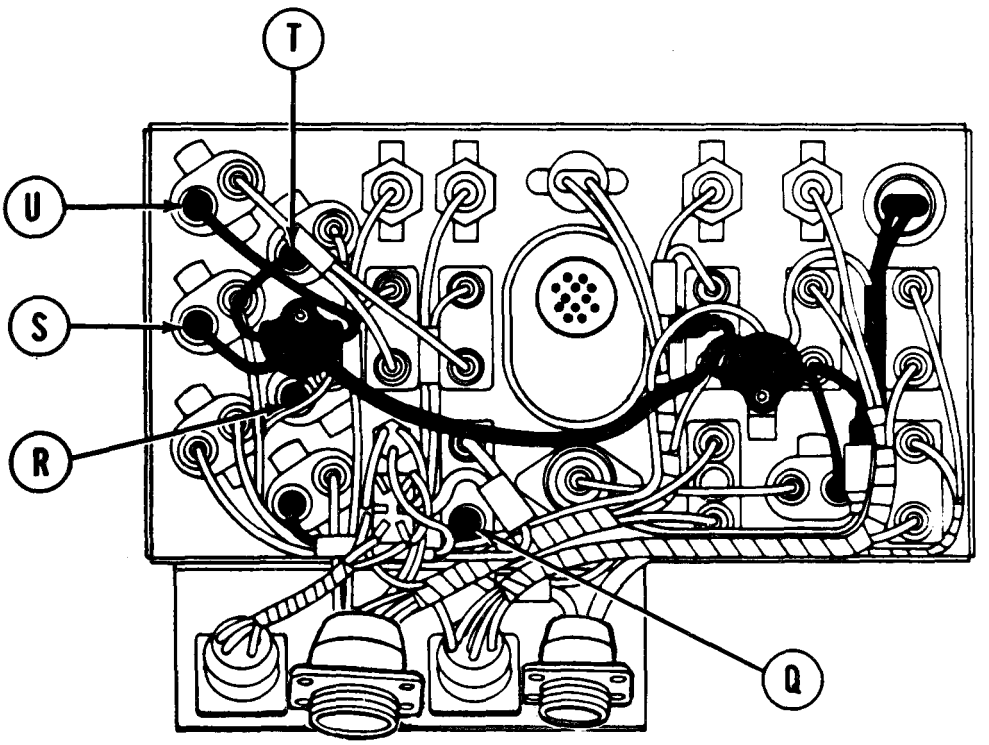
10. Disconnect electrical connector (circuit 400) from master heater switch (Q) by pulling apart.

11. Remove lead (circuit 76A) from fuel pump circuit breaker (R).

12. Remove lead (circuit 54) from fuel shutoff circuit breaker (S).

13. Remove lead (circuit 38/516) from IR (night vision) power circuit breaker (T).

14. Remove lead (circuit 920) from bilge pump and gas particulate circuit breaker (U).



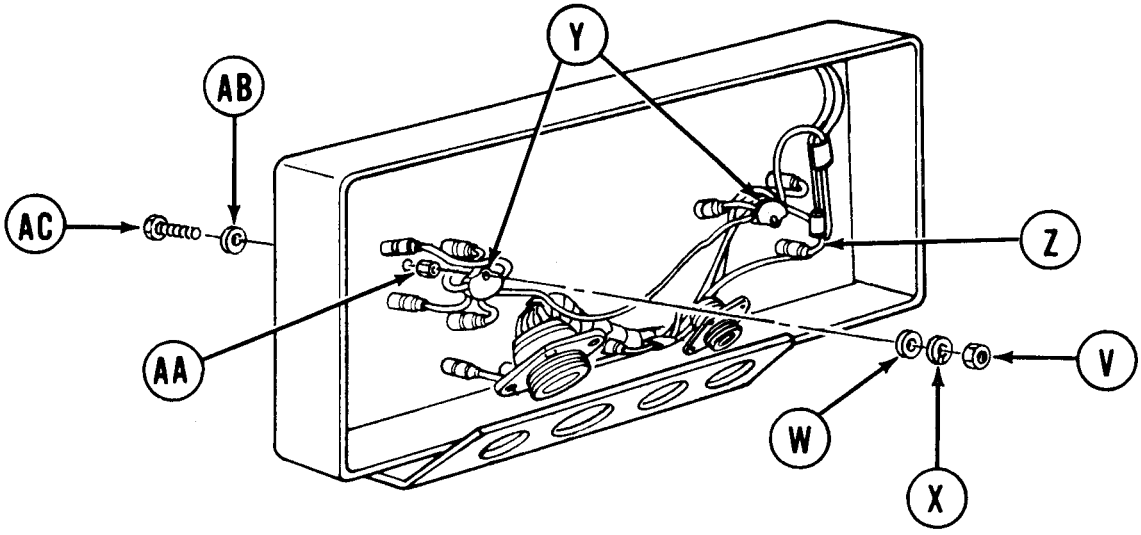
TA249044

Go on to Sheet 4

MASTER CONTROL PANEL REPAIR (Sheet 67 of 73)
Master Control Panel Wiring Harness Replacement (Sheet 4 of 7)

15. Using socket, remove two nuts (V), flatwashers (W), and lockwashers (X) securing two harness junctions (Y) to panel.

16. Remove wiring harness (Z).



17. Inspect studs (AA) or stripped or damaged threads. If any defects are found, replace.

18. If necessary to replace stud (AA), use offset cross-tip screwdriver on screw (AC) and 3/8 inch wrench on stud (AA) and replace stud (AA), washer (AB), and/or screw (AC).

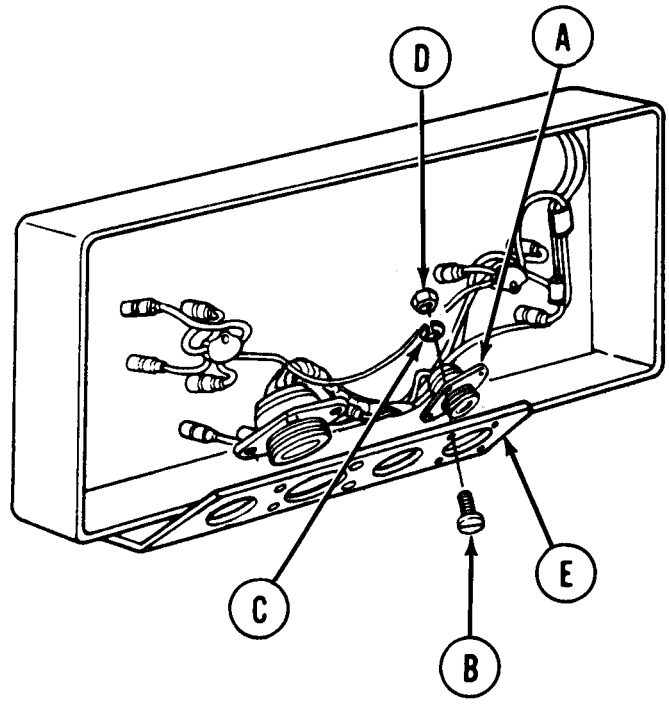
Go on to Sheet 5

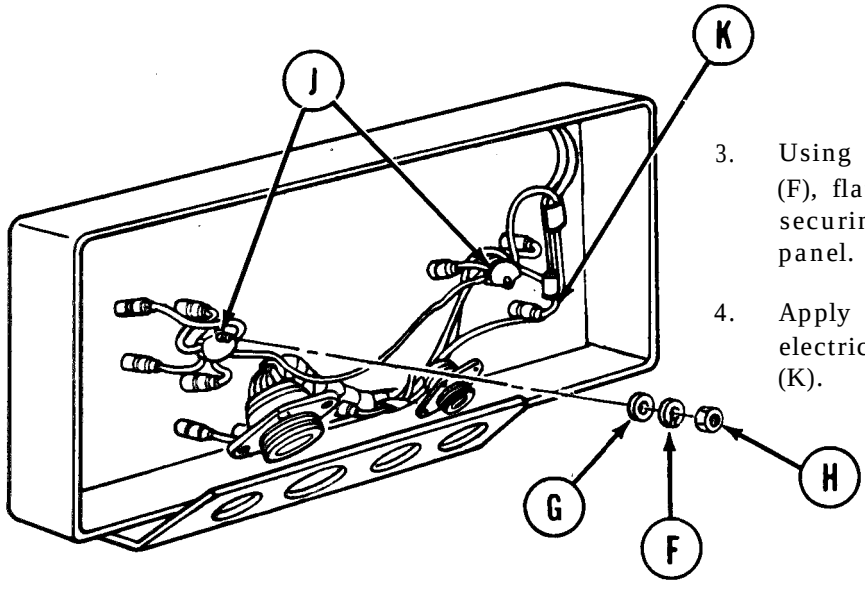
TA249045

MASTER CONTROL PANEL REPAIR (Sheet 68 of 73)
Master Control Panel Wiring Harness Replacement (Sheet 5 of 7)

INSTALLATION:

1. Position connector (A) onto panel.
2. Using flat-tip screwdriver on screws (B) and wrench on nuts (D), install four screws (B), lockwashers (C), and nuts (D) to secure connector (A) to panel (E).





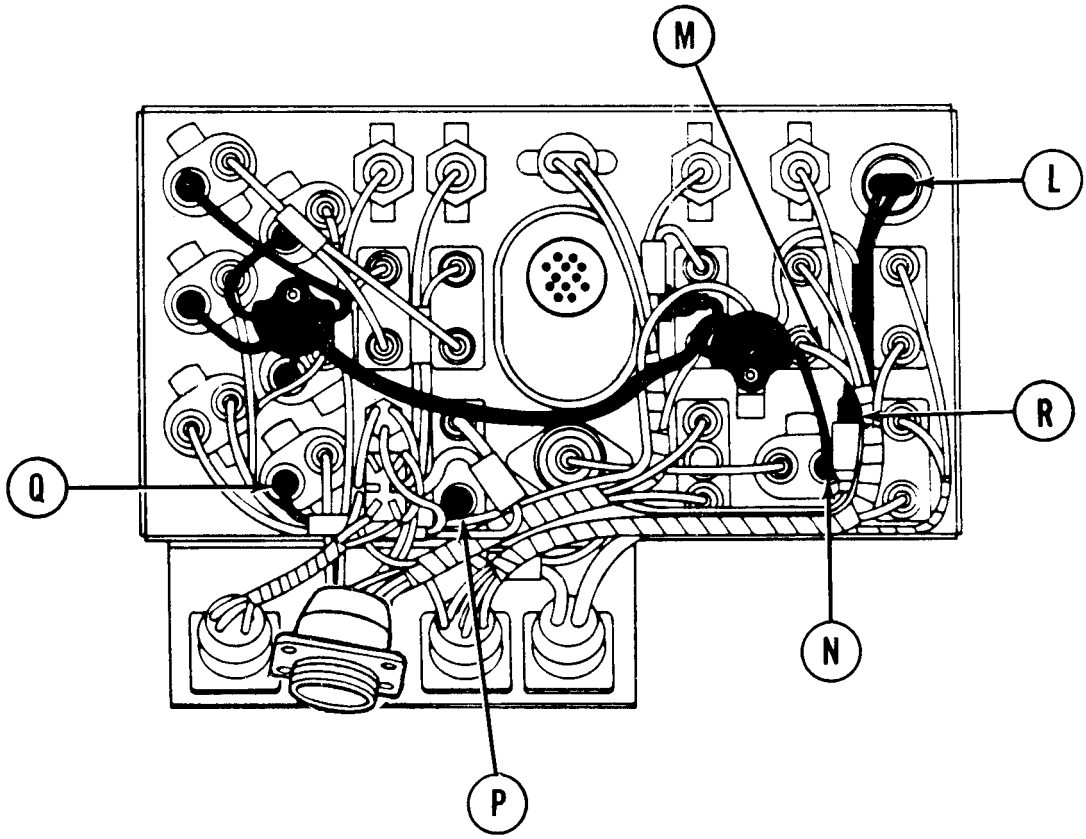
3. Using socket, install two lockwashers (F), flatwashers (G), and nuts (H) securing two harness junctions (J) to panel.
4. Apply silicone compound to all male electrical connectors of wiring harness (K).

Go on to Sheet 6

TA249046

MASTER CONTROL PANEL REPAIR (Sheet 69 of 73)
Master Control Panel Wiring Harness Replacement (Sheet 6 of 7)

5. Connect two leads (circuit 14) to starter switch (L).
6. Connect electrical connector (circuit 459) to master battery switch (M).
7. Connect lead (circuit 37) to bilge pump and utility outlet circuit breaker (N).
8. Connect electrical connector (circuit 400) to master heater switch connector (P).



9. Connect lead (circuit 27) to gage circuit breaker (Q).
10. Connect leads (circuit 14) (R).

Go on to Sheet 7

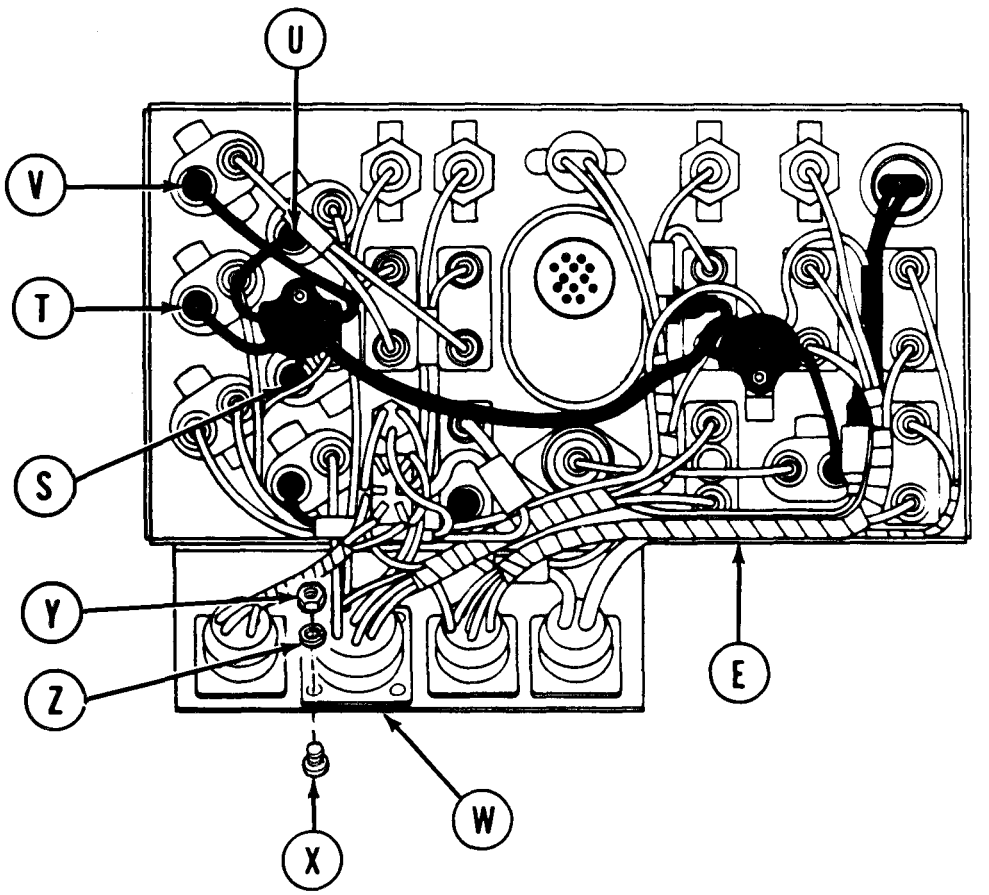
TA249047

MASTER CONTROL PANEL REPAIR (Sheet 70 of 73)
Master Control Panel Wiring Harness Replacement (Sheet 7 of 7)

11. Connect lead (circuit 76A) to fuel pump circuit breaker (S).

12. Connect lead (circuit 54) to fuel shutoff circuit breaker (T).

13. Connect lead (circuit 38/516A) to IR (night vision) power circuit breaker (U).



14. Connect lead (circuit 920) to gas particulate circuit breaker (V).

15. Position connector (W) onto panel.

16. Using flat-tip screwdriver on screws (X) and 11/32 inch wrench on nuts (Y), install four screws (X), lockwasher (Z) and nuts (Y) to secure connector (W) to panel (E).

17. Install panel in vehicle (page 10-36).

End of Task

TA249048

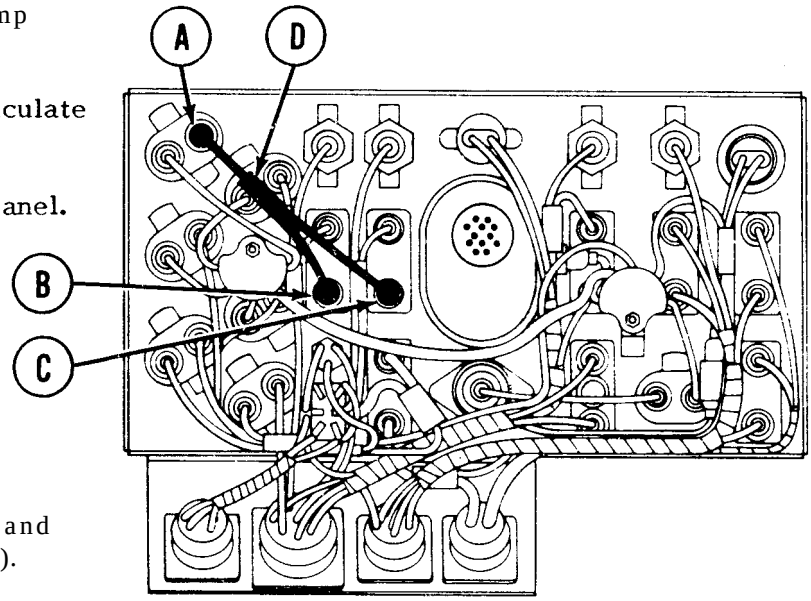
MASTER CONTROL PANEL REPAIR (Sheet 71 of 73)
Gas Particulate And Bilge Pump Lead Assembly Replacement (Sheet 1 of 1)

SUPPLIES: Silicone compound (Item 32, Appendix D)

PRELIMINARY PROCEDURE: Remove panel from vehicle (page 10-34).

REMOVAL:

1. Remove connector from bilge pump and gas particulate circuit breaker (A).
2. Remove connector from bilge pump switch (E).
3. Remove connector from Gas particulate switch (C).
4. Remove lead assembly (D) from panel.



INSTALLATION:

1. Apply silicone compound to three connectors on cable (D).
2. Connect connector to bilge pump and gas particulate circuit breaker (A).
3. Connect connector to bilge pump switch (B).
4. Connect connector to gas particulate switch (C).
5. Install panel in vehicle (page 10-36).

End of Task

TA249049

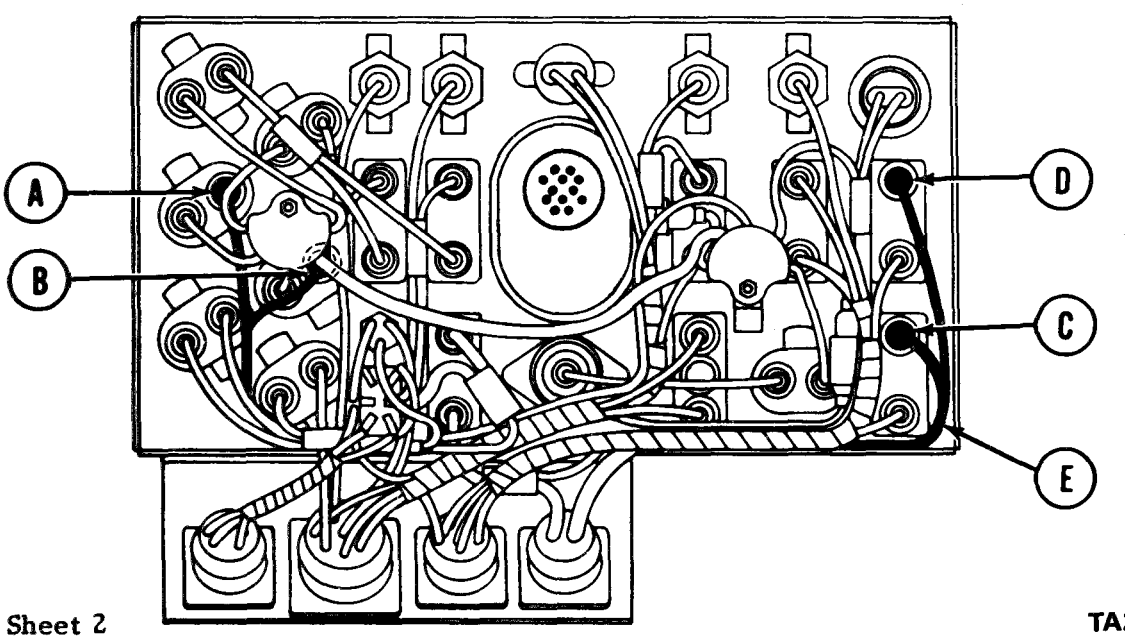
MASTER CONTROL PANEL REPAIR (Sheet 72 of 73)
Fuel Shutoff Wiring Harness Replacement (Sheet 1 of 2)

SUPPLIES: Silicone compound (Item 32, Appendix D)

PRELIMINARY PROCEDURE: Remove panel from vehicle (page 10-34).

REMOVAL:

1. Remove circuit 54 connector from fuel shutoff circuit breaker (A).
2. Remove circuit 76 connector from fuel pump circuit (B).
3. Disconnect circuit 76 connector from fuel pump switch (C).
4. Remove circuit 54 connector fuel shutoff switch (D).
5. Remove wiring harness (E).



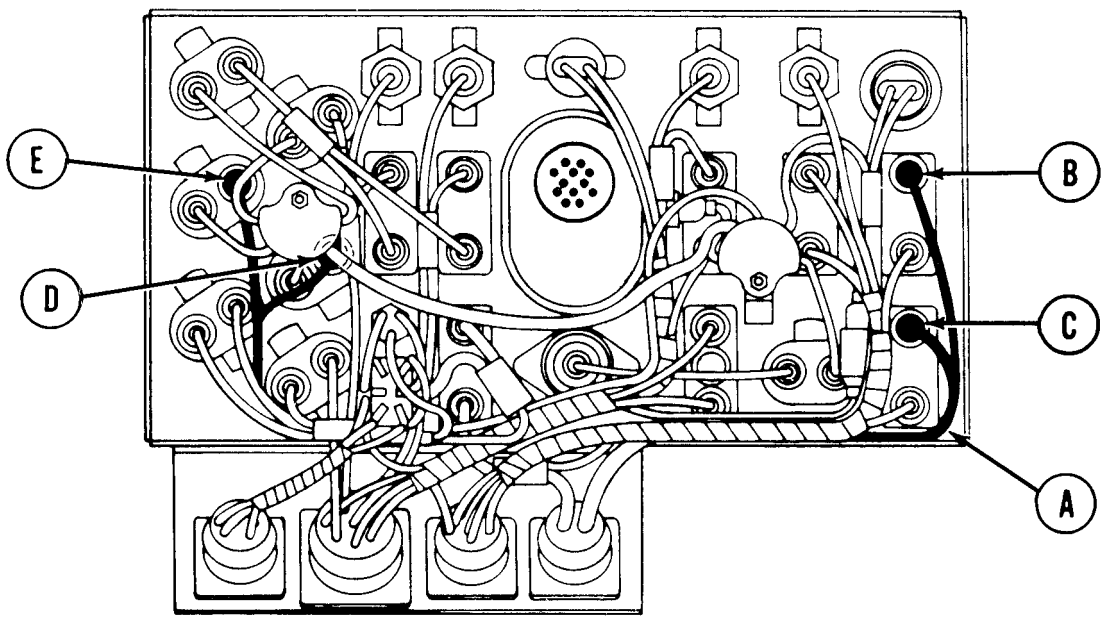
Go on to Sheet 2

TA249050

MASTER CONTROL PANEL REPAIR (Sheet 73 of 73)
Fuel Shutoff Wiring Harness Replacement (Sheet 2 of 2)

INSTALLATION:

1. Place wiring harness (A) in position in master control panel.
2. Apply silicone compound to four male electrical connectors of wiring harness (A).
3. Connect circuit 54 connector to fuel shutoff switch (E).
4. Connect curcuit 76 connector to fuel pump switch (C) by pushing together.
5. Connect circuit 76 connector to fuel pump circuit breaker (D).
6. Connect circuit 54 connector fuel shutoff circuit breaker (E).
7. Install panel in vehicle (page 10-36).



End of Task

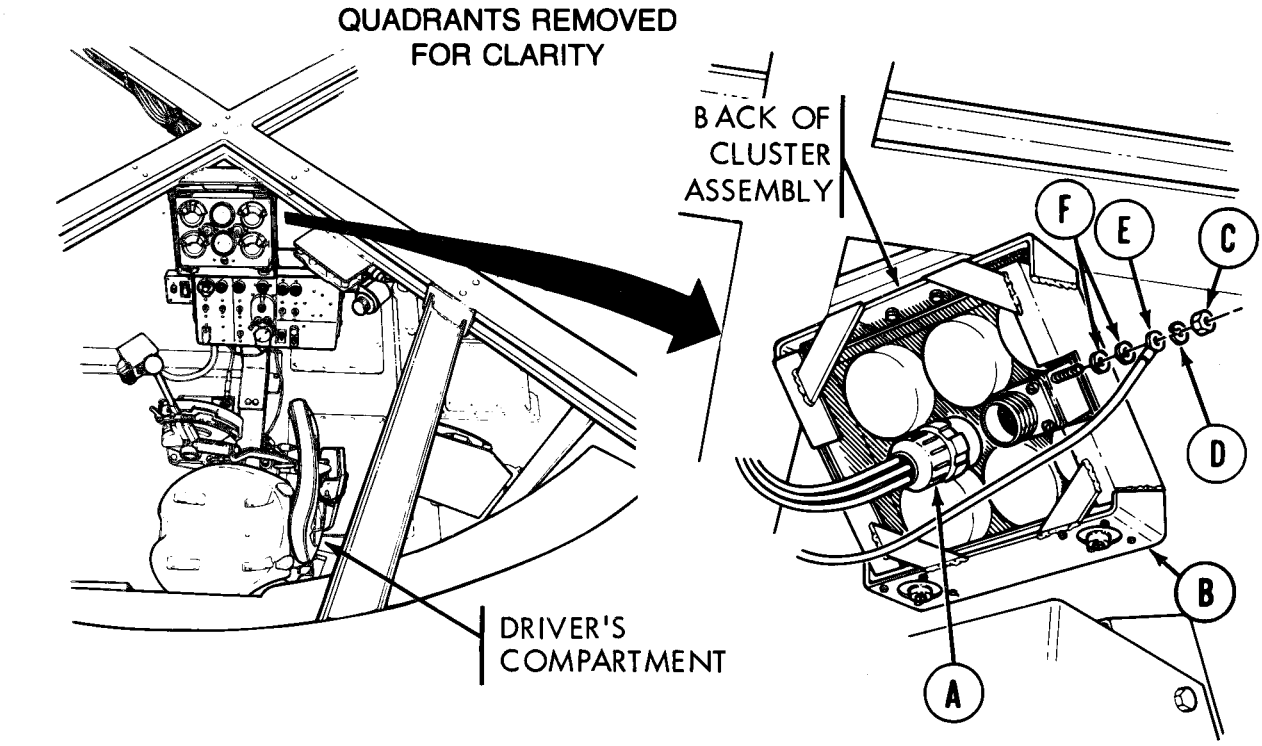
TA249051

INSTRUMENT PANEL CLUSTER ASSEMBLY REPLACEMENT (Sheet 1 of 3)

TOOLS: 7/16 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
Flat-tip screwdriver
Spanner wrench

REFERENCES: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Remove three battery ground straps (page 10-268)



REMOVAL:

1. Using spanner wrench, remove electrical connector (A) from rear of panel (B).
2. Using socket, remove nut (C) and lockwasher (D) securing ground strap (E) to panel (B).
3. Remove ground strap (E) and two lockwashers (F) from panel (B).

Go on to Sheet 2

TA249052

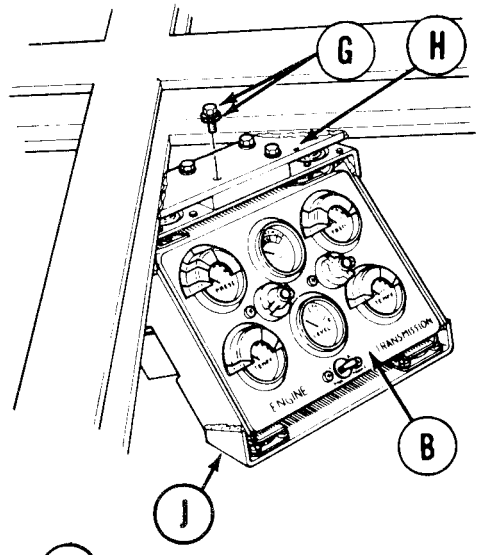
INSTRUMENT PANEL CLUSTER ASSEMBLY REPLACEMENT (Sheet 2 of 3)

4. Using socket, remove four screws and lockwashers (G) securing panel (B) to mounting plate (H).

5. Remove panel (B) and mounting support (J) from vehicle.

6. Using screwdriver and wrench, remove four screws, lockwashers, and nuts (K) securing panel (B) to mounting support (L).

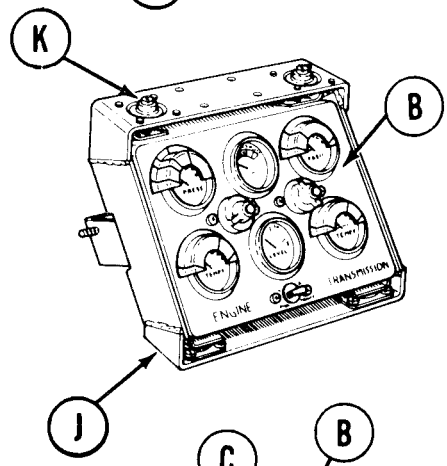
7. Remove panel (B) from mounting support (J).

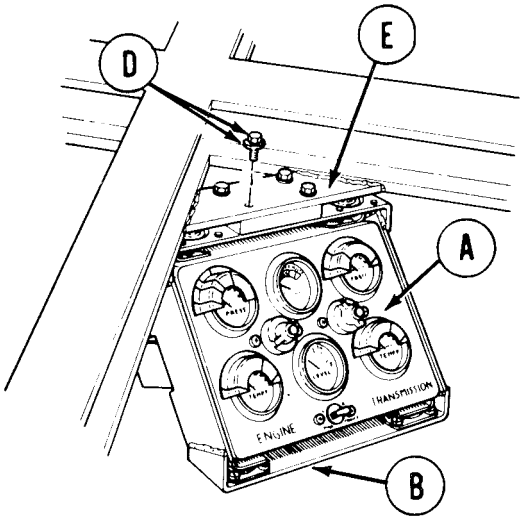


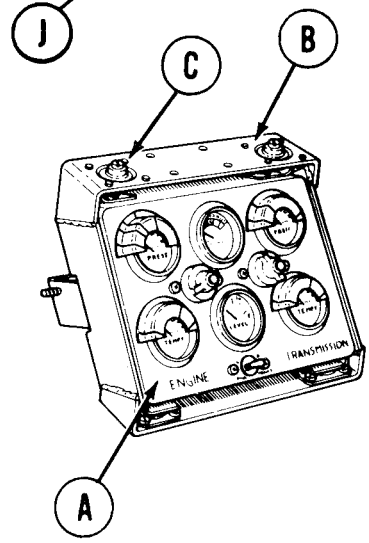
INSTALLATION:

1. Place panel (A) in position on mounting support (B).

2. Using screwdriver and wrench, install four screws, lockwashers, and nuts (C) securing panel (A) to mounting support (B).







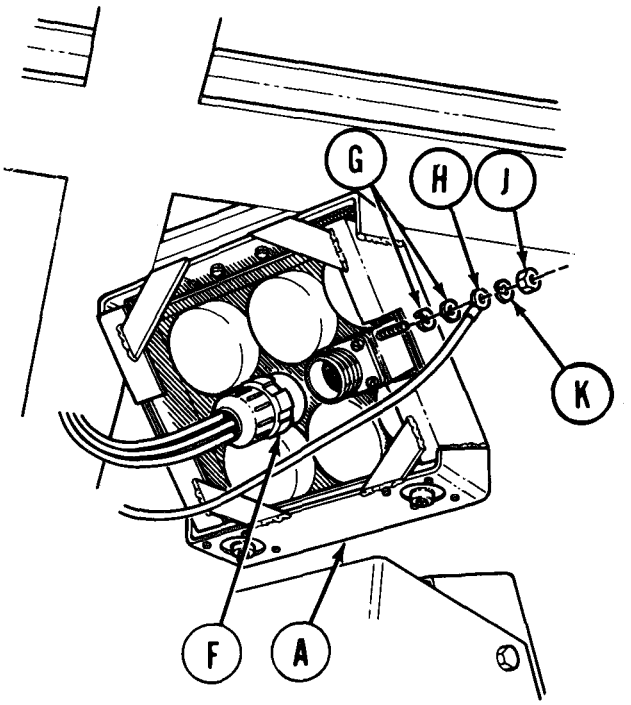
3. Place panel (A) and mounting support (B) in position in vehicle.

4. Using socket, install four screws and lockwashers (D) securing panel (A) to mounting plate (E).

Go on to Sheet 3

TA249053

INSTRUMENT PANEL CLUSTER ASSEMBLY REPLACEMENT (Sheet 3 of 3)



5. Using spanner wrench, connect electrical connector (F) to rear of panel (A).

6. Place two lockwashers (G), and ground strap (H) in position on rear of panel(A).

7. Using socket, install nut (J) and lockwasher (K), securing ground strap to rear of panel (A).

8. Connect three battery ground straps to batteries (page 10-268).

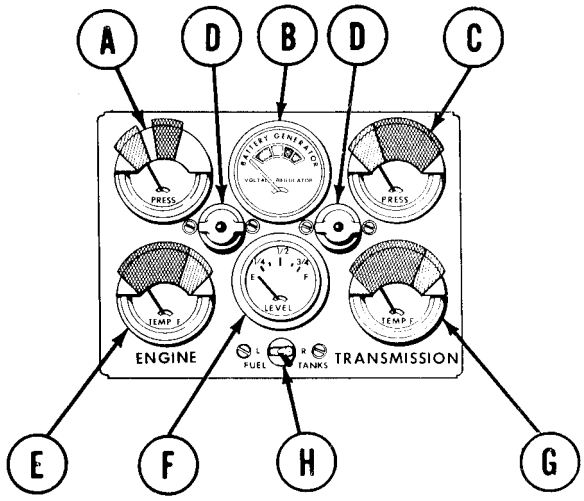
9. Check instrument panel for operation (TM 5-5420-202-10).

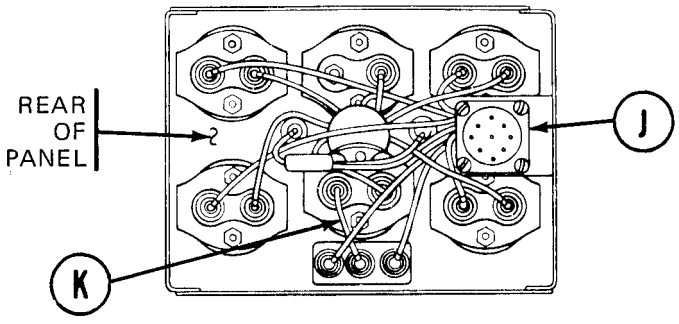
End of Task

TA249054

INSTRUMENT PANEL CLUSTER ASSEMBLY REPAIR (Sheet 1 of 23)
Procedure Index (Sheet 1 of 1)

PROCEDURE INDEX





INSTRUMENT PANEL CLUSTER ASSEMBLY REPAIR (Sheet 2 of 23)
Engine Oil Pressure Indicator Replacement (Sheet 1 of 2)

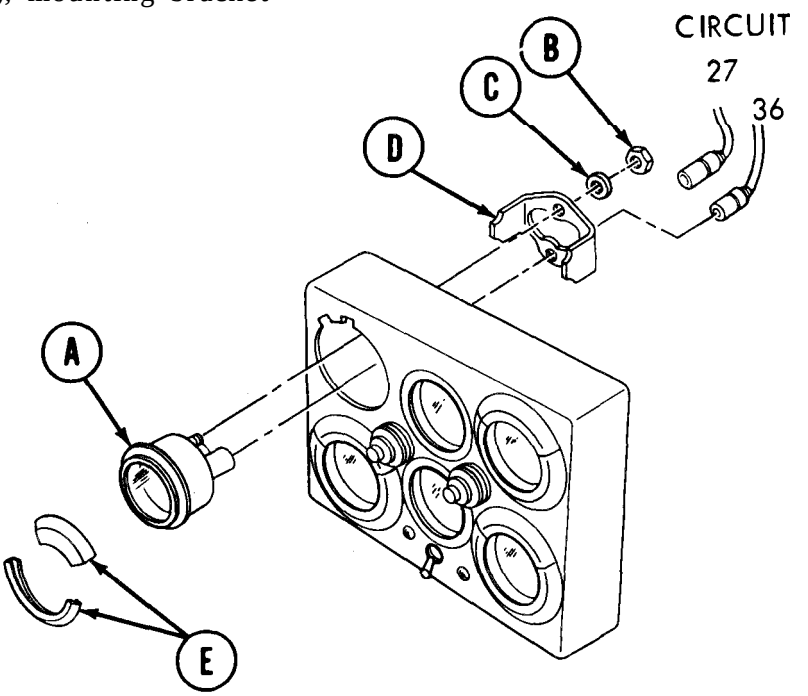
TOOLS: 3/8 in. combination box and open end wrench

SUPPLIES: Silicone compound (Item 32, Appendix D)

PRELIMINARY PROCEDURE: Remove instrument panel from vehicle (page 10-111)

REMOVAL:

1. Remove two leads (circuits 27 and 36 from rear of indicator (A) by pulling out.
2. Using wrench, remove two nuts (B) and lockwashers (C) securing indicator (A) and mounting bracket (D) to panel.
3. Remove indicator (A), mounting bracket (D), and bezel (E).



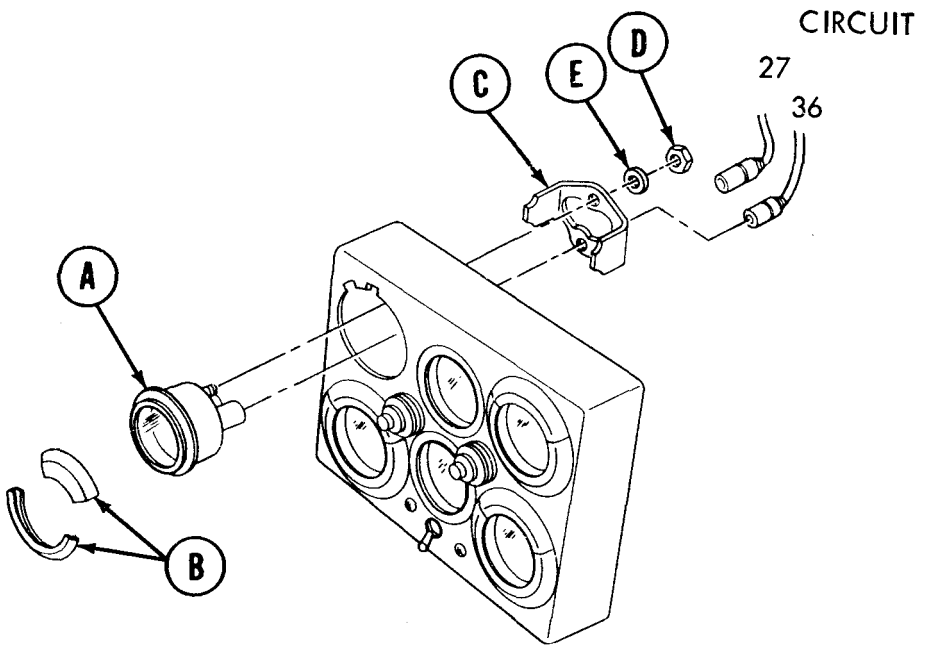
Go on to Sheet 2

TA249056

INSTRUMENT PANEL CLUSTER ASSEMBLY REPAIR (Sheet 3 of 23)
Engine Oil Pressure Indicator Replacement (Sheet 2 of 2)

INSTALLATION:

1. Apply silicone compound to two indicator (A) electrical connectors.
2. Place bezel (B) on indicator (A) and place in position on panel.
3. Place mounting bracket (C) in position on rear of indicator (A).
4. Using wrench, install two nuts (D) and lockwashers (E).



5. Connect two leads (circuits 27 and 36) to rear of indicator (A) by pushing in.
6. Install panel in vehicle (page 10-112).

End of Task

TA249057

INSTRUMENT PANEL CLUSTER ASSEMBLY REPAIR (Sheet 4 of 23)
Battery Generator Indicator Replacement (Sheet 1 of 2)

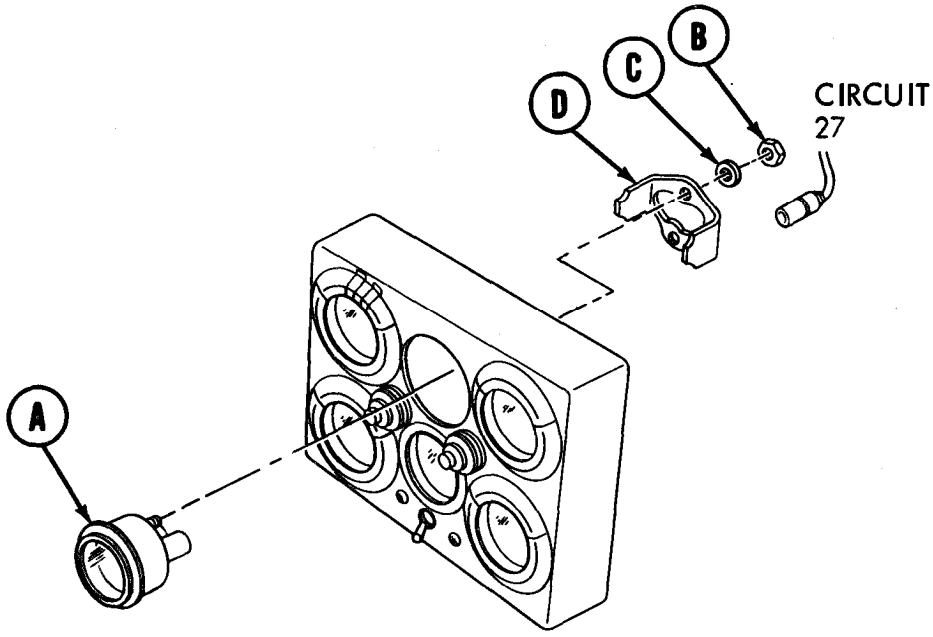
TOOLS: 3/8 in. combination box and open end wrench

SUPPLIES: Silicone compound (Item 32, Appendix D)

PRELIMINARY PROCEDURE: Remove instrument panel from vehicle (page 10-111)

REMOVAL:

1. Remove lead (circuit 27) from rear of indicator (A) by pulling out.
2. Using wrench, remove two nuts (B) and lockwashers (C) securing indicator (A) and mounting bracket (D) to panel.
3. Remove indicator (A) and mounting bracket (D).



INSTALLATION:

1. Apply silicone compound to indicator (A) electrical connector.

Go on to Sheet 2

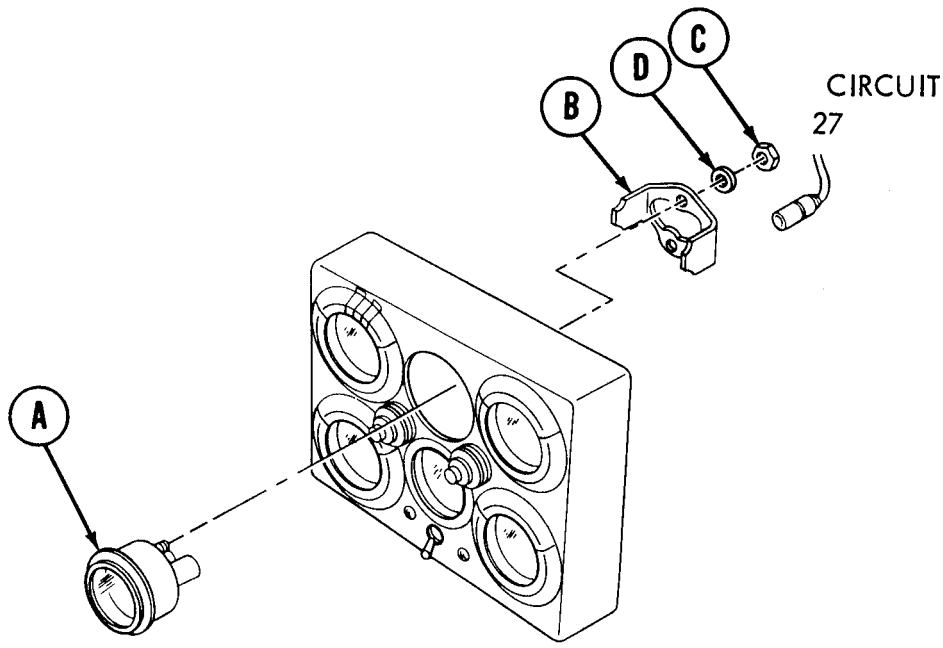
TA249058

INSTRUMENT PANEL CLUSTER ASSEMBLY REPAIR (Sheet 5 of 23)
Battery Generator Indicator Replacement (Sheet 2 of 2)

2. Place indicator (A) in position in panel.

3. Place mounting bracket (B) in position on indicator (A).

4. Using wrench, install two nuts (C) and lockwashers (D) securing indicator (A) and mounting bracket (B) on panel.



5. Connect lead (circuit 27) to rear of indicator (A) by pushing in.

6. Install panel in vehicle (page 10-112).

End of Task

TA249059

INSTRUMENT PANEL CLUSTER ASSEMBLY REPAIR (Sheet 6 of 23)
Transmission Oil Pressure Indicator Replacement (Sheet 1 of 2)

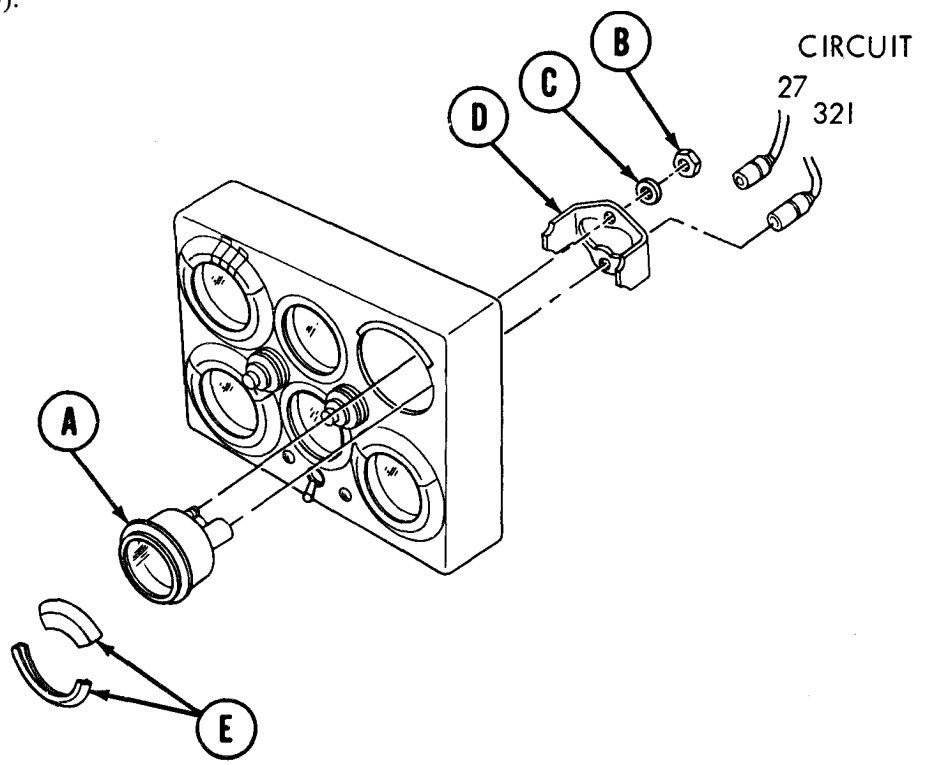
TOOLS: 3/8 in. combination box and open end wrench

SUPPLIES: Silicone compound (Item 32 Appendix D)

PRELIMINARY PROCEDURE: Remove instrument panel from vehicle (page 10-111)

REMOVAL:

1. Remove two leads (circuits 27 and 321) from rear of indicator (A) by pulling out.
2. Using wrench, remove two nuts (B) and lockwashers (C) securing indicator (A) and mounting bracket (D) to panel.
3. Remove indicator (A), bezel (E), and mounting bracket (D).



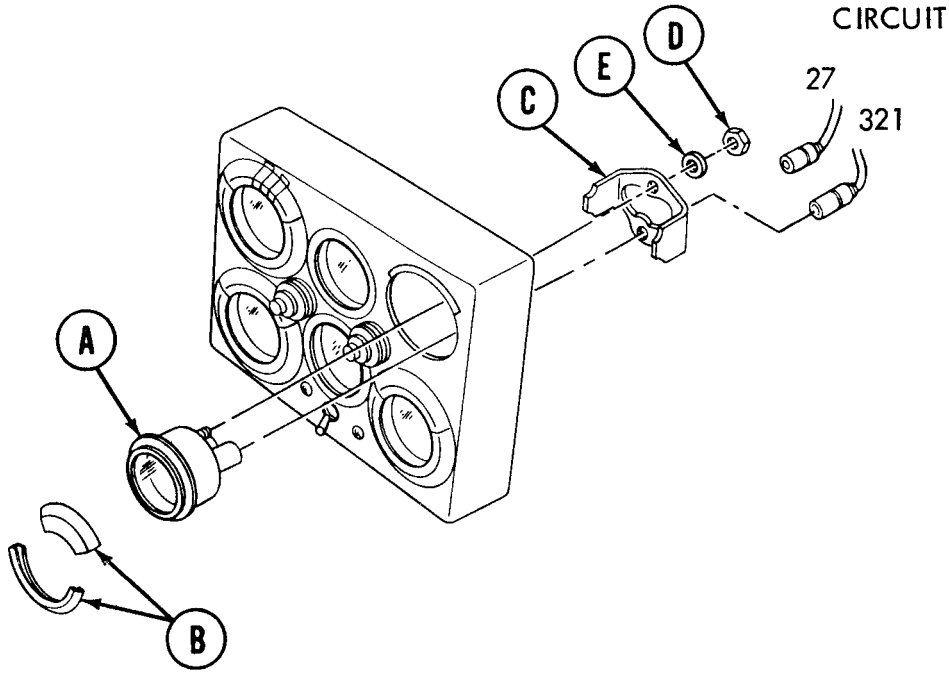
Go on to Sheet 2

TA249060

INSTRUMENT PANEL CLUSTER ASSEMBLY REPAIR (Sheet 7 of 23)
Transmission Oil Pressure Indicator Replacement (Sheet 2 of 2)

INSTALLATION:

1. Apply silicone compound to two indicator (A) electrical connectors.
2. Place bezel (B) in position on indicator (A).
3. Place indicator (A) and bezel (B) in position in panel.
4. Place mounting bracket (C) in position on indicator (A).
5. Using wrench, install two nuts (D) and lockwashers (E) securing indicator (A) and mounting bracket (C) to panel.



6. Connect two leads (circuits 27 and 321) to rear of indicator (A) by pushing in.
7. Install panel in vehicle (page 10-112).

End of Task

TA249061

INSTRUMENT PANEL CLUSTER ASSEMBLY REPAIR (Sheet 8 of 23)
Gage Illumination Indicator Light Replacement (Sheet 1 of 2)

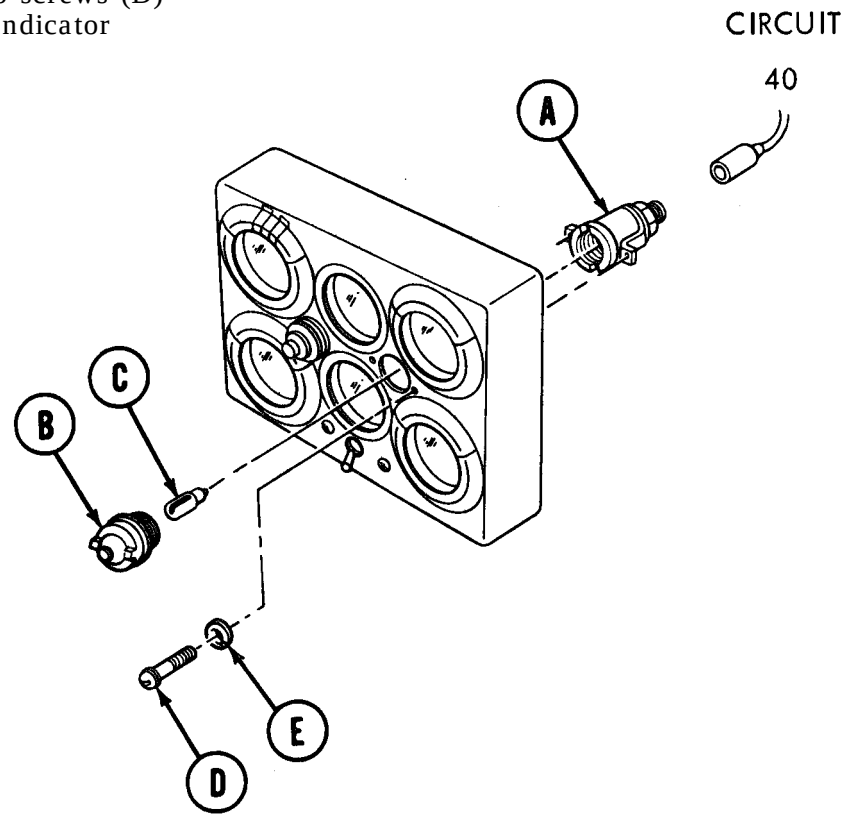
TOOLS: Flat-tip screwdriver

SUPPLIES: Silicone compound (Item 32, Appendix D)

PRELIMINARY PROCEDURE: Remove instrument panel from vehicle (page 10-111)

REMOVAL:

1. Remove lead (circuit 40) from rear of indicator light (A) by pulling out.
2. Remove lens (B) by turning to left.
3. Remove lamp (C) by pushing in turning counterclockwise.
4. Using screwdriver, remove two screws (D) and lockwashers (E) securing indicator light (A) to panel.
5. Remove indicator light (A).



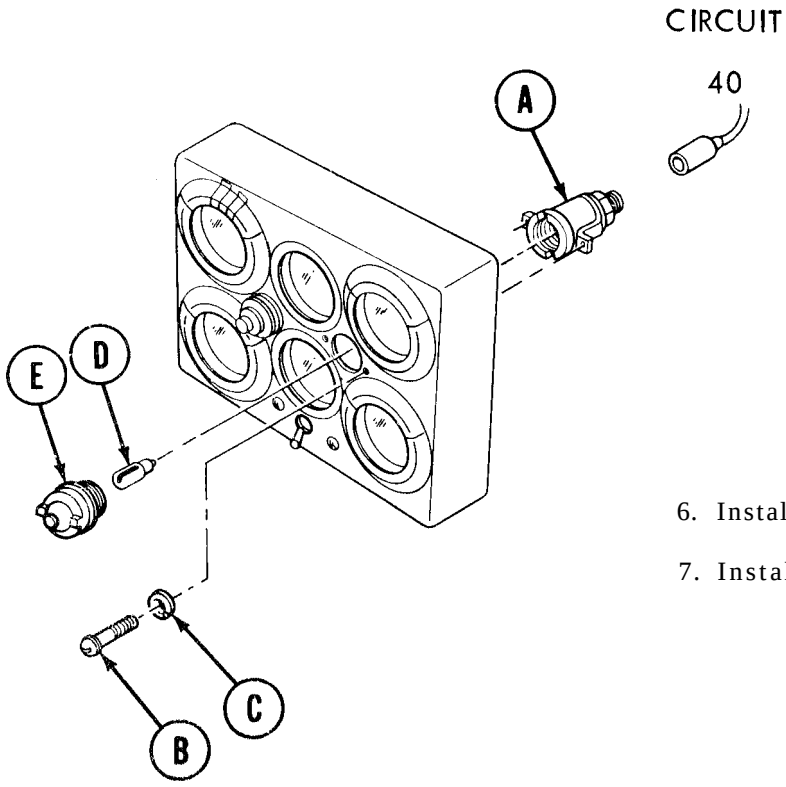
Go on to Sheet 2

TA249062

INSTRUMENT PANEL CLUSTER ASSEMBLY REPAIR (Sheet 9 of 23)
Gage Illumination Indicator Light Replacement (Sheet 2 of 2)

INSTALLATION:

1. Apply silicone compound to indicator light (A) (circuit 40).
2. Connect lead (circuit 40) to rear of indicator light (A) by pushing in.
3. Place indicator light (A) in position in panel.
4. Using screwdriver, install two screws (B) and lockwashers (C) securing indicator light (A) to panel.
5. Install lamp (D) by pushing in turning clockwise.



6. Install lens (E) by turning clockwise.
7. Install panel in vehicle (page 10-112).

End of Task

TA249063

INSTRUMENT PANEL CLUSTER ASSEMBLY REPAIR (Sheet 10 of 23)
Engine Oil Temperature Indicator Replacement (Sheet 1 of 2)

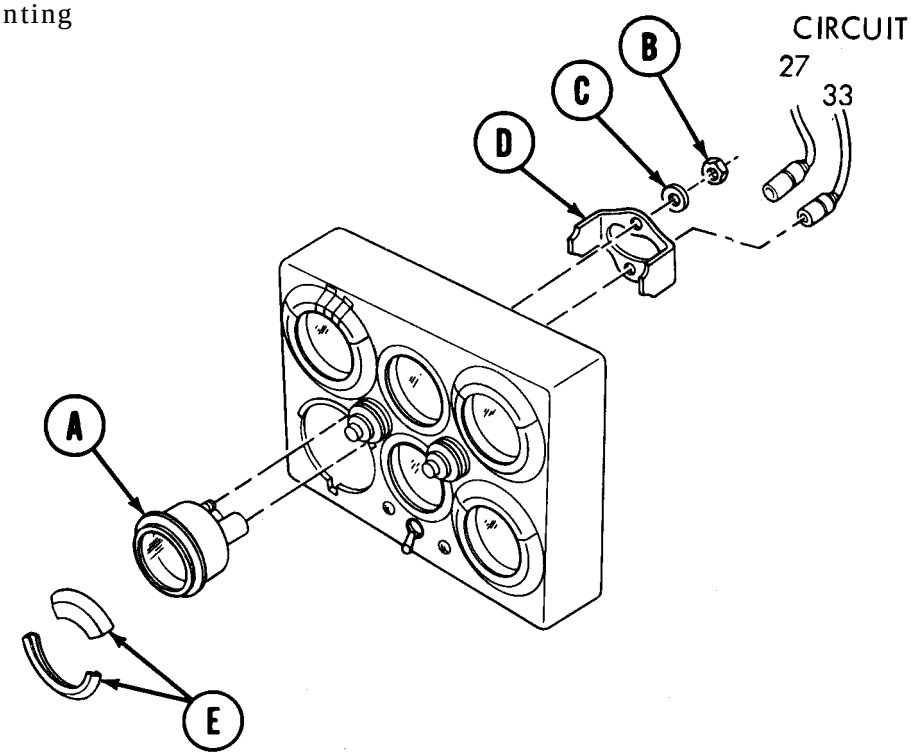
TOOLS: 3/8 in. combination box and open end wrench

SUPPLIES: Silicone compound (Item 32, Appendix D)

PRELIMINARY PROCEDURE: Remove instrument panel from vehicle (page 10-111)

REMOVAL:

1. Remove two leads (circuits 33 and 27) from indicator (A) by pulling out.
2. Using wrench, remove two nuts (B) and lockwashers (C) securing indicator (A) and mounting bracket (D) to panel.
3. Remove indicator (A), mounting bracket (D) and bezel (E).



INSTALLATION:

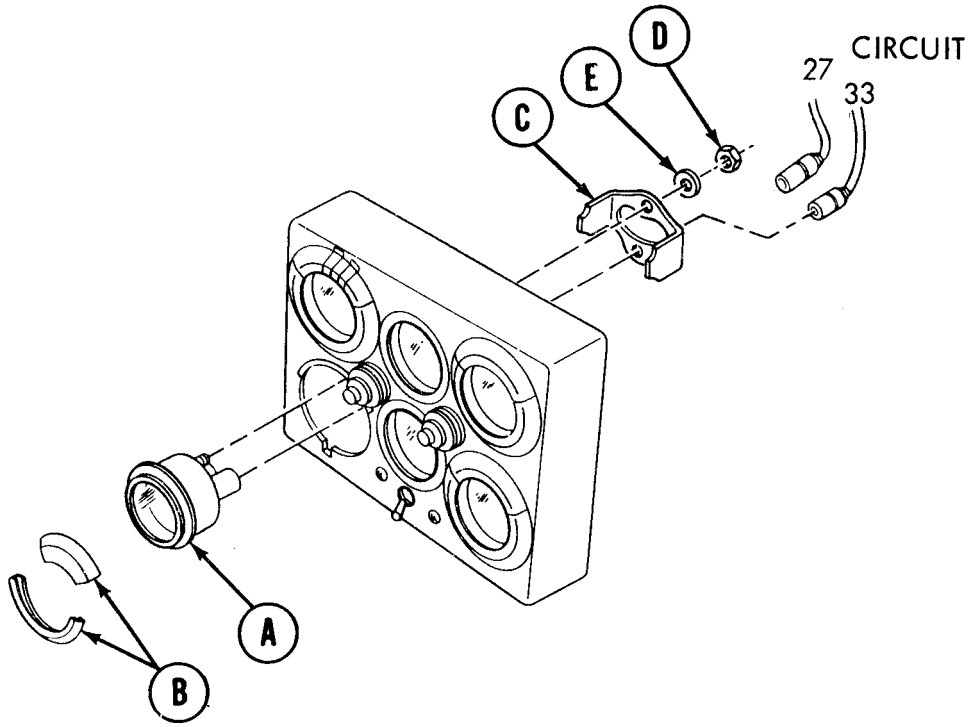
1. Apply silicone compound to two indicator (A) electrical connectors.

Go on to Sheet 2

TA249064

INSTRUMENT PANEL CLUSTER ASSEMBLY REPAIR (Sheet 11 of 23)
Engine Oil Temperature Indicator Replacement (Sheet 2 of 2)

2. Place bezel (B) on indicator (A).
3. Place indicator with bezel (A and E) in position in panel.
4. Place mounting bracket (C) in position on indicator (A).
5. Using wrench, install two nuts (D) and lockwashers (E) securing indicator (A) to panel.
6. Connect two leads (circuits 27 and 33) to indicator (A) by pushing in.



7. Install panel in vehicle (page 10-112).

End of Task

TA249065

INSTRUMENT PANEL CLUSTER ASSEMBLY REPAIR (Sheet 12 of 23)
Fuel Tank Liquid Quantity Indicator Replacement (Sheet 1 of 3)

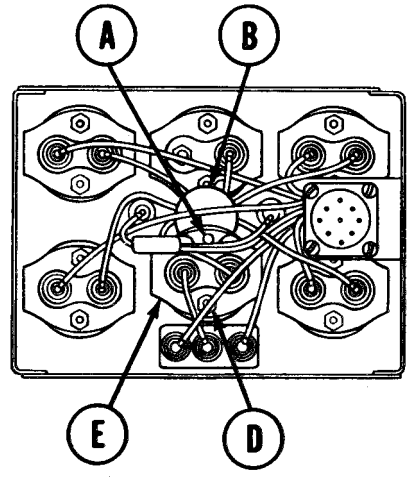
TOOLS: 3/8 in. combination box and open end wrench

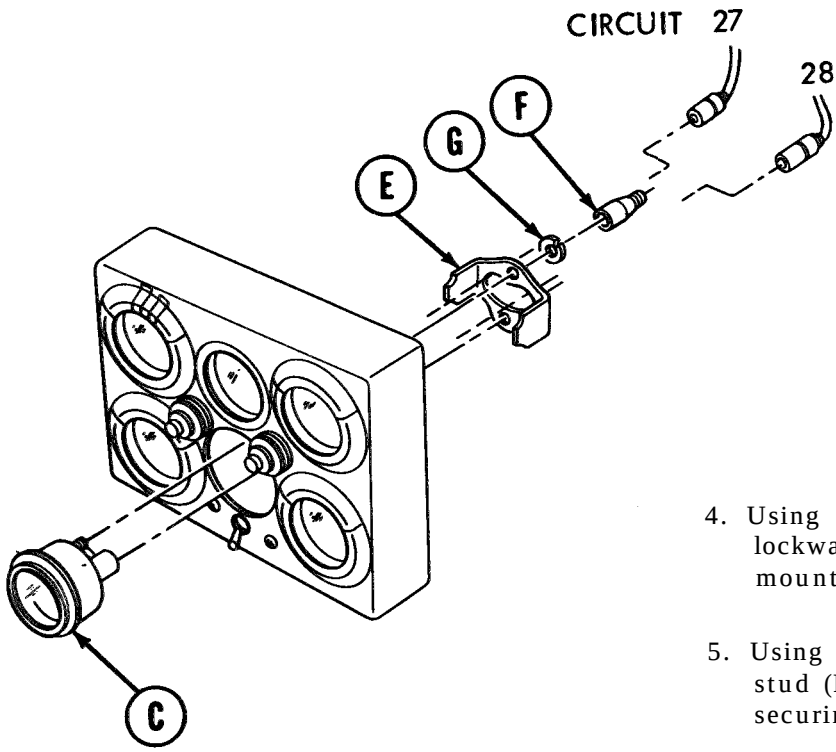
SUPPLIES: Silicone compound (Item 32, Appendix D)

PRELIMINARY PROCEDURE: Remove instrument panel from vehicle (page 10-111)

REMOVAL:

1. Using wrench, remove nut and Lockwasher (A) securing harness junction (B) to panel.
2. Displace harness junction (B) and lockwasher.
3. Disconnect two leads (circuits 27 and 28) from rear of indicator (C)





4. Using wrench remove nut and lockwasher (D) securing mounting bracket (E) to panel.
5. Using wrench, remove mounting stud (F) and lockwasher (G) securing bracket (E) to panel.
6. Remove indicator (C) and bracket (E) from panel.

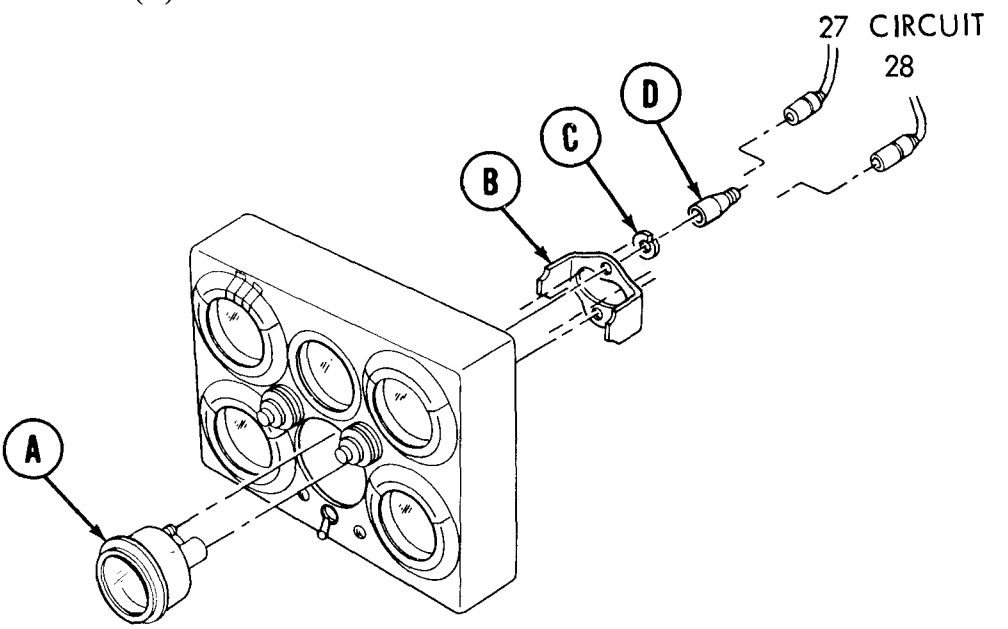
Go on to Sheet 2

TA249066

INSTRUMENT PANEL CLUSTER ASSEMBLYREPAIR (Sheet 13 of 23)
Fuel Tank Liquid Quantity Indicator Replacement (Sheet 2 of 3)

INSTALLATION:

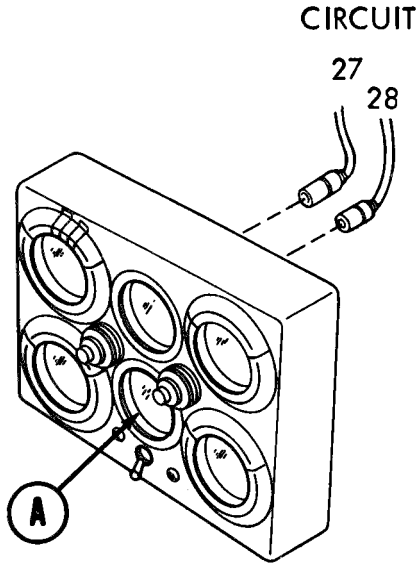
1. Apply silicone compound to two indicator (A) electrical connectors.
2. Place indicator (A) in position on panel.
3. Place mounting bracket (B) and lockwasher (C) in position on indicator (A).
4. Using wrench, install stud (D).



Go on to Sheet 3

TA249067

INSTRUMENT PANEL CLUSTER ASSEMBLY REPAIR (Sheet 14 of 23)
Fuel Tank Liquid Quantity Indicator Replacement (Sheet 3 of 3)

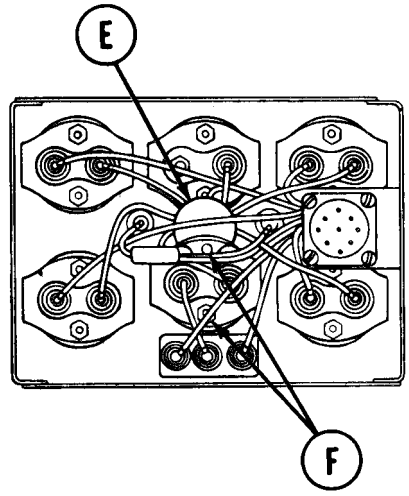


5. Place two flat washers and harness junction (E) in position on stud.

6. Using wrench, install two nuts and lockwashers (F) securing harness junction (E) and indicator (A) to panel.

7. Connect two leads (circuits 27 and 28) to rear of indicator (A).

8. Install panel in vehicle (page 10-112).



End of Task

TA249068

INSTRUMENT PANEL CLUSTER ASSEMBLY REPAIR (Sheet 15 of 23)
Transmission Oil Temperature Indicator Replacement (Sheet 1 of 2)

TOOLS: 3/8 in. combination box and open end wrench

SUPPLIES: Silicone compound (Item 32, Appendix D)

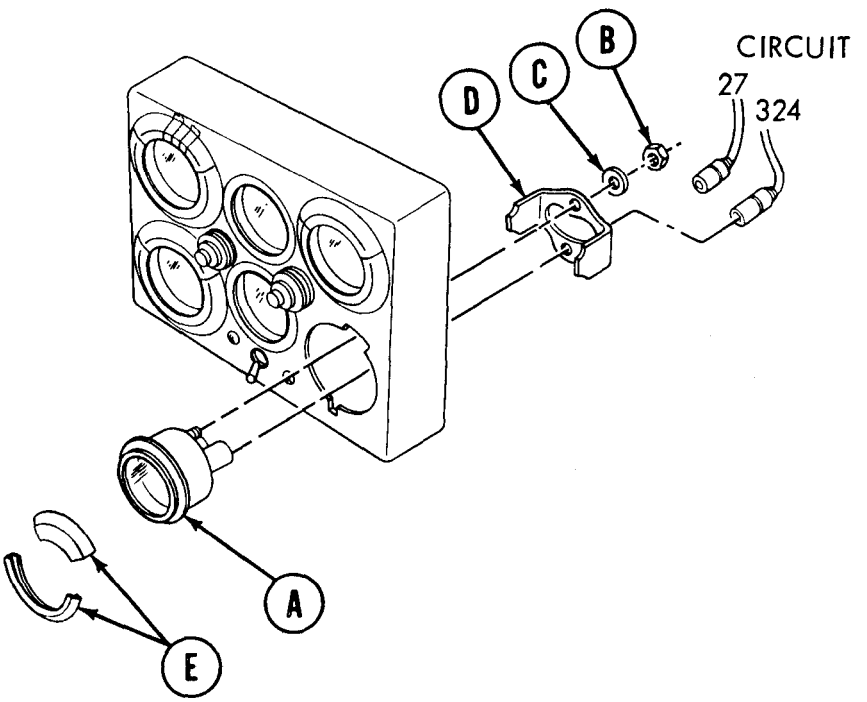
PRELIMINARY PROCEDURE: Remove instrument panel from vehicle (page 10-111)

REMOVAL:

1. Remove two leads (circuits 324 and 27) from rear of indicator (A) by pulling out.
2. Using wrench, remove two nuts (B) and lockwashers (C) securing indicator (A) and mounting bracket (D) to panel.
3. Remove indicator (A), mounting bracket (D), and bezel (E).

INSTALLATION:

1. Apply silicone compound to two indicator (A) electrical connectors.



TA249069

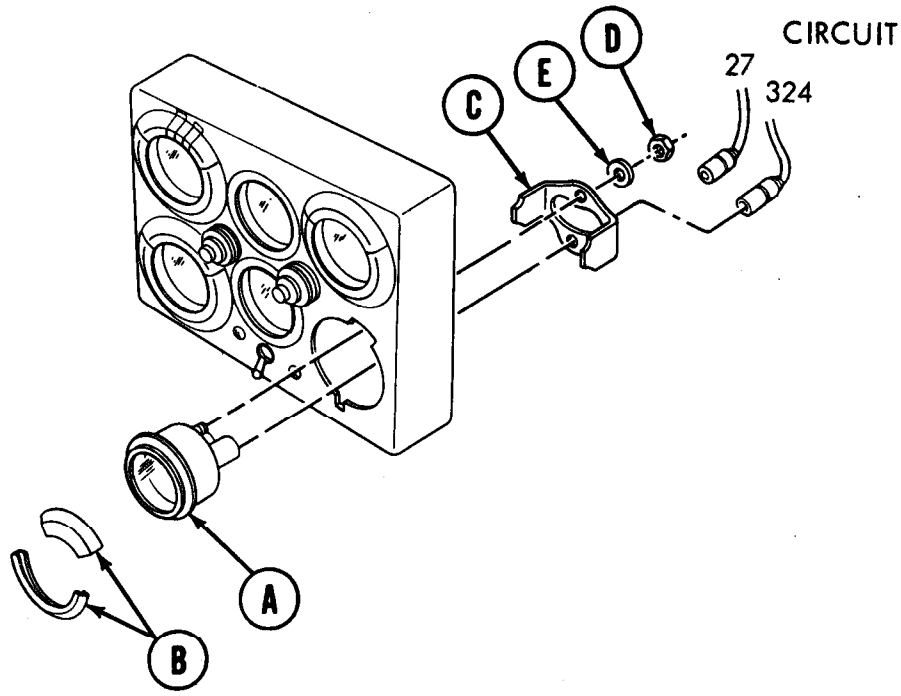
Go on to Sheet 2

INSTRUMENT PANEL CLUSTER ASSEMBLY REPAIR (Sheet 16 of 23)
Transmission Oil Temperature Indicator Replacement (Sheet 2 of 2)

2. Place bezel (B) imposition on indicator (A).

3. Place indicator (A) with bezel (B) in position in panel.

4. Place mounting bracket (C) in position on indicator (A).



5. Using wrench, install two nuts (D) and lockwashers (E) securing indicator (A) and mounting bracket (C) in position on panel.

6. Connect two leads (circuits 324 and 27) to rear of indicator (A) by pushing in.

7. Install panel in vehicle (page 10-112).

End of Task

TA249070

INSTRUMENT PANEL CLUSTER ASSEMBLY REPAIR (Sheet 17 of 23)
Fuel Tank Selector Switch Replacement (Sheet 1 of 2)

TOOLS: Flat-tip screwdriver

SUPPLIES: Silicone compound (Item 32, Appendix D)

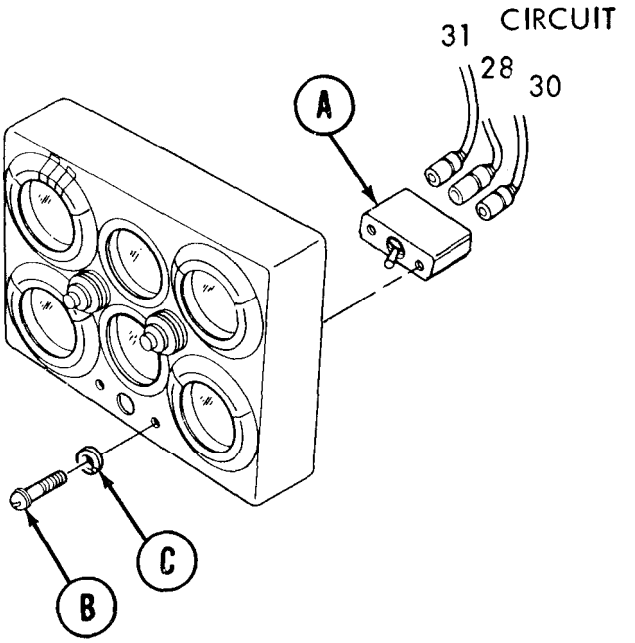
PRELIMINARY PROCEDURE: Remove instrument panel from vehicle (page 10-111)

REMOVAL:

1. Remove three leads (circuits 30, 28, and 31) from rear of switch (A) by pulling out.
2. Using screwdriver, remove two screws (B) and two lockwashers (C) securing switch (A) to panel.
3. Remove switch (A).

INSTALLATION:

1. Apply silicone compound to three switch (A) leads (circuits 30, 28, and 31).
2. Place switch (A) in position in panel.
3. Using screwdriver, install two screws (B) and lockwashers (C) securing switch (A) to panel.



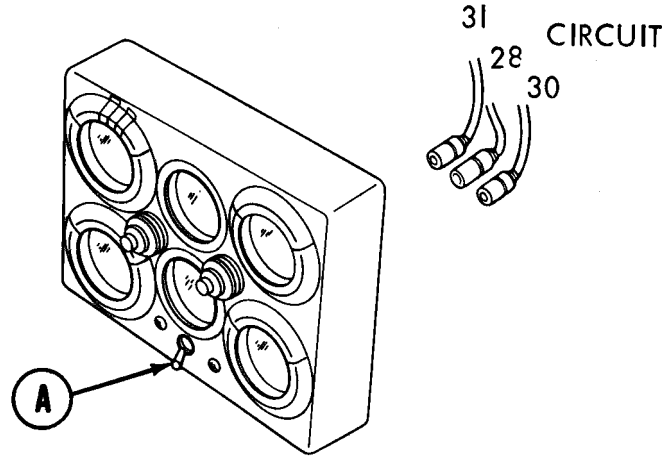
Go on to Sheet 2

TA249071

INSTRUMENT PANEL CLUSTER ASSEMBLY REPAIR (Sheet 18 of 23)
Fuel Tank selector Switch Replacement (Sheet 2 of 2)

4. Connect three leads (circuits 30, 28, and 31) to rear of switch (A).

5. Install panel in vehicle (page 10-112).



End of Task

TA249072

INSTRUMENT PANEL CLUSTER ASSEMBLY REPAIR (Sheet 19 of 23)
Instrument Panel Wiring Harness Replacement (Sheet 1 of 4)

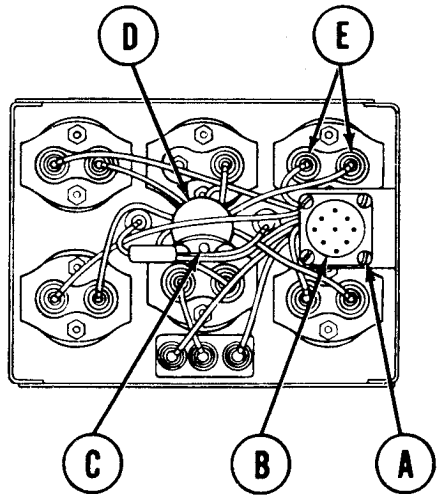
TOOLS: 3/8 in. combination box and open end wrench
Flat-tip screwdriver

SUPPLIES: Silicone compound (Item 32, Appendix D)

PRELIMINARY PROCEDURE: Remove instrument panel from vehicle (page 10-111)

REMOVAL:

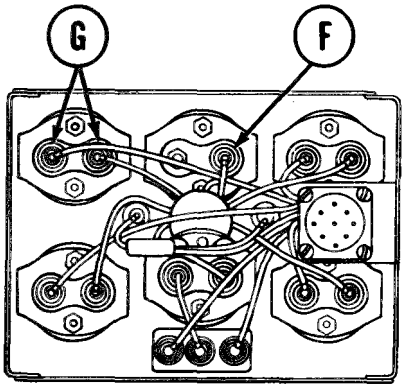
1. Using screwdriver, remove four screws and lockwashers (A) securing receptacle connector (B) to panel.
2. Using wrench, remove nut and flat washer (C) securing harness junction (D) to panel. Displace harness junction (D) and remove flat washer.
3. Disconnect two leads (circuits 27 and 36) from engine oil pressure gage (E) by pulling out.



Go on to Sheet 2

TA249073

INSTRUMENT PANEL CLUSTER ASSEMBLY REPAIR (Sheet 20 of 23)
Instrument Panel Wiring Harness Replacement (Sheet 2 of 4)

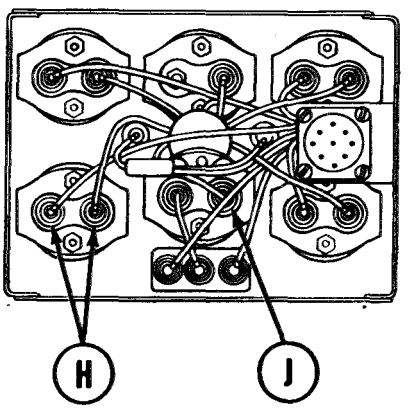


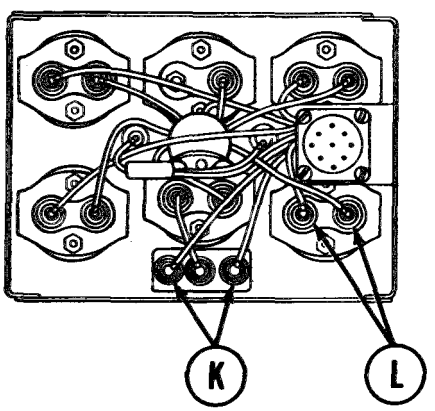
4. Disconnect one lead (circuit 27) from battery indicator gage (F).

5. Disconnect two leads (circuits 27 and 321) from transmission oil pressure indicator (G).

6. Disconnect two leads (circuits 27 and 324) from transmission oil temperature indicator (H).

7. Disconnect lead (circuit 27) from fuel gage indicator (J).





8. Disconnect two leads (circuits 30 and 31) from fuel switch (K).

9. Disconnect two leads (circuits 33 and 27) from engine oil temperature indicator (L).

Go on to Sheet 3

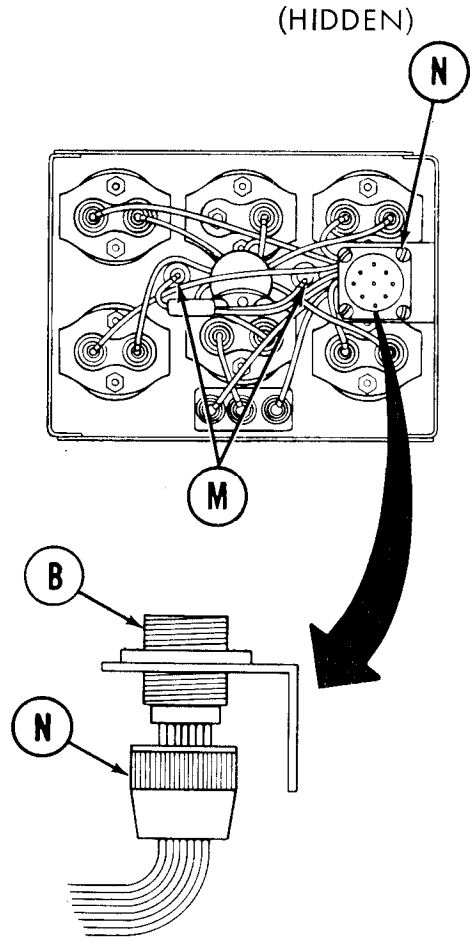
TA249074

INSTRUMENT PANEL CLUSTER ASSEMBLY REPAIR (Sheet 21 of 23)
Instrument Panel Wiring Harness Replacement (Sheet 3 of 4)

10. Disconnect two leads (circuit 40) from two panel lights (M).

11. Loosen receptacle connector retainer nut (N) (hidden) and slide back on leads.

12. Remove wiring harness from panel.



INSTALLATION:

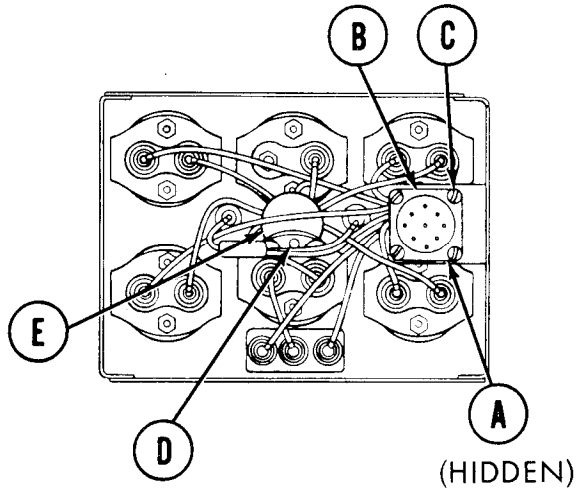
1. Apply silicone compound to 16 lead connectors of instrument panel wiring harness.

2. Place wiring harness in position in panel.

3. Using fingers, tighten receptacle connector retainer nut (A) (hidden) to receptacle connector (B).

4. Using screwdriver, install four screws and lockwashers (C) securing receptacle connector (B) to panel.

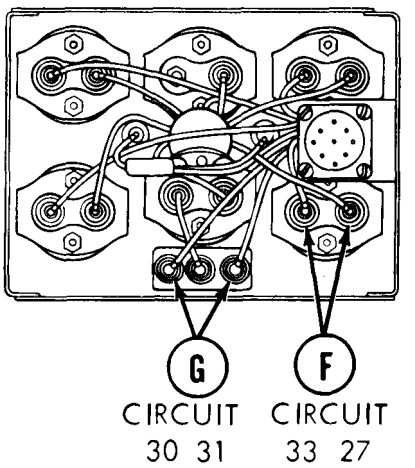
5. Using wrench, install nut and lockwasher (D) securing harness junction (E) to panel.



Go on to Sheet 4

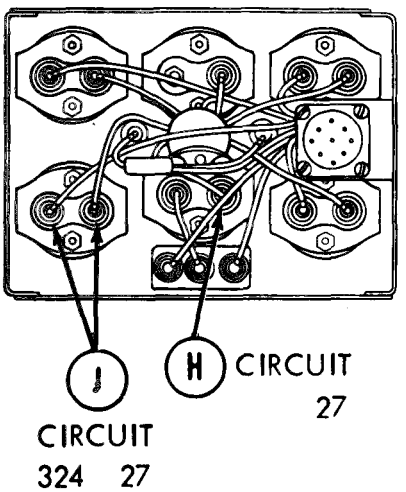
TA249075

INSTRUMENT PANEL CLUSTER ASSEMBLY REPAIR (Sheet 22 of 23)
Instrument Pad Wiring Harness Replacement (Sheet 4 of 4)



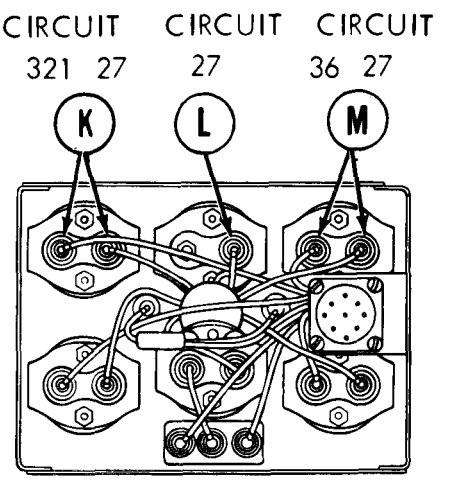
6. Connect two leads (circuits 27 and 33) to engine oil temperature indicator (F).

7. Connect two leads (circuits 30 and 31) to fuel switch (G).



8. Connect lead (circuit 27) to fuel gage indicator (H).

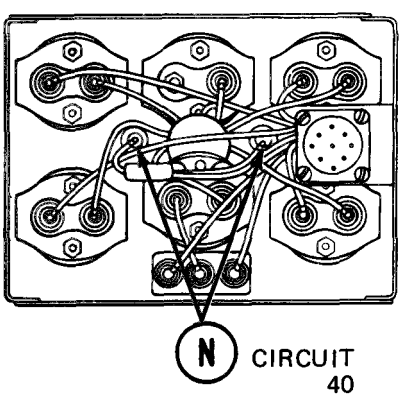
9. Connect two leads (circuits 27 and 324) to transmission oil temperature indicator (J).



10. Connect two leads (circuits 27 and 321) to transmission oil pressure indicator (K).

11. Connect lead (circuit 27) to battery indicator (L).

12. Connect two leads (circuits 27 and 36) to engine oil pressure indicator (M).



13. Connect two leads (circuit 40) to two panel lights (N).

14. Install panel in vehicle (page 10-112).

End of Task

TA249076

INSTRUMENT PANEL CLUSTER ASSEMBLY REPAIR (Sheet 23 of 23)
Fuel Tank Selector Switch Cable Assembly Replacement (Sheet 1 of 1)

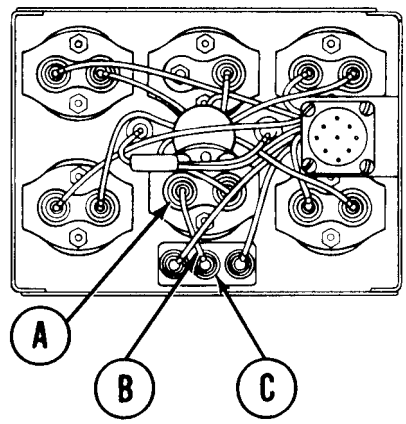
SUPPLIES: Silicone compound (Item 32, Appendix D)

PRELIMINARY PROCEDURE: Remove instrument panel from vehicle (page 10-111)

REMOVAL:

1. Remove connector (circuit 28) from fuel tank indicator (A) by pulling out.

2. Remove other connector (circuit 28) from fuel tank selector switch (B).



3. Remove lead (C).

INSTALLATION:

1. Apply silicone compound to each connector (A) and (B) of cable assembly (C).

2. Connect one connector (circuit 28) to fuel tank indicator (A).

3. Connect other connector (circuit 28) to fuel tank selector switch (B).

4. Install panel in vehicle (page 10-112).

End of Task

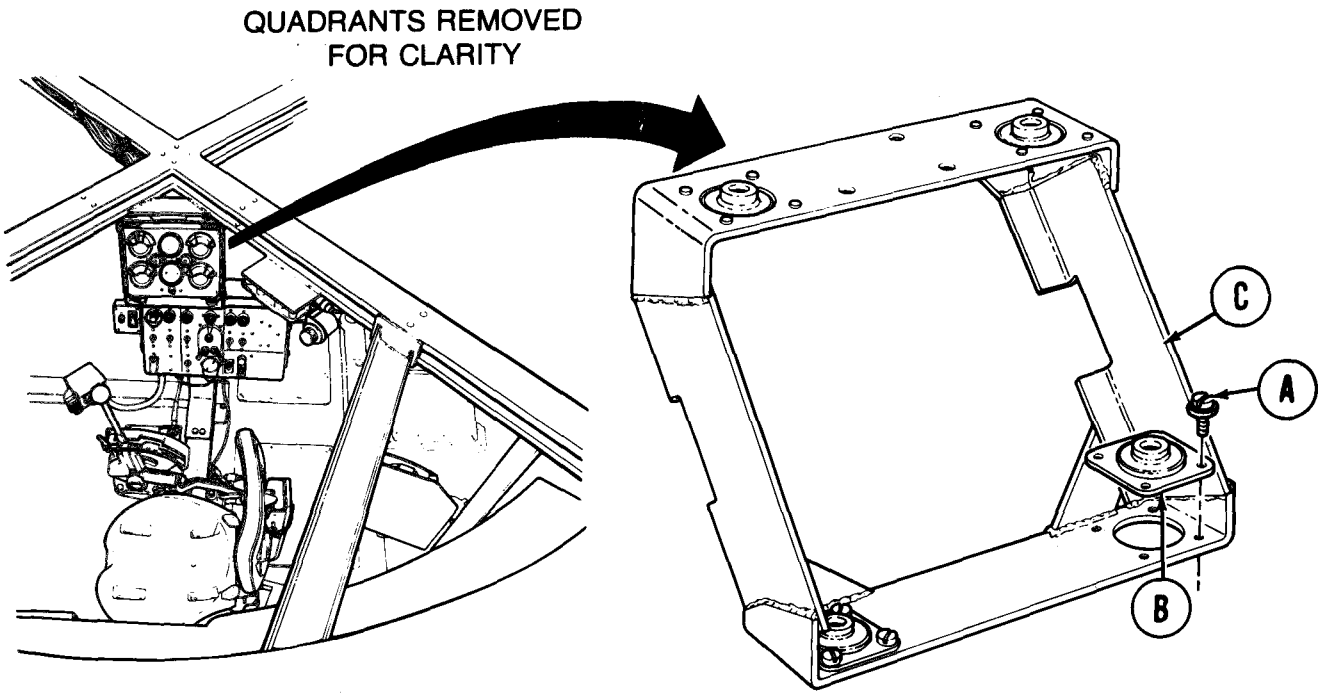
TA249077

INSTRUMENT PANEL CLUSTER ASSEMBLY MOUNTING SUPPORT AND CUSHION REPLACEMENT (Sheet 1 of 1)

TOOLS: Flat-tip screwdriver

SUPPLIES: Lockwashers (4 required)

PRELIMINARY PROCEDURES: Remove instrument panel cluster assembly from vehicle (page 10-111)



REMOVAL:

1. Using screwdriver, remove four screws, lockwashers (A) from mounting cushion (B).
2. Remove cushion (B) from mounting support (C).

INSTALLATION:

1. Place mounting cushion (B) in position on mounting support (C).
2. Using screwdriver, install four screws, lockwashers (A) securing mounting cushion (B) to mounting support (C).
3. Install instrument panel cluster assembly in vehicle (page 10-112).

End of Task

TA249078

MASTER RELAY ASSEMBLY REPLACEMENT (Sheet 1 of 3)

TOOLS: 7/8 in. open end wrench
1/2 in. box end wrench (2 required)
10 in. adjustable wrench

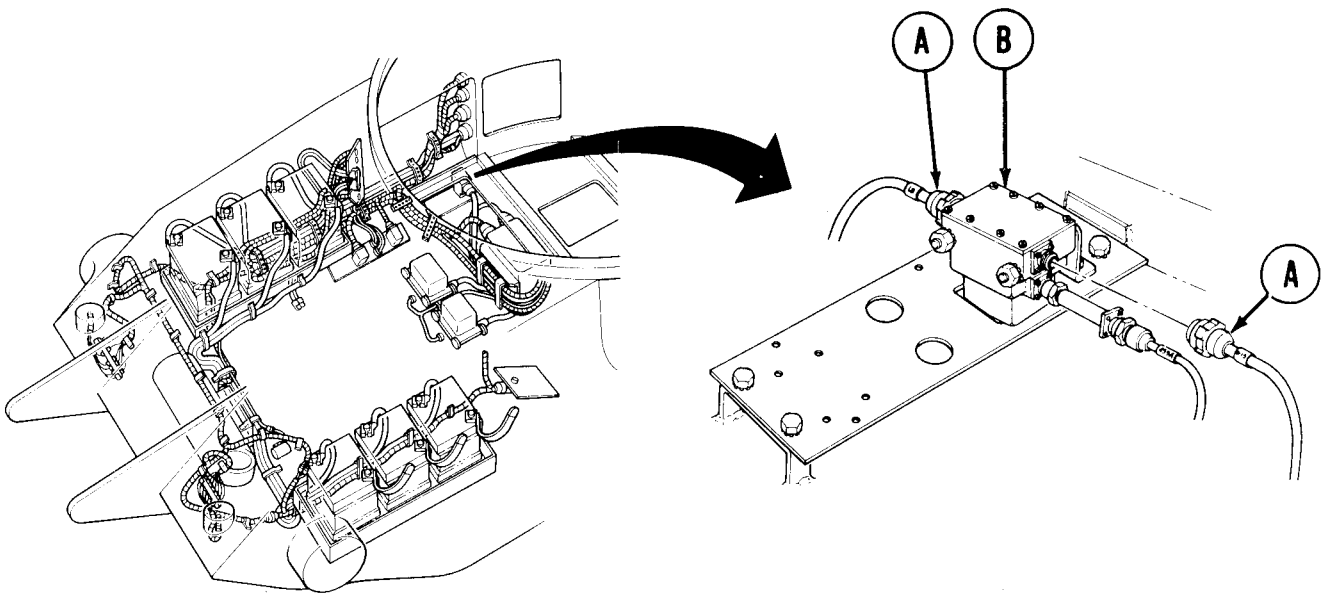
SUPPLIES: Lockwashers (4 required)

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Remove three battery ground straps (page 10-268)
Remove commander's compartment floor access plate (page 17-9)

REMOVAL:

1. Using spanner wrench, remove two electrical connectors (A) from master relay (B).



Go on to Sheet 2

TA249079

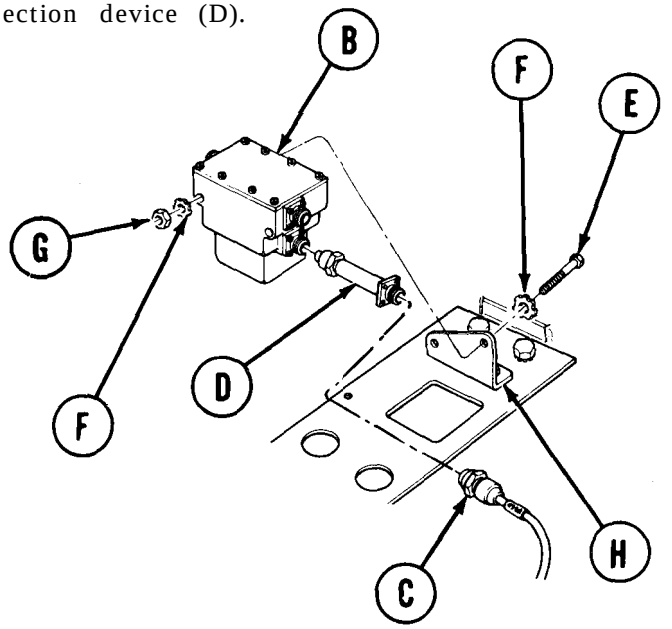
MASTER RELAY ASSEMBLY REPLACEMENT (Sheet 2 of 3)

2. Using 7/8 inch wrench on electrical connector (C) and adjustable wrench on protection device (D), remove electrical connector (C) from protection device (D).

3. Using two 1/2 inch wrenches, remove two screws (E), four lockwashers (F), and two nuts (G) securing master relay (B) to mounting bracket (H).

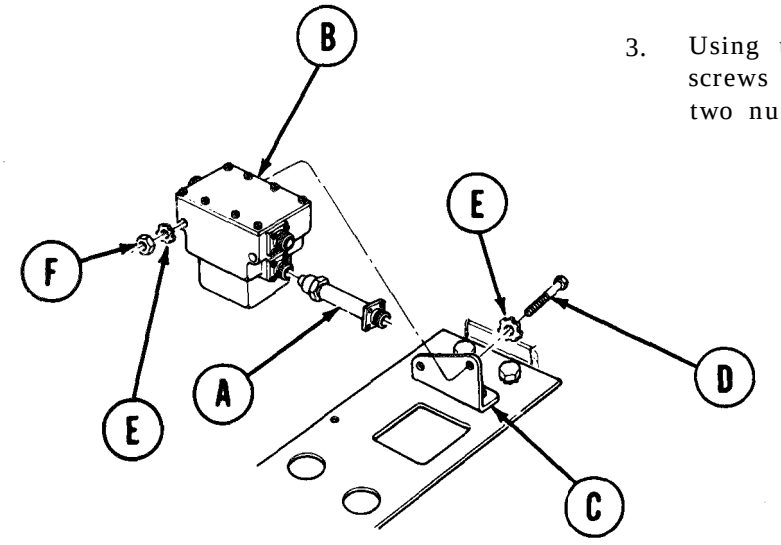
4. Remove master relay (B) from mounting bracket (H).

5. Using 7/8 inch wrench, remove protection device (D) from master relay (B).



INSTALLATION:

1. Using 7/8 inch wrench, install protection device (A) to master relay (B).



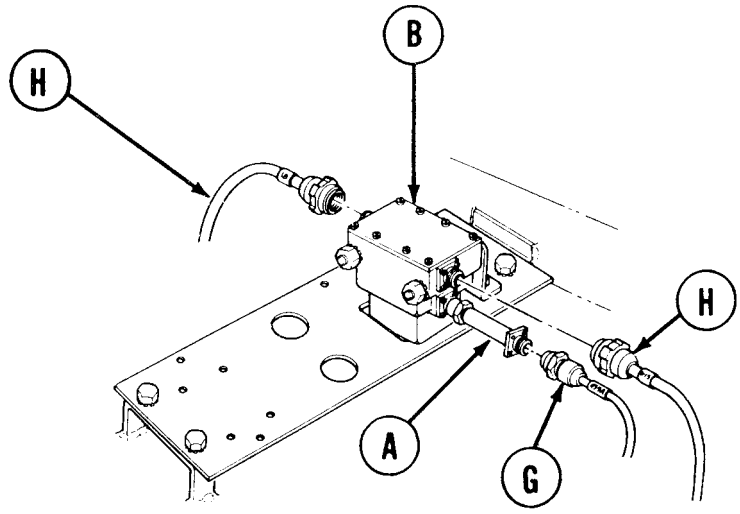
2. Position master relay (B) on mounting bracket (C).

3. Using two 1/2 inch wrenches, install two screws (D), four lockwashers (E), and two nuts (F).

Go on to Sheet 3

TA249080

MASTER RELAY ASSEMBLY REPLACEMENT (Sheet 3 of 3)



4. Using 7/8 inch open end wrench, install electrical connector (G) to protection device (A).

5. Using spanner wrench, install two electrical connectors (H) to master relay (B).

6. Install commander's seat floor access plate (page 17-9).

7. Install three battery ground straps (page 10-268).

End of Task

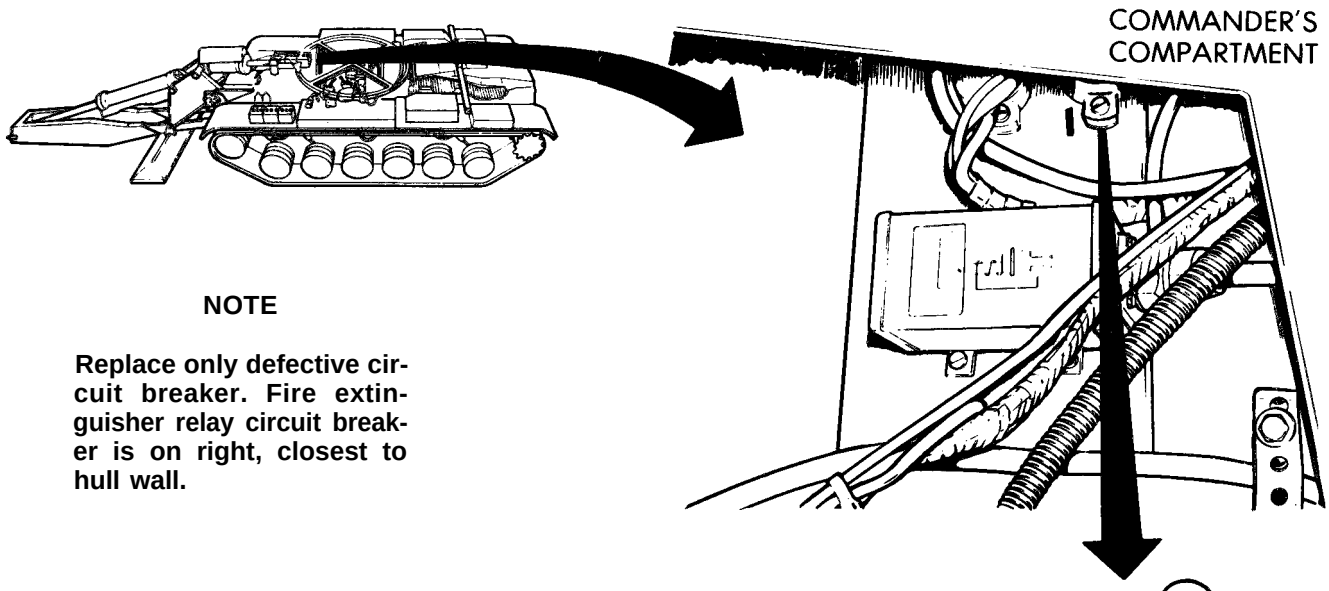
TA249081

FIRE EXTINGUISHER RELAY AND MASTER RELAY CIRCUIT BREAKER REPLACEMENT (Sheet 1 of 2)

TOOLS: 2 in. cross-tip screwdriver

SUPPLIES: Silicone compound (Item 32, Appendix D)
Lockwashers (2 required)

PRELIMINARY PROCEDURE: Remove access plate on floor in commander's compartment (page 17-9)

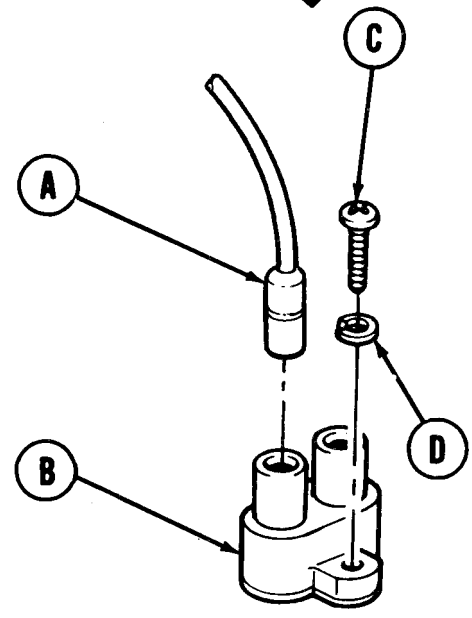


NOTE

Replace only defective circuit breaker. Fire extinguisher relay circuit breaker is on right, closest to hull wall.

REMOVAL:

1. Remove two electrical connectors (A) from circuit breaker (B) by pulling out.
2. Using screwdriver, remove two screws (C) and lockwashers (D) securing circuit breaker (B) to vehicle.



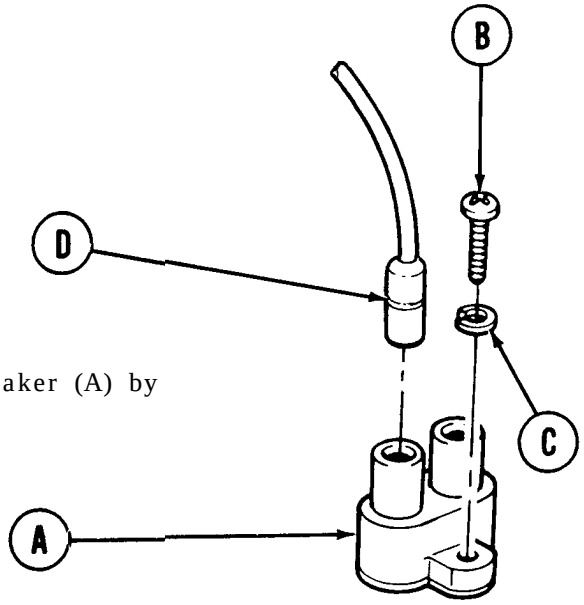
Go on to Sheet 2

TA249082

FIRE EXTINGUISHER RELAY AND MASTER RELAY CIRCUIT BREAKER REPLACEMENT (Sheet 2 of 2)

INSTALLATION:

1. Place circuit breaker (A) in position in launcher.
2. Using screwdriver, install two screws (B) and lockwashers (C) securing circuit breaker (A) to vehicle.
3. Apply silicone compound to two electrical connectors (D).
4. Install two electrical connectors (D) in circuit breaker (A) by pushing in.
5. Install access plate (page 17-9).



End of Task

TA249083

INTERCONNECTING BOX ASSEMBLY REPLACEMENT (Sheet 1 of 1)

TOOLS: 1 in. combination box and open end wrench
7/16 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
Spanner wrench

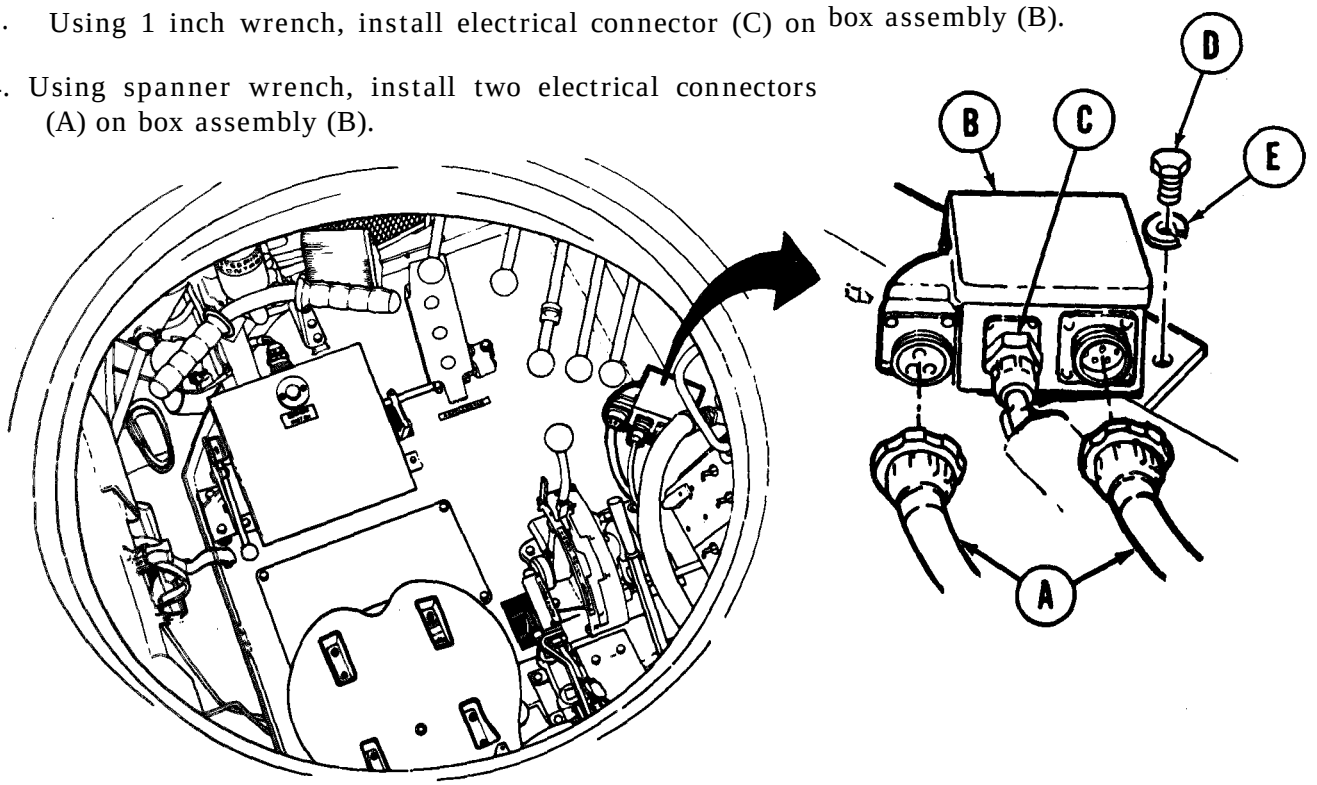
SUPPLIES: Lockwashers (2 required)

REMOVAL:

1. Using spanner wrench, remove two electrical connectors (A) from box assembly (B).
2. Using 1 inch wrench, remove electrical connector (C) from box assembly (B).
3. Using socket, remove two screws (D) and lockwashers (E), securing box assembly (B) to floor.
4. Remove box assembly (B).

INSTALLATION:

1. Place box assembly (B) in position on floor.
2. Using socket, install two screws (D) and lockwashers (E) securing box assembly (B) to floor.
3. Using 1 inch wrench, install electrical connector (C) on box assembly (B).
4. Using spanner wrench, install two electrical connectors (A) on box assembly (B).



End of Task

TA249084

INTERCONNECTING BOX ASSEMBLY REPAIR (Sheet 1 of 8)

PROCEDURE INDEX

TOOLS: Flat-tip screwdriver
5/16 in. open end wrench
11/32 in. open end wrench
7/16 in. open end wrench
5/8 in. open end wrench

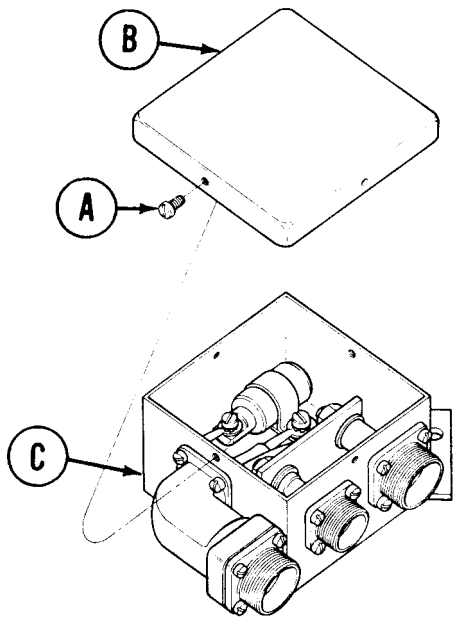
SUPPLIES: Glyptol sealer (Item 39, Appendix D)
Lockwashers (24 required)

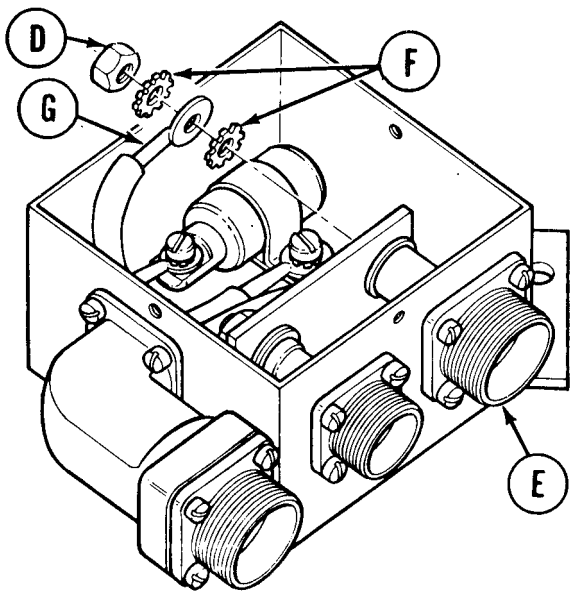
PRELIMINARY PROCEDURE: Remove interconnecting box assembly (page 10-143)

DISASSEMBLY:

1. Using screwdriver, remove four tapping-thread screws (A) securing cover (B) to box assembly (C).

2. Remove cover (B) from box assembly (c).





3. Using 5/8 inch wrench, remove nut (D) from receptacle assembly (E).

4. Remove two lockwashers (F) and electrical terminal (G) from receptacle assembly (E).

Go on to Sheet 2

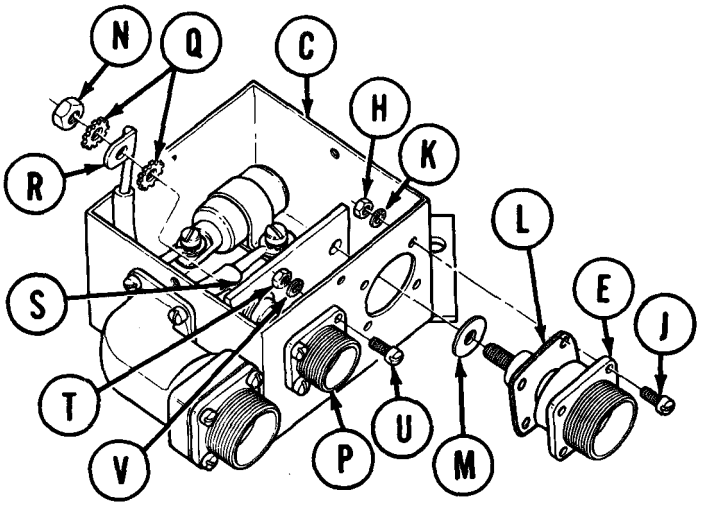
TA249085

INTERCONNECTING BOX ASSEMBLY REPAIR (Sheet 2 of 8)

5. Holding nuts (H) with 11/32 inch wrench, use screwdriver to remove four screws (J), lockwashers (K), and nuts (H).

6. Remove receptacle assembly (E) and gasket (L) from box assembly (C).

7. Remove flat washer (M) from receptacle assembly (E).



8. Using 7/16 inch wrench, remove nut (N) from receptacle assembly (P).

9. Remove two lockwashers (Q), electrical terminal (R), and bus bar (S) from receptacle assembly (P).

10. Holding nuts (T) with 5/16 inch wrench, use screwdriver to remove four screws (U), lockwashers (V), and nuts (T).

11. Remove receptacle assembly (P) from box assembly (C).

Go on to Sheet 3

TA249086

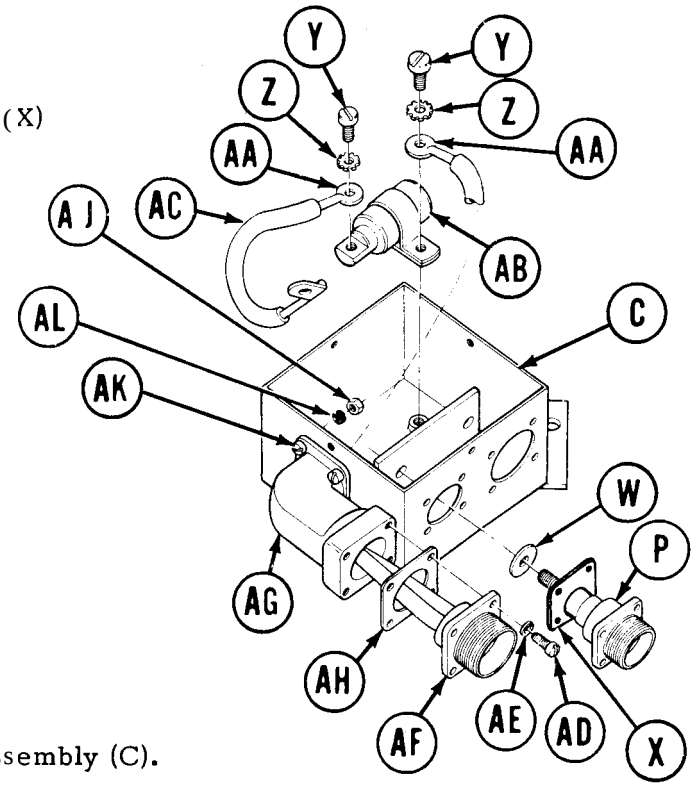
INTERCONNECTING BOX ASSEMBLY REPAIR (Sheet 3 of 8)

12. Remove flat washer (W) and gasket (X) from receptacle assembly (P).

13. Using screwdriver, remove two screws (Y) and lockwashers (Z) securing two electrical terminals (AA) to capacitor (AB).

14. Remove two electrical terminals (AA) from capacitor (AB).

15. Remove capacitor (AB) from box assembly (C).



16. Remove lead assembly (AC) from box assembly (C).

17. Using screwdriver, remove four screws (AD) and lockwashers (AE) securing lead assembly (AF) to elbow (AG).

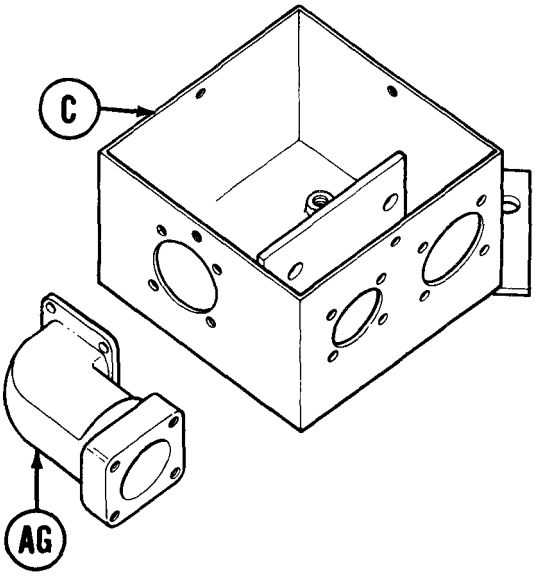
18. Remove lead assembly (AF) and gasket (AH) from elbow (AG).

19. Holding nuts (AJ) with 11/32 inch wrench, use screwdriver to remove four screws (AK), lockwashers (AL), and nuts (AJ).

TA249087

INTERCONNECTING BOX ASSEMBLY REPAIR (Sheet 4 of 8)

20. Remove elbow (AG) from box assembly (C).



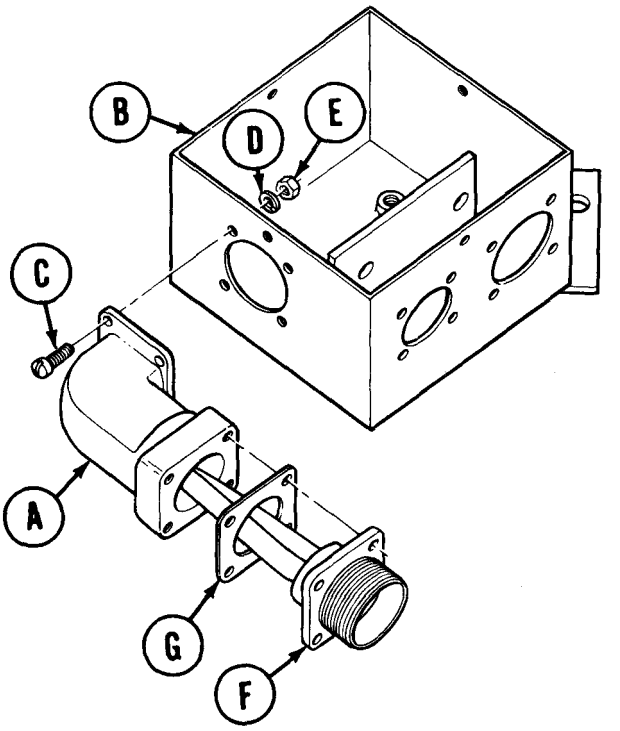
ASSEMBLY:

1. Place elbow (A) in position on box assembly (B).

2. Using fingers, install four screws (C), lockwashers (D), and nuts (E) securing elbow (A) to box assembly (B).

3. Holding nuts (E) with 11/32 inch wrench, use screwdriver to tighten four screws (C).

4. Place lead assembly (F) and gasket (G) in position on elbow (A).



Go on to Sheet 5

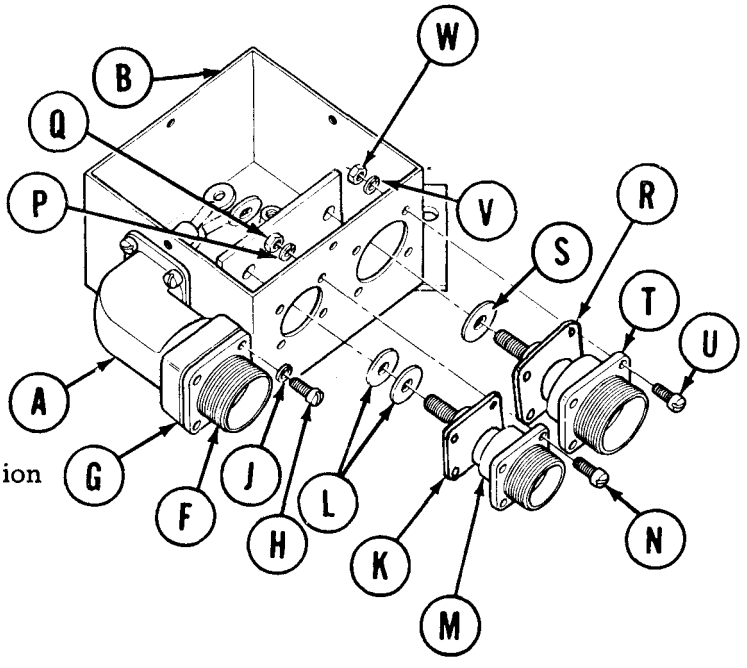
TA249088

INTERCONNECTING BOX ASSEMBLY REPAIR (Sheet 5 of 8)

5. Using screwdriver, install four screws (H) and lockwashers (J) securing lead assembly (F) and gasket (G) to elbow (A).

6. Place gasket (K) and flat washer (L) on receptacle assembly (M).

Place receptacle assembly (M) in position on box assembly (B).



8. Using fingers, install four screws (N), lockwashers (P), and nuts (Q) securing receptacle assembly (M) to box assembly (B).

9. Holding nuts (Q) with 5/16 inch wrench, use screwdriver to tighten four screws (N).

10. Place gasket (R) and flat washer (S) on receptacle assembly (T).

11. Place receptacle assembly (T) in position on box assembly (B).

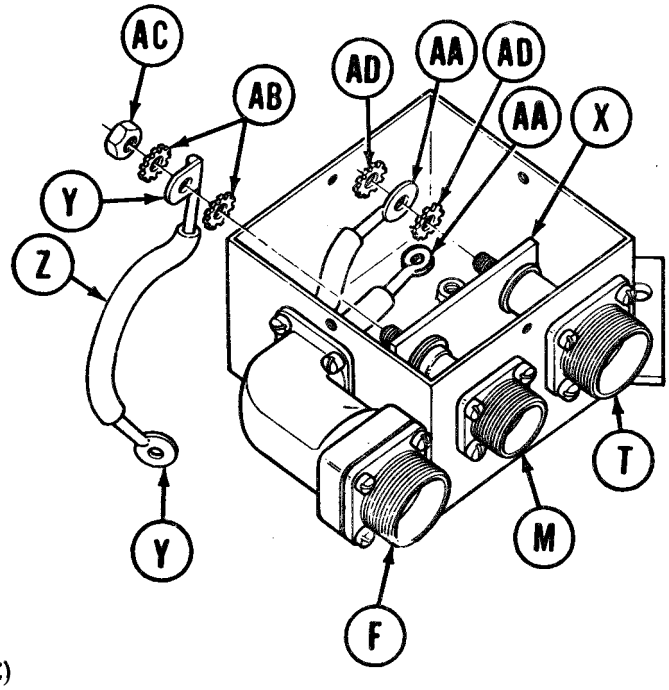
12. Using fingers, install four screws (U), lockwashers (V), and nuts (W) securing receptacle assembly (T) to box assembly (B).

13. Holding nuts (W) with 11/32 inch wrench, use screwdriver to tighten four screws (U).

Go on to Sheet 6

TA249089

INTERCONNECTING BOX ASSEMBLY REPAIR (Sheet 6 of 8)



14. Coat bus bar (X) with Glyptol sealer.

15. Place bus bar (X) in position on two receptacle assemblies (M) and (T).

16. Coat two terminal: (Y) of lead assembly (Z) and two terminals (AA) of lead assembly (F) with Glyptol sealer.

17. Place two lockwashers (AB) and curved terminal (Y) of lead -assembly (Z) in position on receptacle assembly (M).

18. Using 7/16 inch wrench, install nut (AC) securing lead assembly (Z) to receptacle assembly (M).

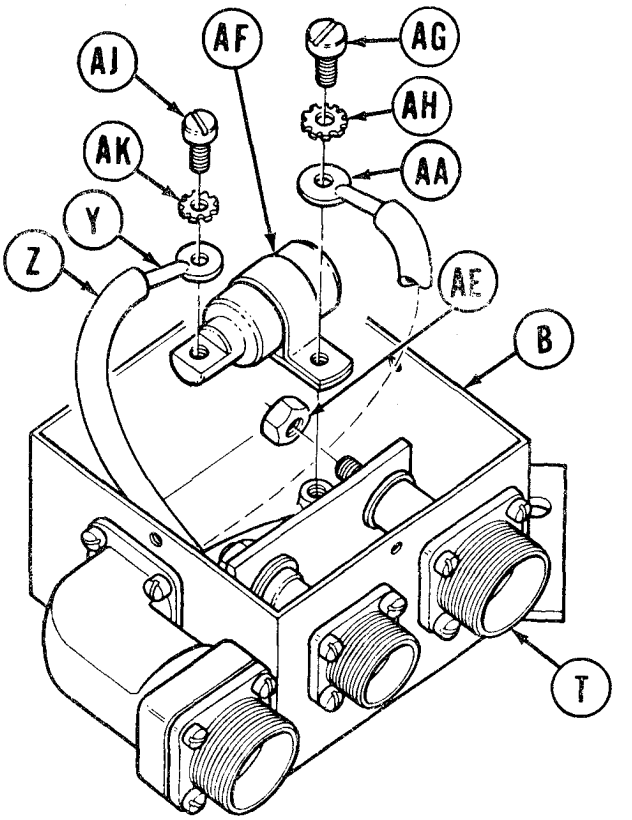
19. Place two lockwashers (AD) and terminal (AA) of lead assembly (F) in position on receptacle assembly (T).

Go on to Sheet 7

TA249090

INTERCONNECTING BOX ASSEMLBY REPAIR (Sheet 7 of 8)

20. Using 5/8 inch wrench, install nut (AE) on rceptacle assembly (T).



21. Place terminal (AA) in position on capacitor (AF).

22. Using screwdriver, install screw (AG) and lockwasher (AH) securing terminal (AA) to capacitor (AF).

23. Place terminal (Y) of lead assembly (Z) in position on capacitor (AF).

24. Using screwdriver, install screw (AJ) and lockwasher (AK) securing terminal (Y) to capacitor (AF).

Go on to Sheet 8

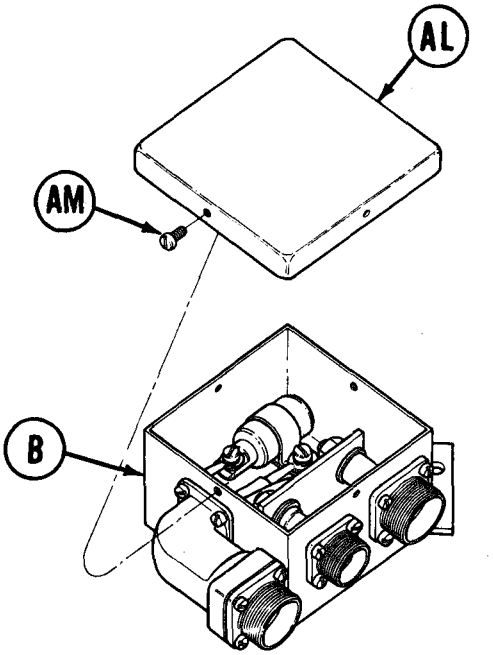
TA249091

INTERCONNECTING BOX ASSEMBLY REPAIR (Sheet 8 of 8)

25. Place cover (AL) in position on box assembly (B).

26. Using screwdriver, install four tapping-thread screws (AM) securing cover (AL) to box assembly (B).

27. Install box assembly in vehicle (page 10-143).



End of Task

TA249092

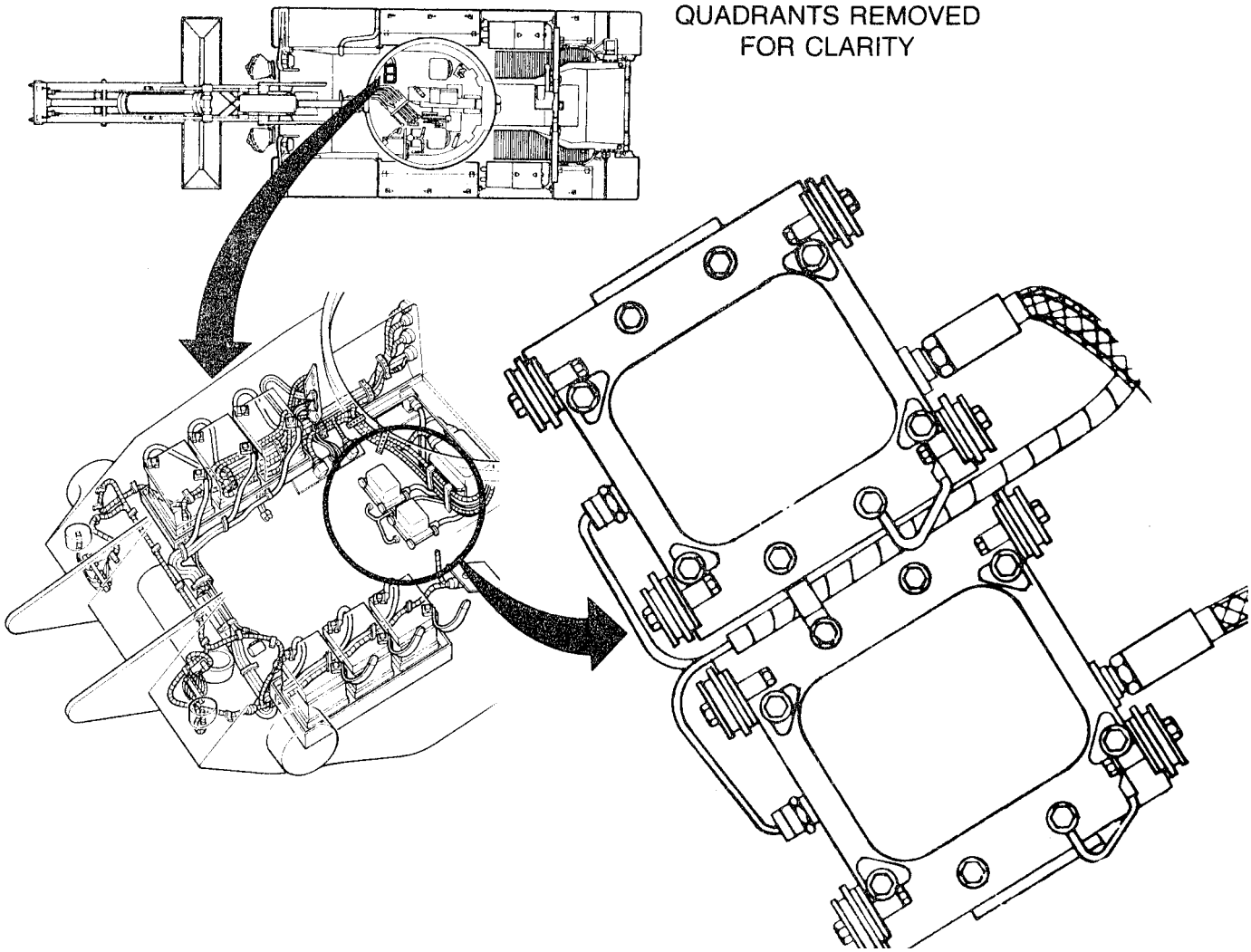
HIGH VOLTAGE IR POWER SUPPLY AND SHOCK MOUNT ASSEMBLY REPLACEMENT
(Sheet 1 of 6)

PROCEDURE INDEX

TOOLS:
- 1/4 in. open end wrench
- 7/16 in. socket with 1/2 in. drive
- 1/2 in. socket with 1/2 in. drive
- 5 in. extension with 1/2 in. drive
- Ratchet with 1/2 in. drive
- 7/16 in. open end wrench
- 7/8 in. open end wrench
- 1 in. open end wrench
- Flat-tip screwdriver

PRELIMINARY PROCEDURE: Set MASTER BATTERY switch to OFF.
Remove commander's access plate (page 17-9)

SUPPLIES: lockwashers (8 required)



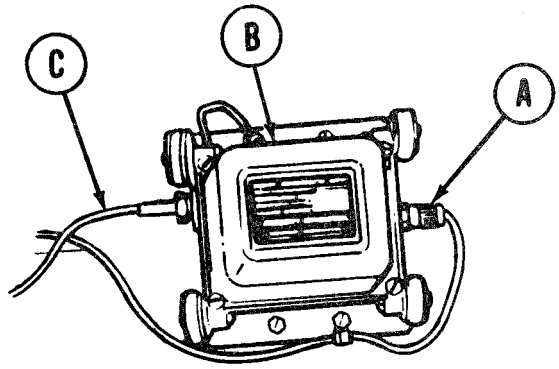
Go on to Sheet 2

TA249093

HIGH VOLTAGE IR POWER SUPPLY AND SHOCK MOUNT ASSEMBLY REPLACEMENT

(Sheet 2 of 6)

REMOVAL:

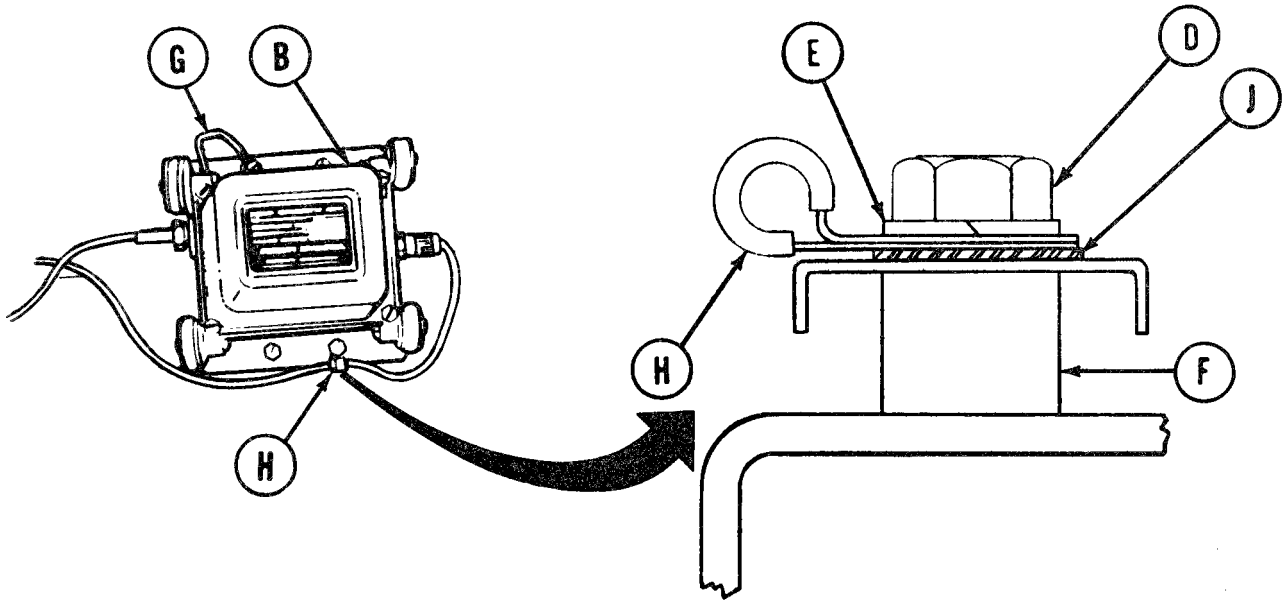


1. Using 7/8 inch wrench, disconnect cable (A) from power supply (B).

2. Using 1 inch wrench, disconnect cable (C) from power supply (B).

3. Using 1/2 inch socket and extension, remove four screws (D) and lockwashers (E) securing power supply (B) to mounting pad (F).

4. Remove ground strap and lockwasher (G).



5. Remove clamp (H) and lockwasher (J).

6. Remove power supply (B) from mounting pads (F).

Go on to Sheet 3

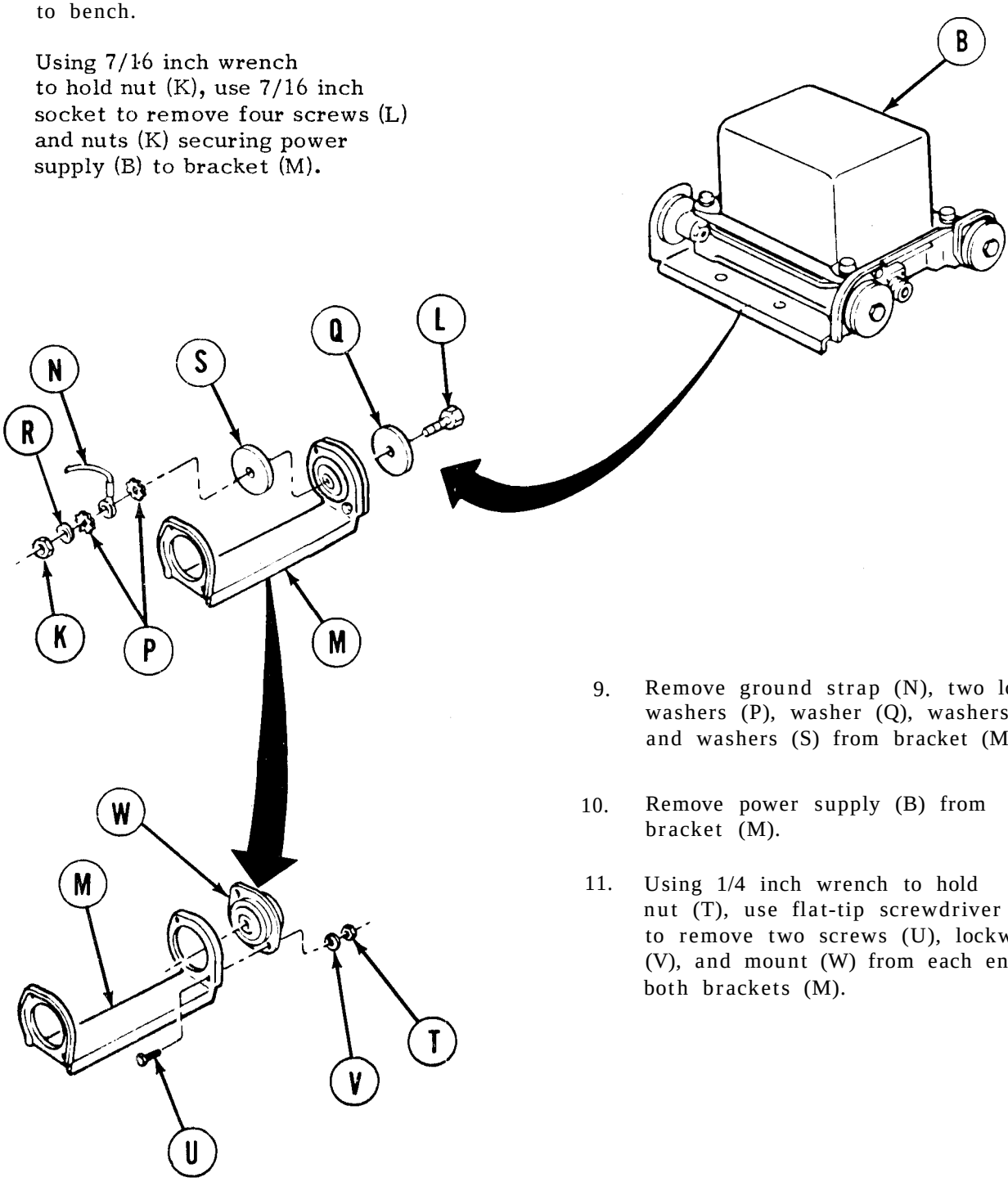
TA249094

HIGH VOLTAGE IR POWER SUPPLY AND SHOCK MOUNT ASSEMBLY REPLACEMENT

(Sheet 3 of 6)

7. Remove power supply (B) from vehicle to bench.

8. Using 7/16 inch wrench to hold nut (K), use 7/16 inch socket to remove four screws (L) and nuts (K) securing power supply (B) to bracket (M).



9. Remove ground strap (N), two lockwashers (P), washer (Q), washers (R), and washers (S) from bracket (M).

10. Remove power supply (B) from bracket (M).

11. Using 1/4 inch wrench to hold nut (T), use flat-tip screwdriver to remove two screws (U), lockwashers (V), and mount (W) from each end of both brackets (M).

Go on to Sheet 4

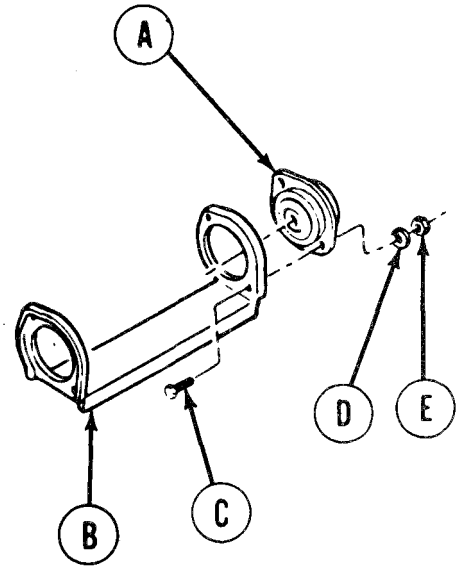
TA249095

HIGH VOLTAGE IR POWER SUPPLY AND SHOCK MOUNT ASSEMBLY REPLACEMENT
(Sheet 4 of 6)

NOTE

Mounting hardware used to mount power supply to brackets is the same for three ends of brackets shown. Mounting hardware for hidden bracket is described in step 4 below.

INSTALLATION:



1. Position mount (A) on outside of bracket (B).
2. Insert two screws (C) through inside of bracket (B) and mount (A).
3. Install lockwashers (D), and nuts (E) onto screws (C).
4. Using 1/4 inch wrench to hold nut (E), use flat-tip screwdriver to tighten screw (C).
5. Using steps 1 through 4, install mounts (A) into each end of both brackets (B).

Go on to Sheet 5

TA249096

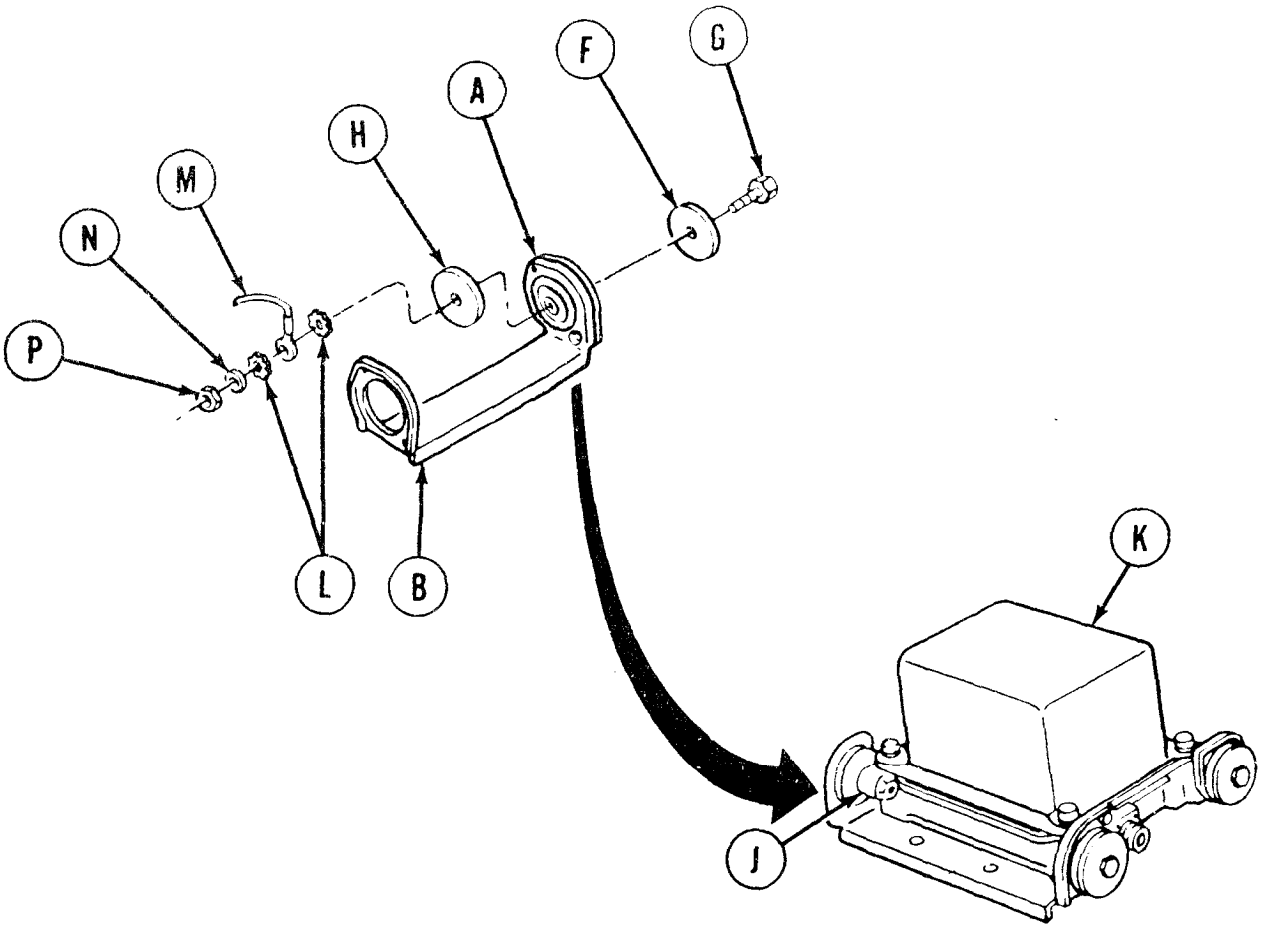
HIGH VOLTAGE IR POWER SUPPLY AND SHOCK MOUNT ASSEMBLY REPLACEMENT
(Sheet 5 of 6)

6. Position washer (F) on screw (G).

7. Install screw (G) through mount (A), washer (H), hole (J) in power supply (K), washer (L), ground strap (M), lockwasher (L), and washer (N).

8. Using 7/16 inch socket, tighten screw (G).

9. Using 7/16 inch socket to hold screw (G), use 7/16 inch wrench to tighten nut (P).



10. Using steps 6 through 9, except omitting lockwasher (L) and ground strap (M), install power supply (K) onto two brackets (B).

Go on to Sheet 6

TA249097

HIGH VOLTAGE IR POWER SUPPLY AND SHOCK MOUNT ASSEMBLY REPLACEMENT

(Sheet 6 of 6)

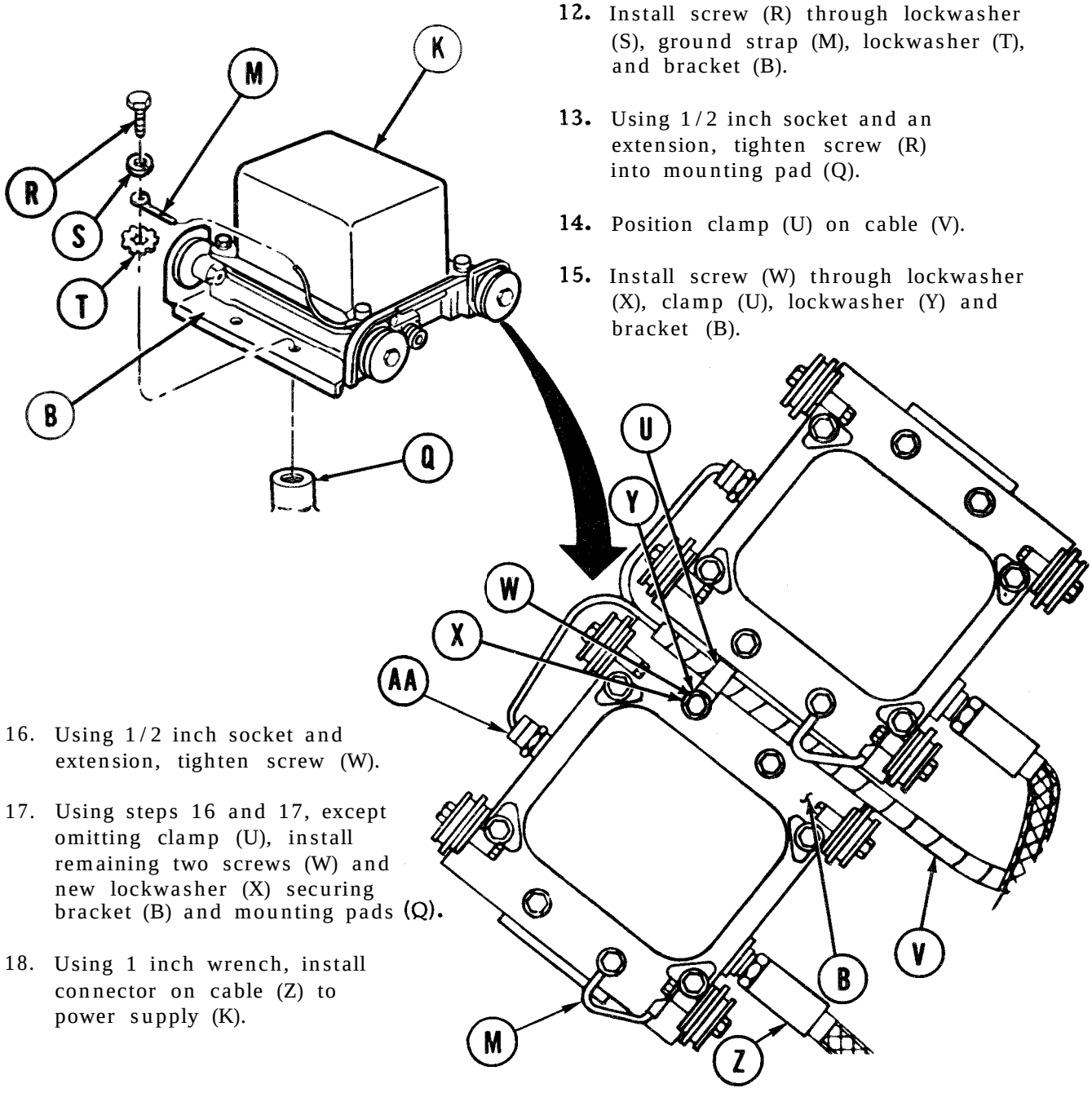
11. Position assembled power supply (K) onto mounting pad (Q) inside vehicle.

12. Install screw (R) through lockwasher (S), ground strap (M), lockwasher (T), and bracket (B).

13. Using 1/2 inch socket and an extension, tighten screw (R) into mounting pad (Q).

14. Position clamp (U) on cable (V).

15. Install screw (W) through lockwasher (X), clamp (U), lockwasher (Y) and bracket (B).



16. Using 1/2 inch socket and extension, tighten screw (W).

17. Using steps 16 and 17, except omitting clamp (U), install remaining two screws (W) and new lockwasher (X) securing bracket (B) and mounting pads (Q).

18. Using 1 inch wrench, install connector on cable (Z) to power supply (K).

19. Using 7/8 inch wrench, install connector on cable (AA) to power supply (K).

20. Install access plate (page 17-9).

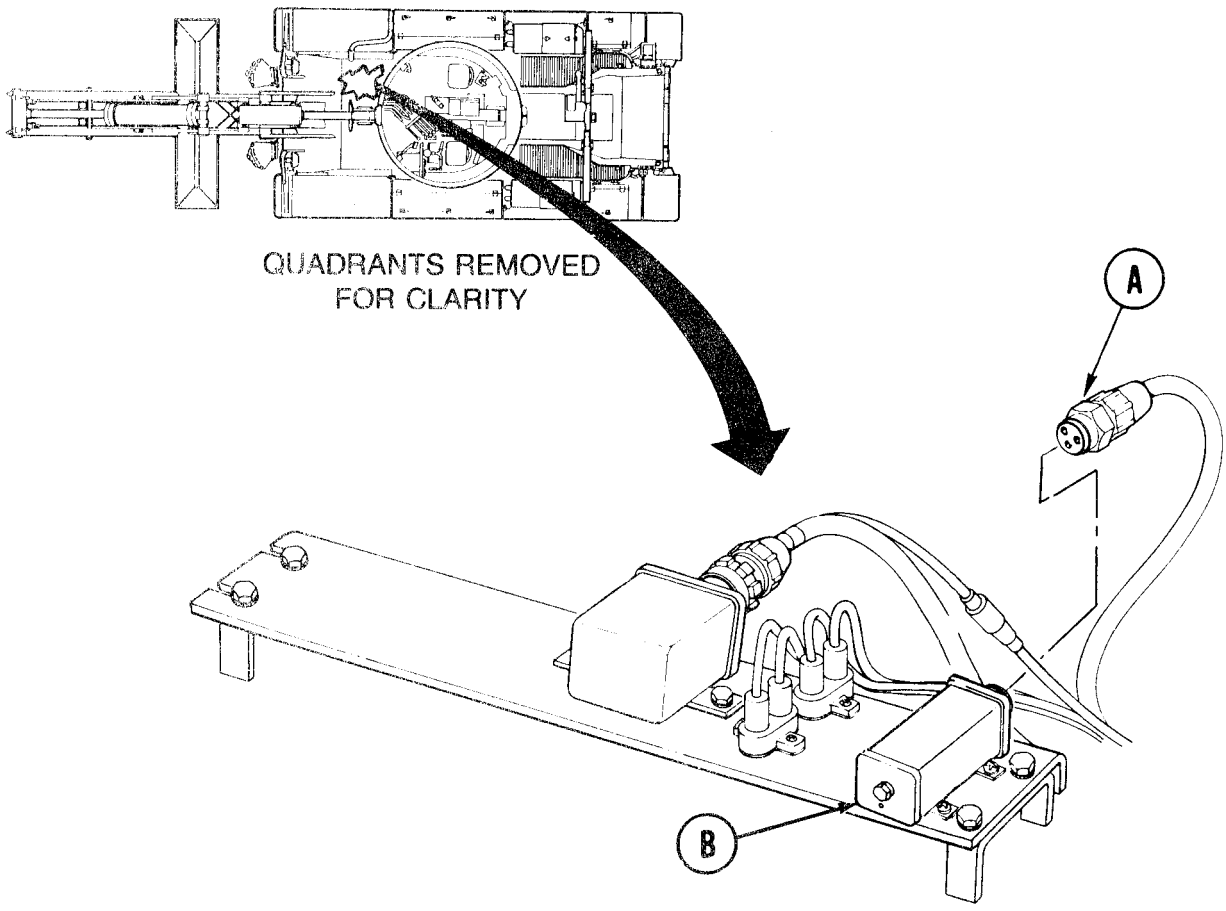
End of Task

TA249098

FIRE EXTINGUISHER SOLENOID RELAY REPLACEMENT (Sheet 1 of 2)

TOOLS: 10 in. adjustable wrench
Cross-tip screwdriver
SUPPLIES: Lockwashers (4 required)
REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Remove access plate from floor at commander's station (page 17-9)



REMOVAL:

1. Using wrench, disconnect electrical connector (A) from fire extinguisher solenoid relay (B).

Go on to Sheet 2

TA249099

FIRE EXTINGUISHER SOLENOID RELAY REPLACEMENT (Sheet 2 of 2)

2. Using screwdriver, remove four screws (C) and lockwashers (D) securing fire extinguisher solenoid relay (B) to mounting plate.

3. Remove fire extinguisher solenoid relay (B) from vehicle.

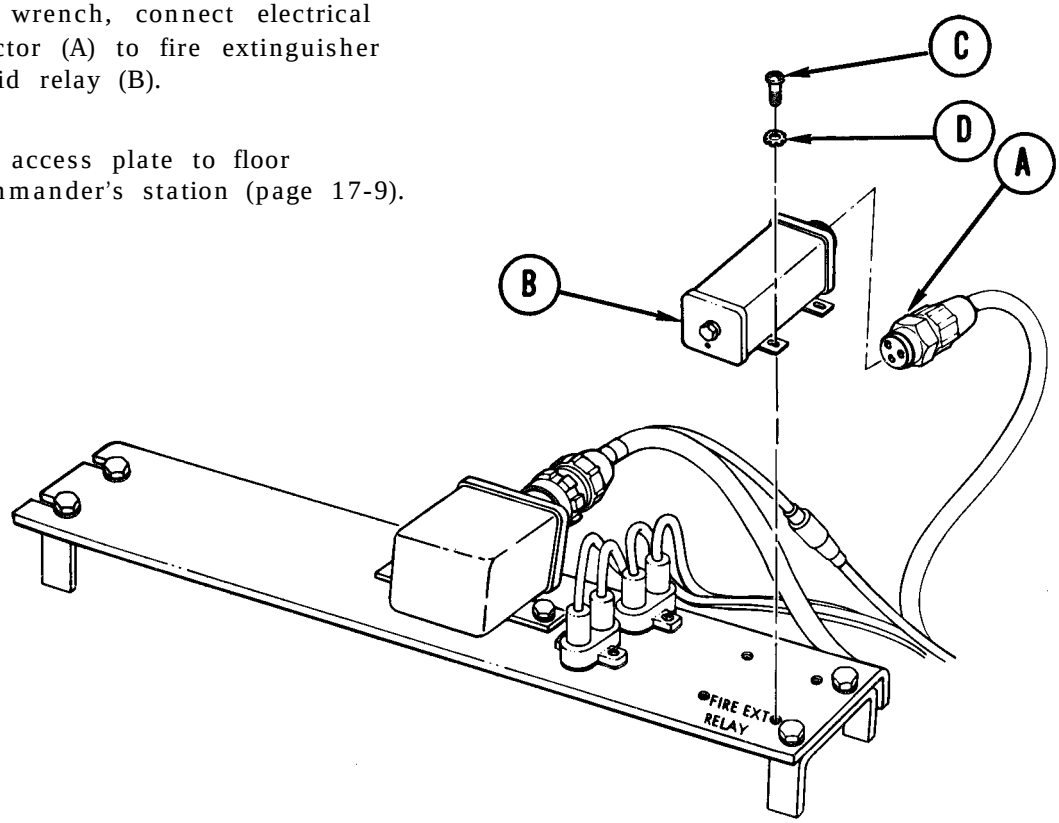
INSTALLATION:

1. Position fire extinguisher solenoid relay (B) on mounting plate

2. Using screwdriver, install four screws (C) and lockwashers (D) securing fire extinguisher solenoid relay (B) to mounting plate.

3. Using wrench, connect electrical connector (A) to fire extinguisher solenoid relay (B).

4. Install access plate to floor at commander's station (page 17-9).



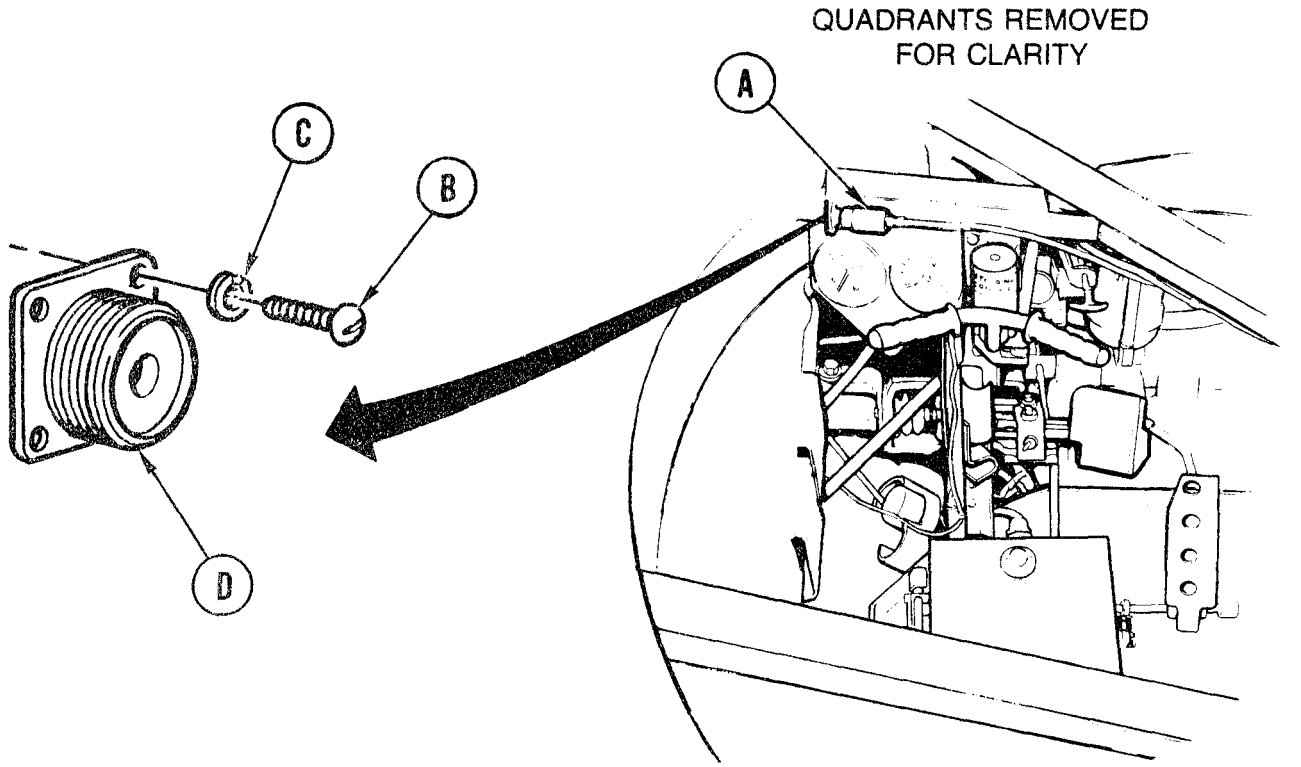
5. Check operation of fire extinguisher solenoid (TM 5-5420-202-10).

End of Task

TA249100

INFRARED STOWAGE RECEPTACLE ASSEMBLY REPLACEMENT (Sheet 1 of 1)

TOOLS: Flat-tip screwdriver
SUPPLIES: Lockwashers (4 required)
PRELIMINARY PROCEDURE: Turn MASTER BATTERY switch to OFF.



REMOVAL:

1. Remove electrical connector (A) by turning left.
2. Using screwdriver, remove four screws (B) and lockwashers (C).
3. Remove stowage receptacle assembly (D).

INSTALLATION:

1. Place stowage assembly (D) in position in vehicle.
2. Using screwdriver, install four screws (B) and lockwashers (C).
3. Install electrical connector (A) by turning right.

End of Task

TA249101

MASTER RELAY MOUNTING PLATE AND BRACKET REPLACEMENT (Sheet 1 of 2)

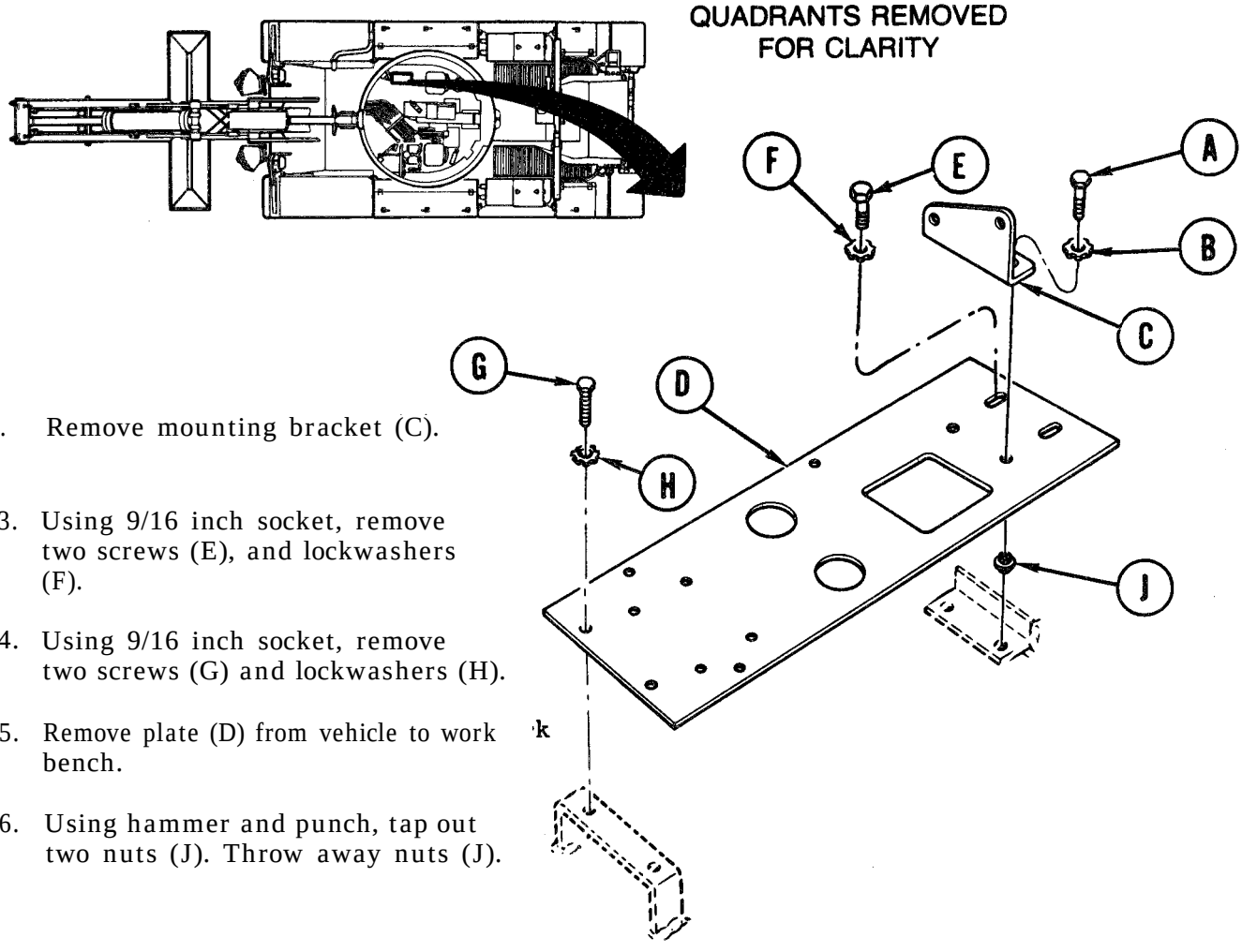
TOOLS: 9/16 in. socket with 1/2in. drive
1/2 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
1/4 in. drive punch
Hammer

SUPPLIES Nut (2 required)
Lockwashers (4 required)

PRELIMINARY PR0CEDURE: Remove master relay assembly (page 10-138)

REMOVAL:

1. Using 1/2 inch socket, remove two screws (A), and lockwashers (B) securing bracket (C) to plate (D).



2. Remove mounting bracket (C).

3. Using 9/16 inch socket, remove two screws (E), and lockwashers (F).

4. Using 9/16 inch socket, remove two screws (G) and lockwashers (H).

5. Remove plate (D) from vehicle to work bench.

6. Using hammer and punch, tap out two nuts (J). Throw away nuts (J).

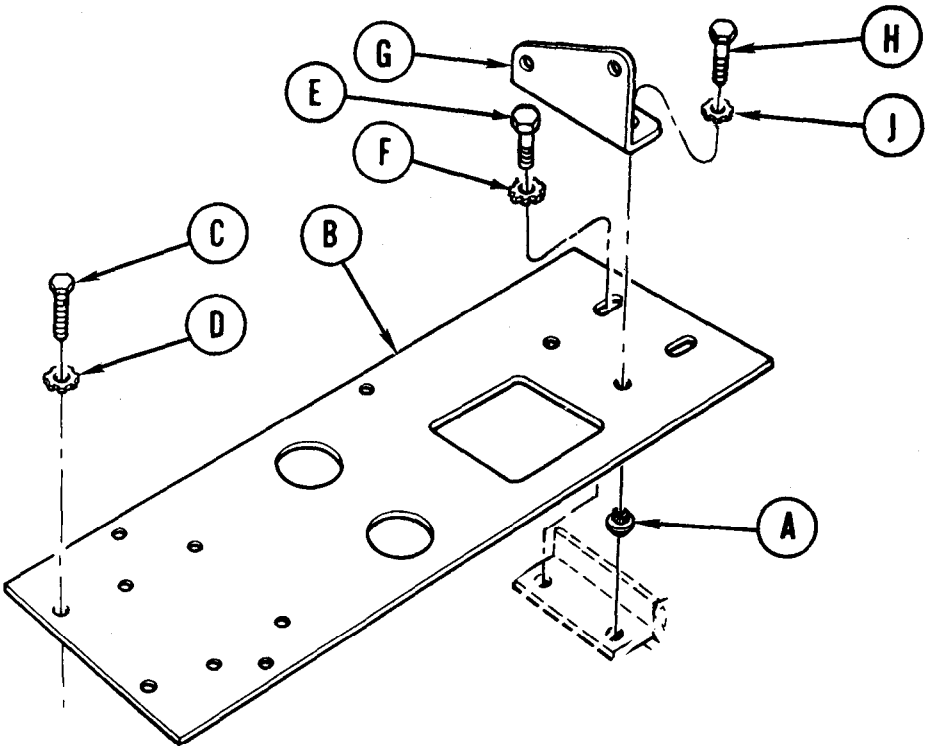
Go on to Sheet 2

TA249102

MASTER RELAY MOUNTING PLATE AND BRACKET REPLACEMENT (Sheet 2 of 2)

INSTALLATION:

1. Using hammer, tap two new nuts (A) into plate (B).
2. Place plate (B) in position on hull floor.
3. Using 9/16 inch socket, install two screws (C) and lockwashers (D) securing plate (B) to hull floor.
4. Using 9/16 inch socket, install two screws (E), and lockwashers (F), securing plate (B) to hull floor.
5. Place mounting bracket (G) in position on plate (B).
6. Using 1/2 inch socket, install two screws (H) and lockwashers (J) securing mounting bracket (J) to plate (B).



8. Install master relay assembly (page 10-139).

End of Task

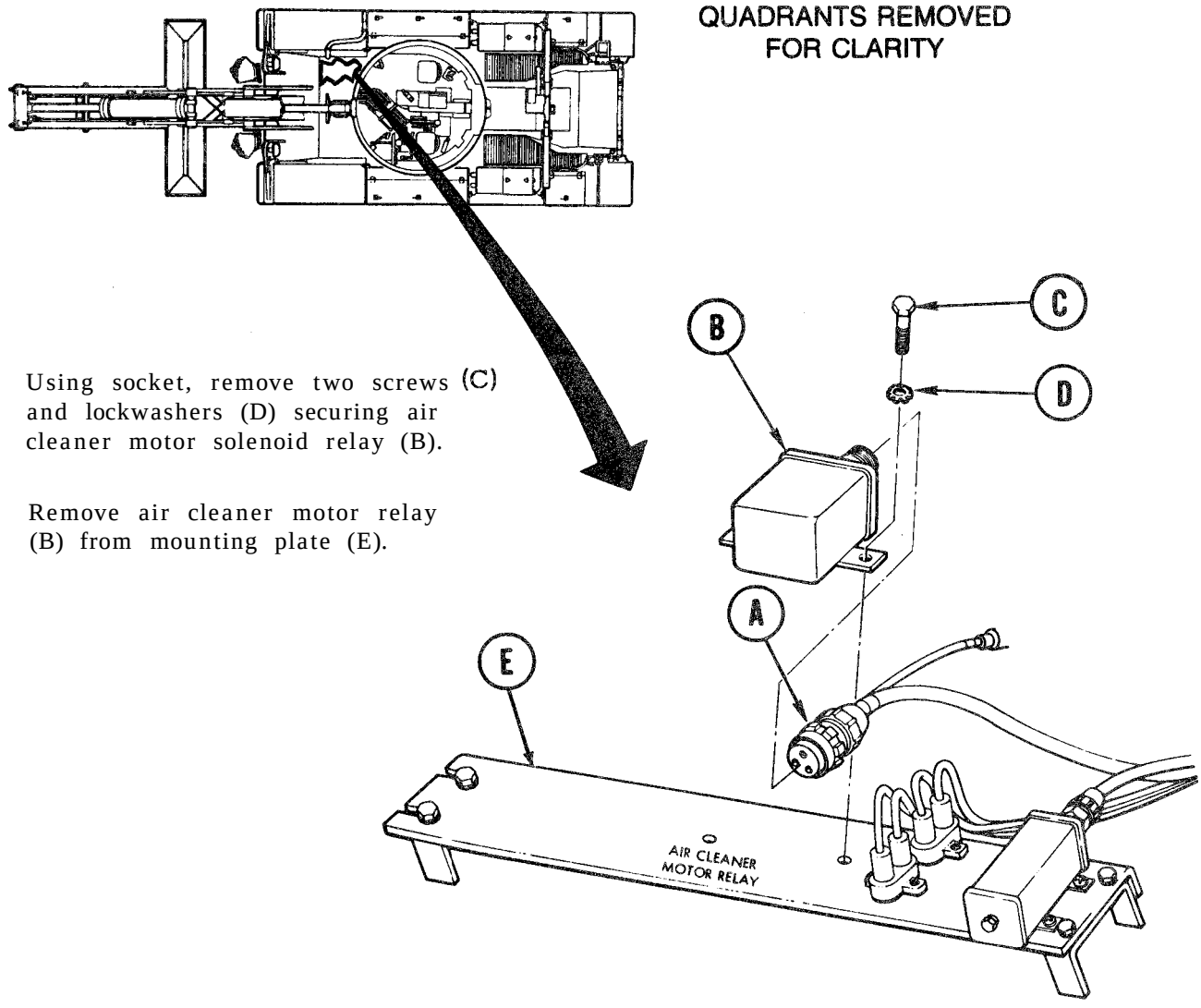
TA249103

AIR CLEANER MOTOR SOLENOID RELAY REPLACEMENT (Sheet 1 of 2)

TOOLS: Spanner wrench
3/8 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
SUPPLES: Lockwashers (2 required)
PRELIMINARY PROCEDURE: Remove access plate from floor at commander's station. (page 17-9)

REMOVAL:

1. Using spanner wrench, remove electrical connector (A) from air cleaner motor solenoid relay (B).



2. Using socket, remove two screws (C) and lockwashers (D) securing air cleaner motor solenoid relay (B).

3. Remove air cleaner motor relay (B) from mounting plate (E).

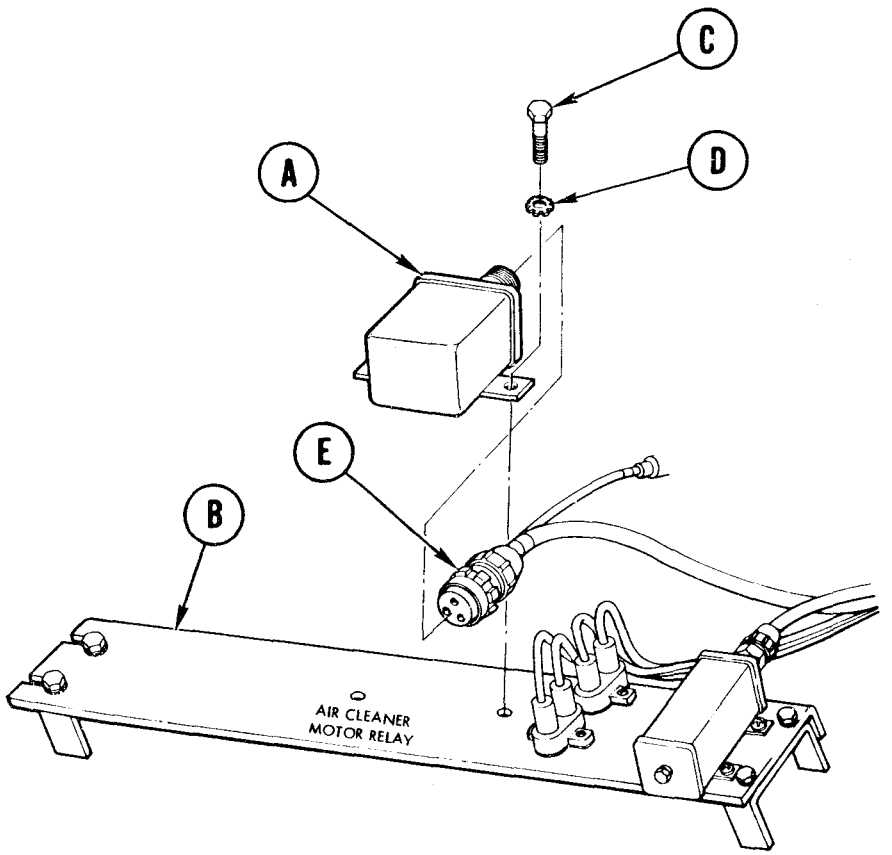
Go on to Sheet 2

TA249104

AIR CLEANER MOTOR SOLENOID RELAY REPLACEMENT (Sheet 2 of 2)

INSTALLATION:

1. Position air cleaner motor solenoid relay (A) on mounting plate (B).
2. Using socket, install two screws (C) and lockwashers (D) securing air cleaner motor solenoid relay (A) to mounting plate (B).
3. Using spanner wrench, install electrical connector (E) to air cleaner motor solenoid relay (A).
4. Install access plate at commander's station (page 17-9).



End of Task

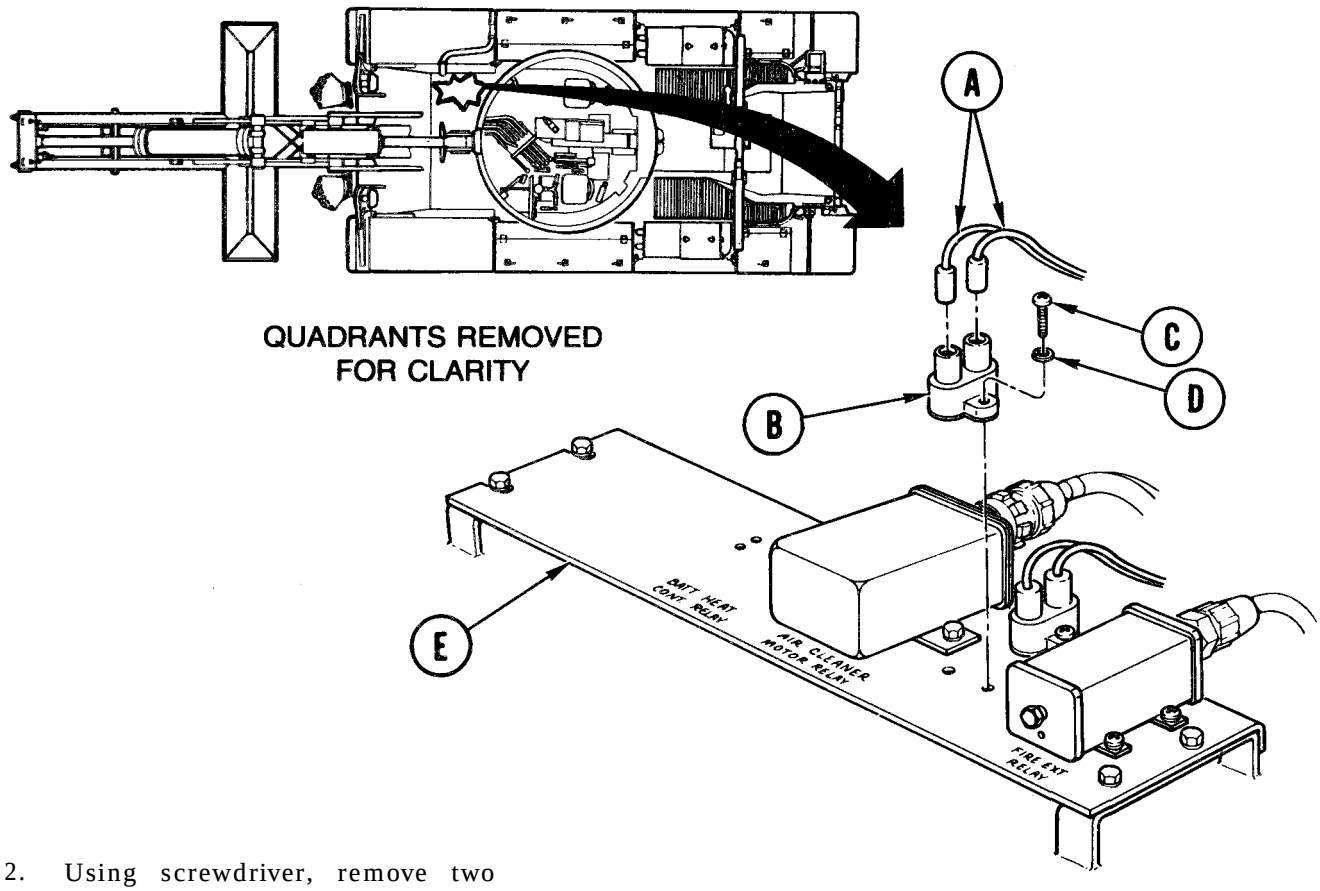
TA249105

FUEL SHUTOFF AND PERSONNEL HEATER CIRCUIT BREAKERS REPLACEMENT (Sheet 1 of 2)

TOOLS: 2 in. cross-tip screwdriver
SUPPLIES: Lockwashers (2 required)
PRELIMINARY PROCEDURE: Rmove access plate from floor at commander's station (page 17-9).

REMOVAL:

1. Disconnect electrical leads (A) from circuit breaker (B).



2. Using screwdriver, remove two screws (C) and lockwashers (D) securing circuit breaker (B) to mounting plate (E).

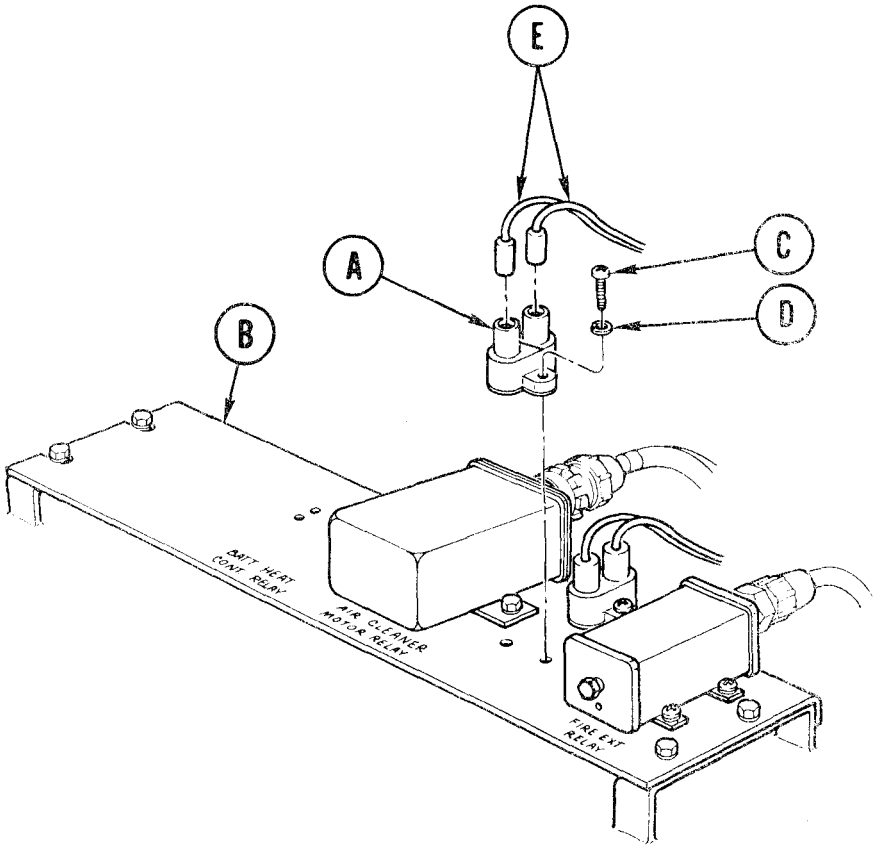
3. Remove circuit breaker (B) from mounting plate (E).

TA249106

FUEL SHUTOFF AND PERSONNEL HEATER CIRCUIT BREAKERS REPLACEMENT (Sheet 2 of 2)

INSTALLATION:

1. Position circuit breaker (A) to mounting plate (B).
2. Using screwdriver, install two screws (C) and lockwashers (D) securing circuit breaker (A) to mounting plate (B).
3. Install electrical leads (E) to circuit breaker (A) by pushing in.
4. Install access plate at commander's station (page 17-9).



End of Task

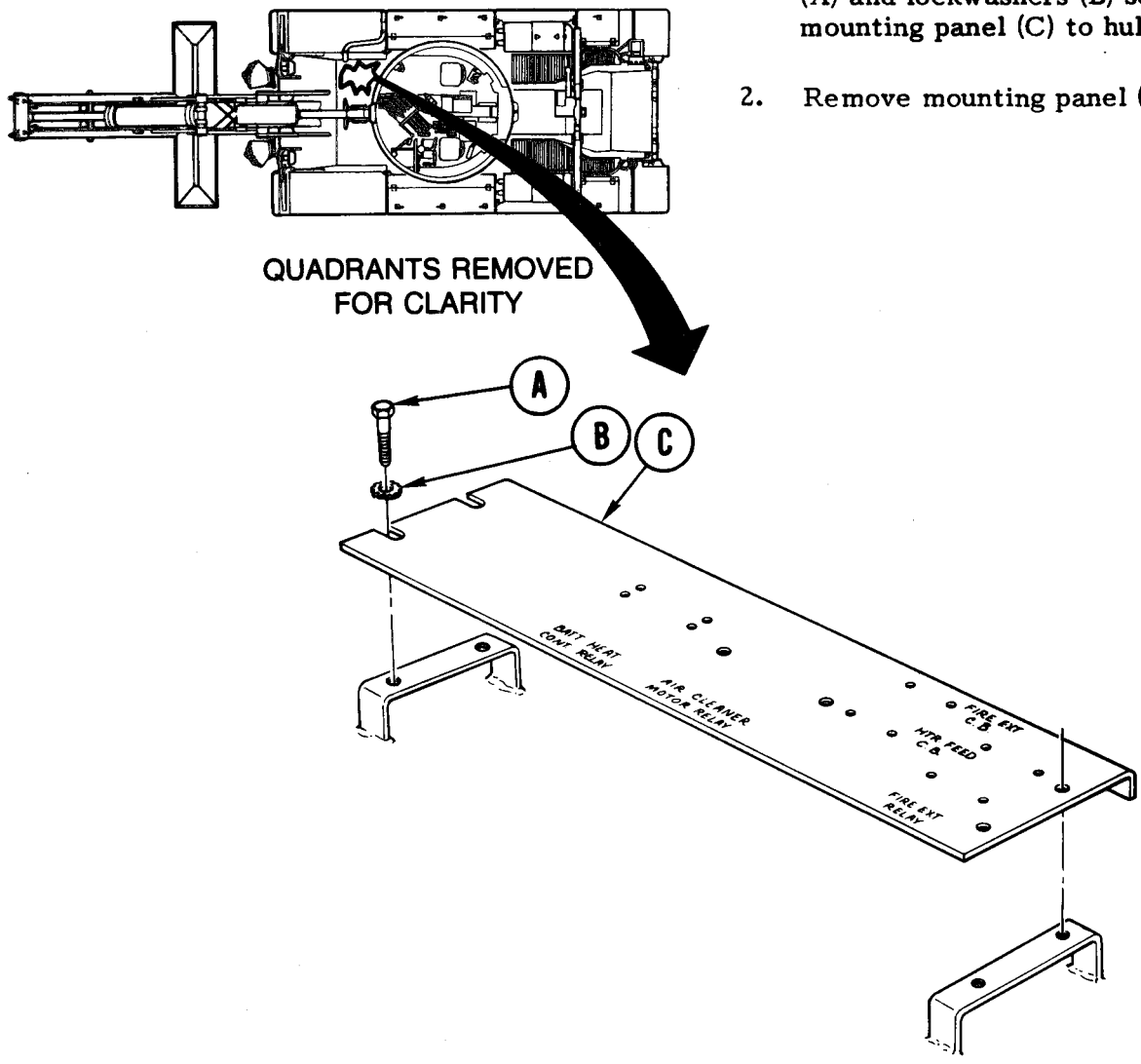
TA249107

RELAY AND CIRCUIT BREAKER MOUNTING PANEL REPLACEMENT (Sheet 1 of 2)

TOOLS: 9/16 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
SUPPLIES: Lockwashers (4 required)
PRELIMINARY PROCEDURES: Remove fire extinguisher relay (page 10-141)
Remove fire extinguisher solenoid relay (page 10-158)
Remove air cleaner motor solenoid relay (page 10-163)
Remove fuel shutoff and personnel heater solenoid relays (page 10-165)

REMOVAL:

1. Using socket, remove four screws (A) and lockwashers (B) securing mounting panel (C) to hull floor.
2. Remove mounting panel (C).



Go on to Sheet 2

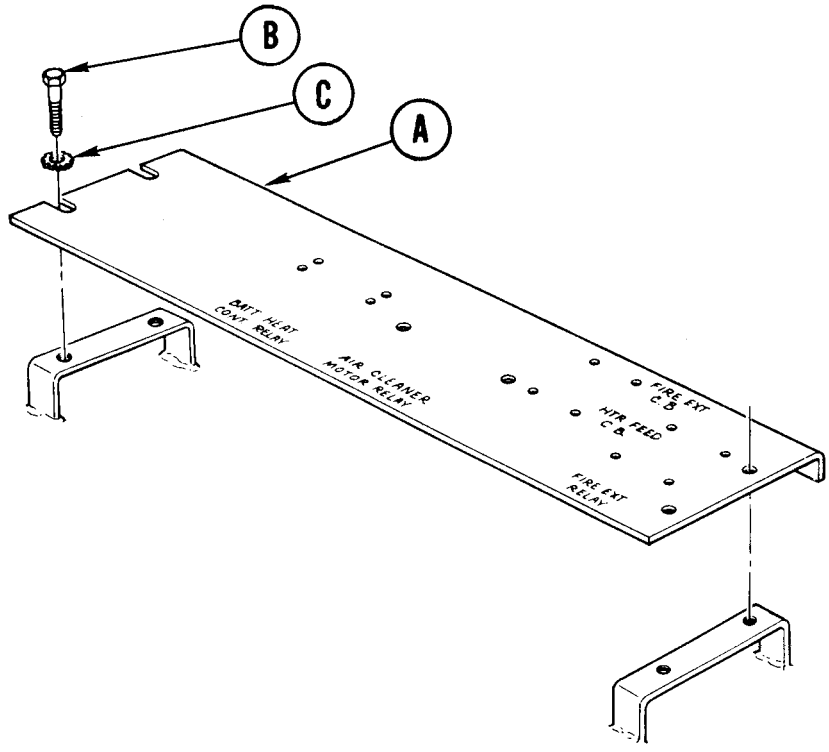
TA249108

RELAY AND CIRCUIT BREAKER MOUNTING PANEL REPLACEMENT (Sheet 2 of 2)

INSTALLATION:

1. Replace mounting panel (A) in position on hull floor.

2. Using socket, install four screws (B) and lockwashers (C) securing mounting panel (A) to hull floor.



3. Install fire extinguisher relay (10-142).

4. Install fire extinguisher solenoid relay (10-159).

5. Install air cleaner motor solenoid relay (10-164).

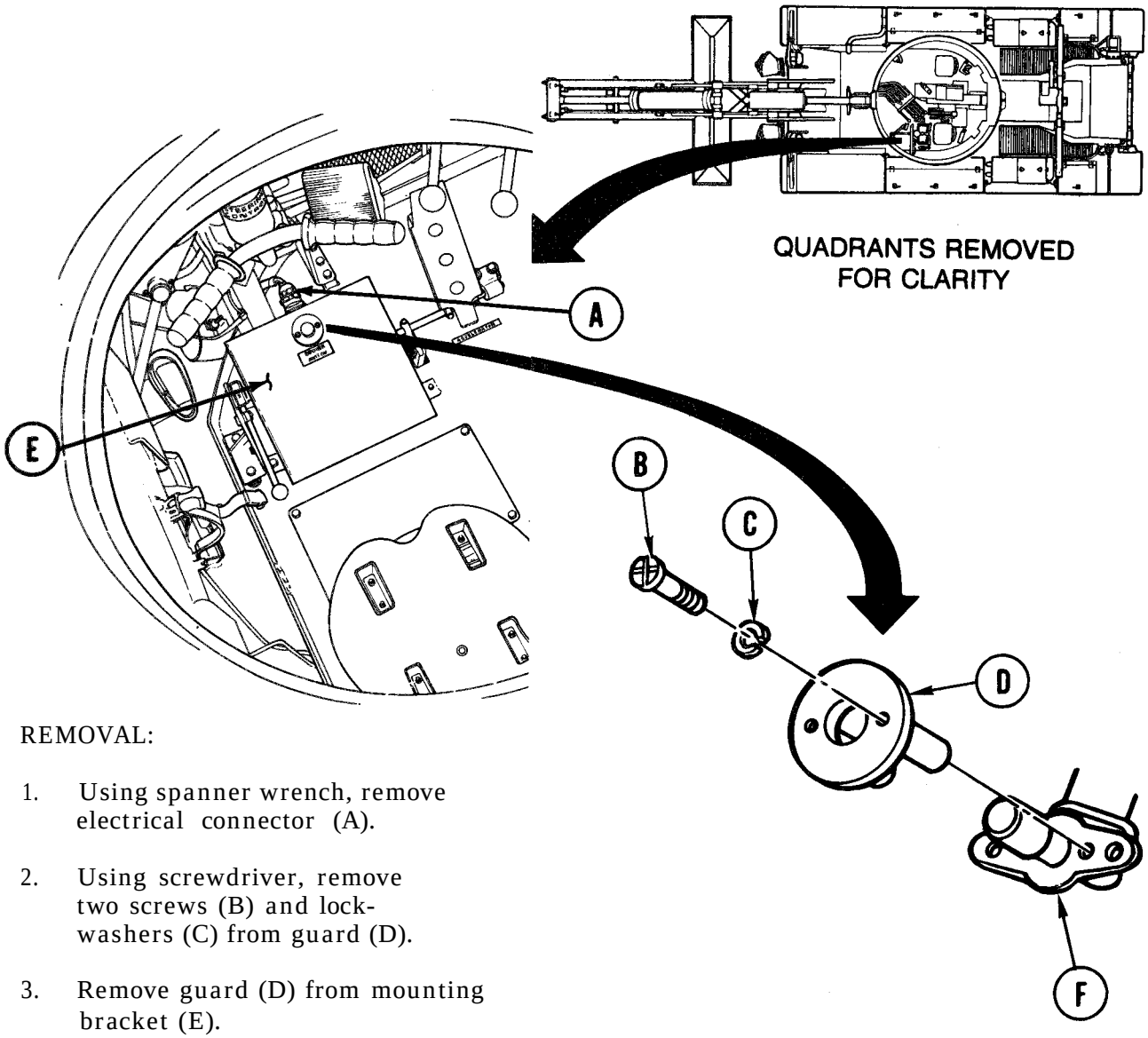
6. Install fuel shutoff and personnel heater solenoid relays (10-166).

End of Task

TA249109

HEADLIGHT BEAM SELECTOR SWITCH ASSEMBLY REPLACEMENT (Sheet 1 of 2)

TOOLS: Cross-tip screwdriver
Spanner wrench
SUPPLIES: Lockwashers (2 required)
REFERENCE: TM 5-5420-202-10



REMOVAL:

1. Using spanner wrench, remove electrical connector (A).
2. Using screwdriver, remove two screws (B) and lockwashers (C) from guard (D).
3. Remove guard (D) from mounting bracket (E).
4. Remove selector switch (F) from mounting bracket (E).

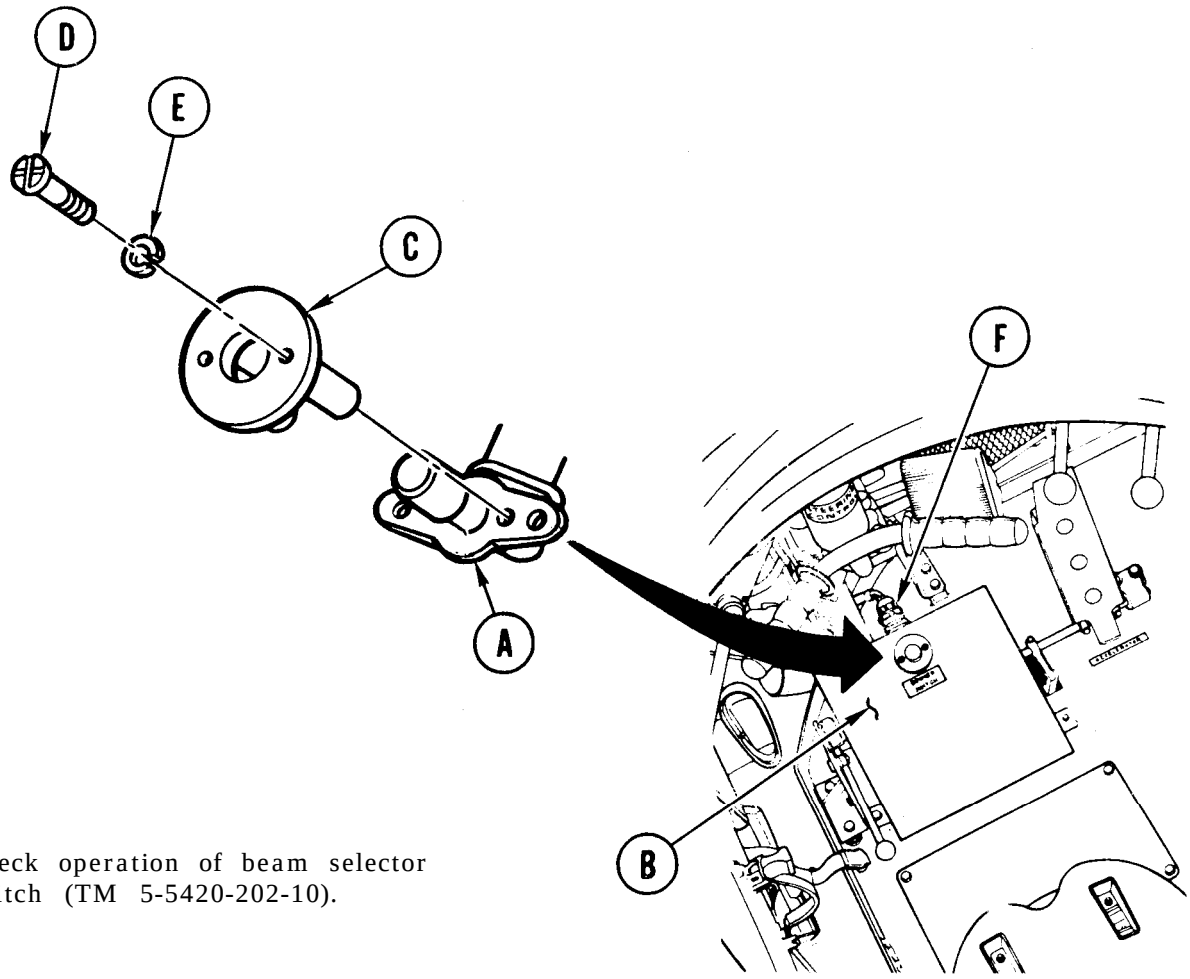
Go on to Sheet 2

TA249110

HEADLIGHT BEAM SELECTOR SWITCH ASSEMBLY REPLACEMENT (Sheet 2 of 2)

INSTALLATION:

1. Place selector switch (A) in position on mounting bracket (B).
2. Place guard (C) on selector switch (A).
3. Using screwdriver, install two screws (D) and lockwashers (E) securing guard (C) and selector switch (A) to mounting bracket (B).
4. Using spanner wrench, connect electrical connector (F) to selector switch (A).



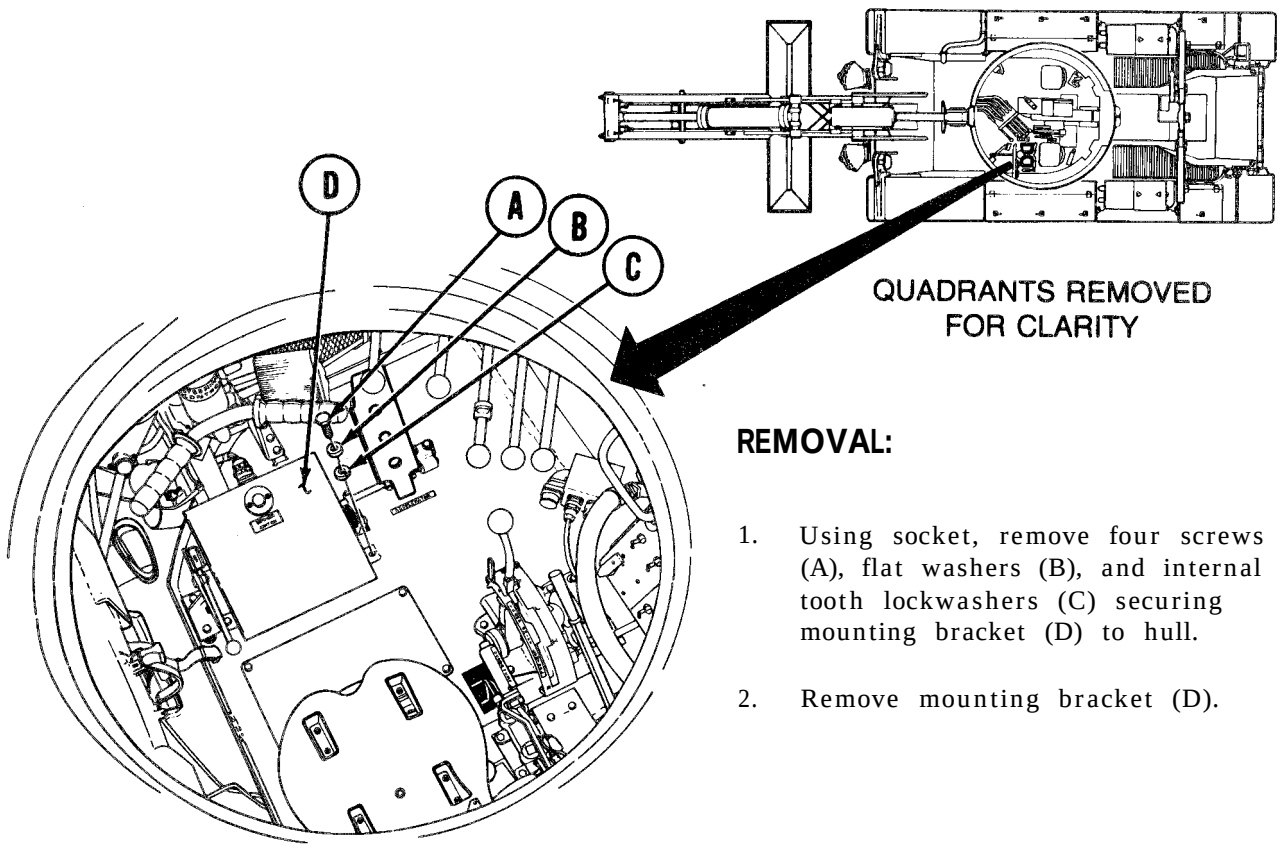
5. Check operation of beam selector switch (TM 5-5420-202-10).

End of Task

TA249111

HEADLIGHT BEAM SELECTOR SWITCH ASSEMBLY MOUNTING BRACKET REPLACEMENT (Sheet 1 of 1)

TOOLS: 7/16 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
SUPPLIES: Lockwashers (4 required)
PRELIMINARY PROCEDURE: Remove headlight beam selector switch assembly (page 10-169)



REMOVAL:

1. Using socket, remove four screws (A), flat washers (B), and internal tooth lockwashers (C) securing mounting bracket (D) to hull.
2. Remove mounting bracket (D).

INSTALLATION:

1. Place mounting bracket (D) in position on hull floor.
2. Using socket, install four screws (A), internal tooth lockwashers (C), and flat washers (B) securing mounting bracket to hull.
3. Install headlight beam selector switch assembly (page 10-170).

End of Task

TA249112

HEADLIGHT ASSEMBLY (LEFT AND RIGHT) REPLACEMENT (Sheet 1 of 1)

TOOLS: Hammer

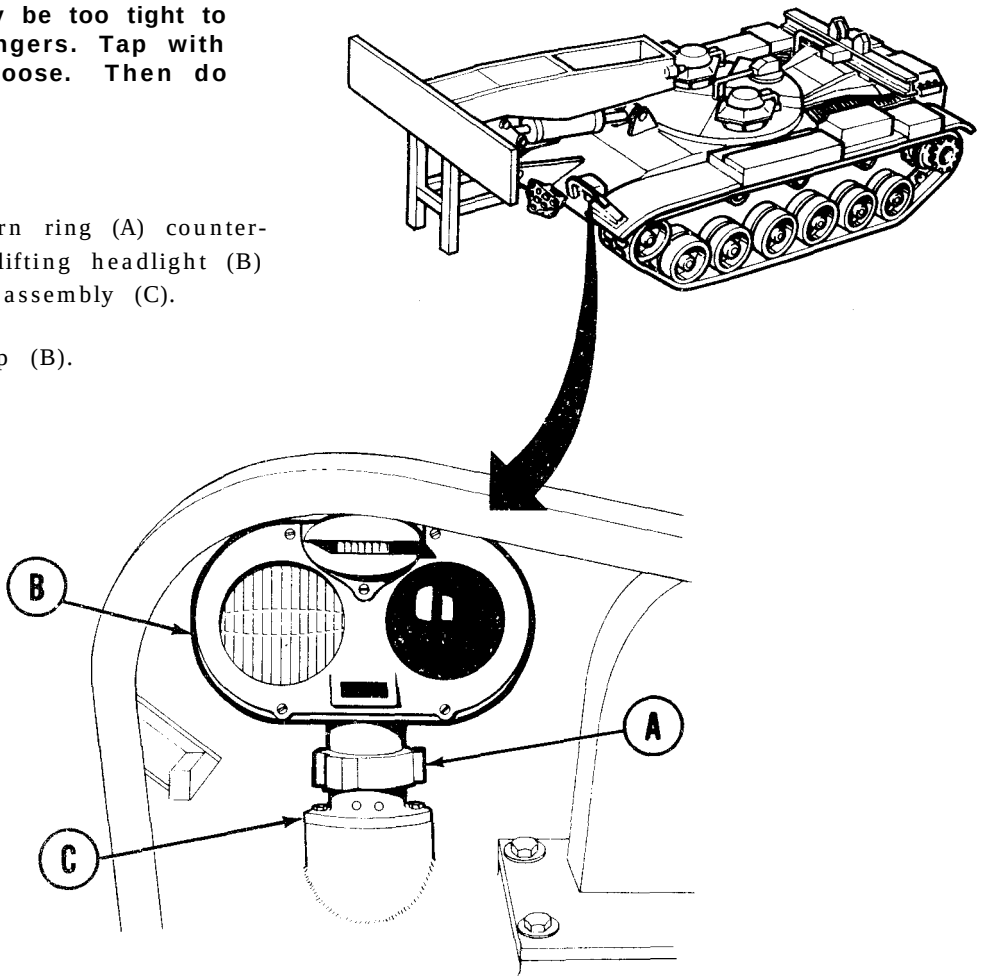
REFERENCES: TM 5-5420-202-10

NOTE

Some rings may be too tight to loosen with fingers. Tap with hammer until loose. Then do steps 1 and 2.

REMOVAL:

1. Using fingers, turn ring (A) counter-clockwise While lifting headlight (B) away from base assembly (C).
2. Remove headlamp (B).



INSTALLATION:

1. Place headlight (E) in position on base assembly (C).
2. Using fingers, turn ring (A) clockwise while pressing down on headlight (B). Tighten ring.
3. Check operation of headlight assembly (TM **5-5420-202-10).**

End of Task

TA249113

HEADLIGHT ASSEMBLY REPAIR (LEFT AND RIGHT) (Sheet 1 of 8)

PROCEDURE INDEX

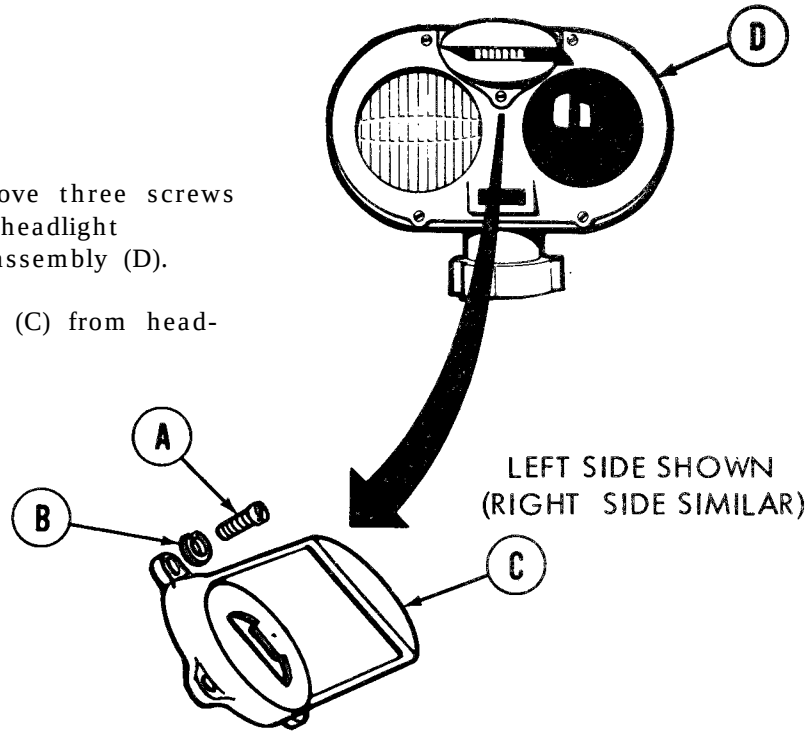
TOOLS: Flat-tip screwdriver
Cross-tip screwdriver

SUPPLIES: Adhesive (Item 2, Appendix D)
Crocus cloth (Item 14, Appendix D)
Steel wool (Item 56, Appendix D)
Soft cloth (Item 13, Appendix D)
Lockwashers (11 required)

PRELIMINARY PROCEDURES: Remove headlight assembly (page 10-172)

DISASSEMBLY:

1. Using cross-tip screwdriver remove three screws (A) and lockwashers (B), holding headlight blackout shield (C) to headlight assembly (D).
2. Remove headlight blackout shield (C) from headlight assembly (D).



Go on to Sheet 2

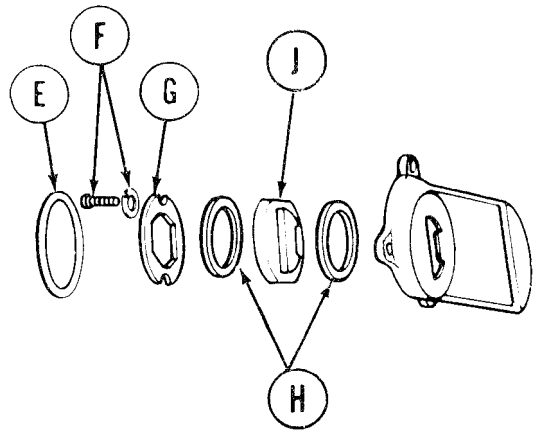
TA249114

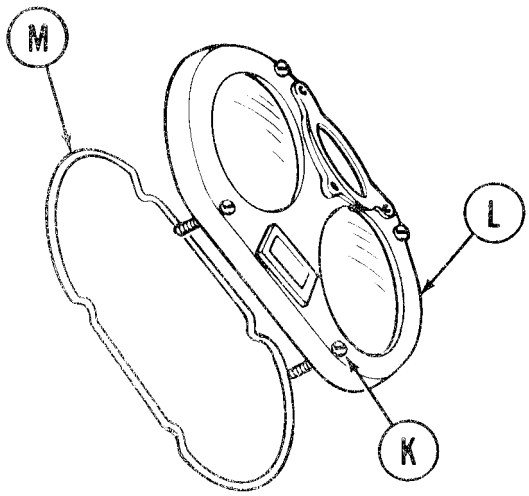
HEADLIGHT ASSEMBLY REPAIR (LEFT AND RIGHT) (Sheet 2 of 8)

3. Remove round rubber seal (E).

4. Using cross-tip screwdriver, remove two screws and lockwashers (F).

5. Using fingers, remove retainer (G), two rubber seals (H), and lens (J).





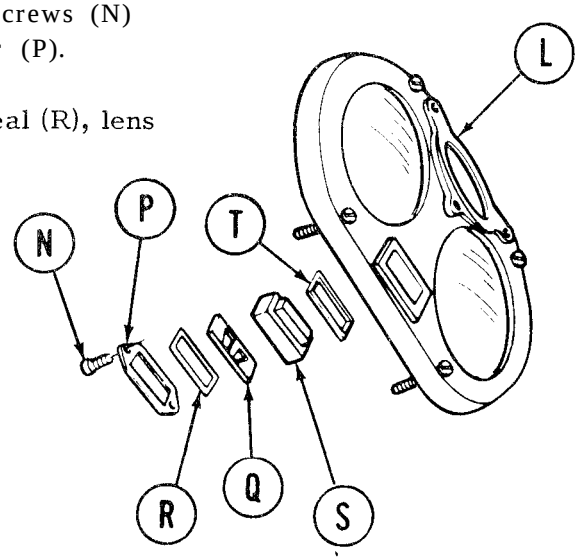
6. Using flat-tip screwdriver, loosen four captive screws (K).

7. Remove headlight cover (L).

8. Using fingers, remove seal (M).

9. Using **cross-tip** screwdriver remove two screws (N) with assembled washers. Remove retainer (P).

10. Using fingers, remove filter (Q), rubber seal (R), lens (S), and seal (T).



Go on to Sheet 3

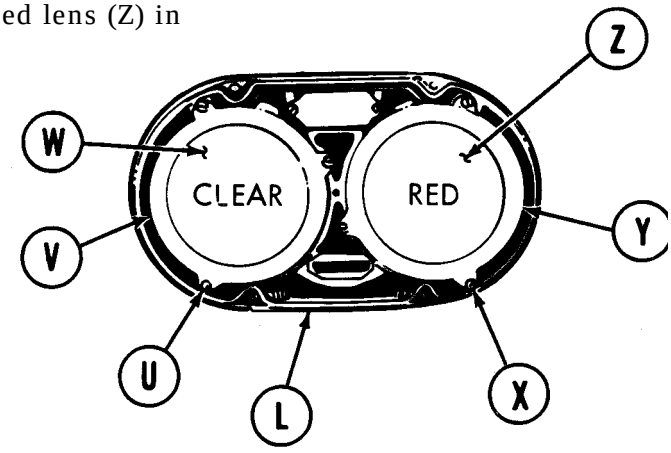
TA249115

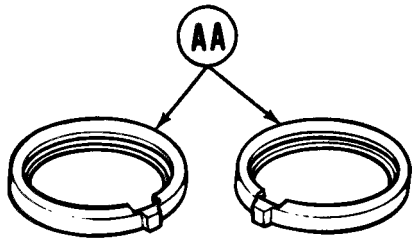
HEADLIGHT ASSEMBLY REPAIR (LEFT AND RIGHT) (Sheet 3 of 8)

11. Using cross-tip screwdriver, remove three screws and lockwashers (U) and retainer (V) holding clear headlight lens (W) in headlight cover (L).

12. Push out clear lens and seal (W) from headlight cover (L).

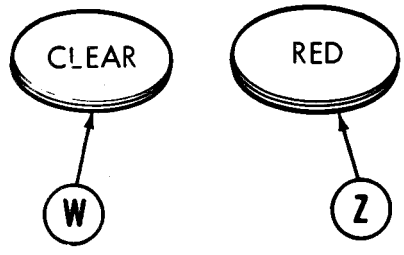
13. Using cross-tip screwdriver, remove three screws and lockwashers (X) and retainer (Y) holding red lens (Z) in headlight cover (L).





14. Push out red lens and seal (Z) in same manner as clear lens.

15. Using fingers, remove two seals (AA) from clear lens (W) and red lens (Z).



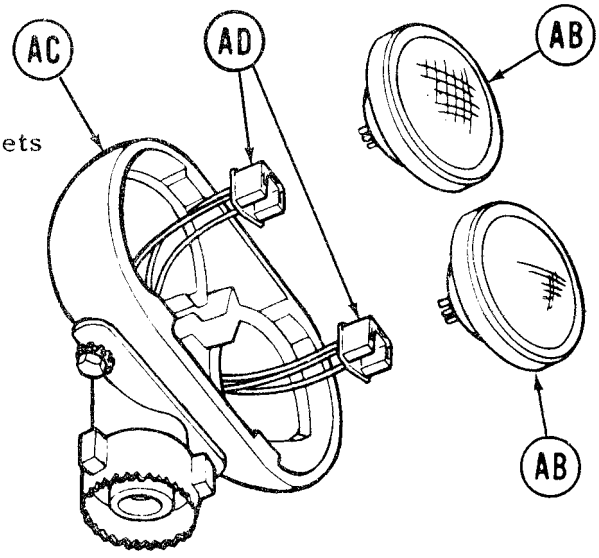
Go on to Sheet 4

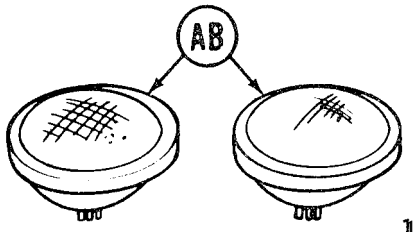
TA249116

HEADLIGHT ASSEMBLY REPAIR (LEFT AND RIGHT) (Sheet 4 of 8)

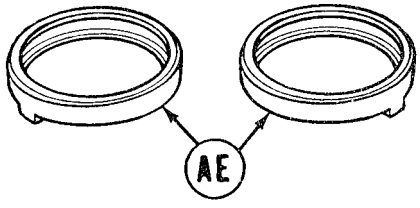
16. Using fingers, lift out two headlights and gaskets (AB) from headlight body (AC).

17. Unplug two headlights (AB) from electrical connectors (AD).

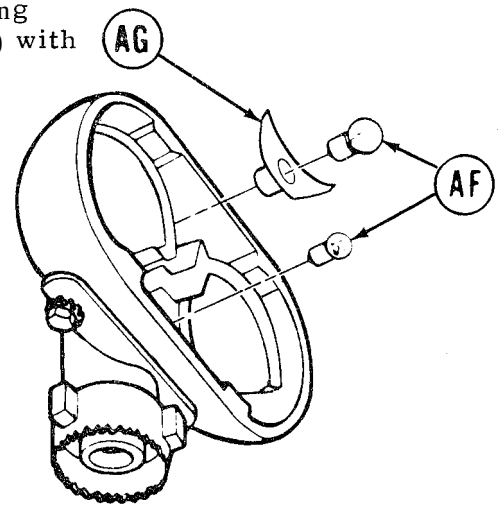




18. Using fingers, remove two seals (AE) from headlights (AB).



19. Remove two bulbs (AF) by pushing in and twisting them counterclockwise. Remove reflector (AG) with fingers.



TA249117

Go on to Sheet 5

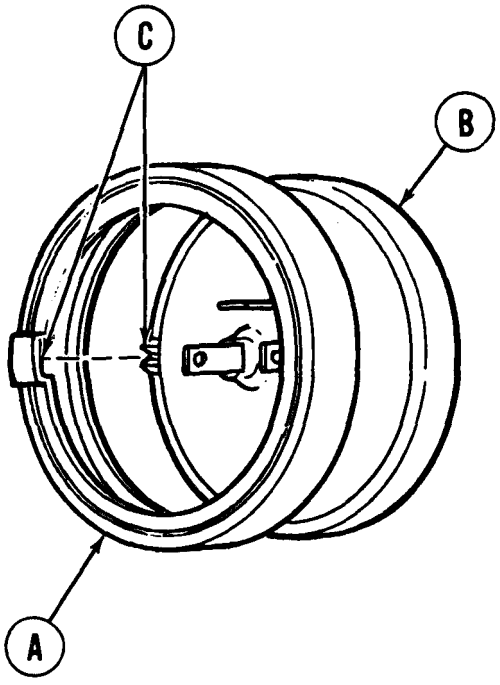
HEADLIGHT ASSEMBLY REPAIR (LEFT AND RIGHT) (Sheet 5 of 8)

CLEANING AND INSPECTION:

1. Inspect headlight components for corrosion. Any item that cannot be cleaned with crocus cloth or steel wool is cause for replacement.
2. Inspect seals and gaskets for wear, cuts, and/or deterioration. Replace damaged seals and gaskets.
3. Using soft cloth, clean lens glass.
4. Inspect lens glass for chipping, scratches, or cracks. Replace damaged lens glass.
5. Using cloth, remove any dust or moisture from parts.

ASSEMBLY:

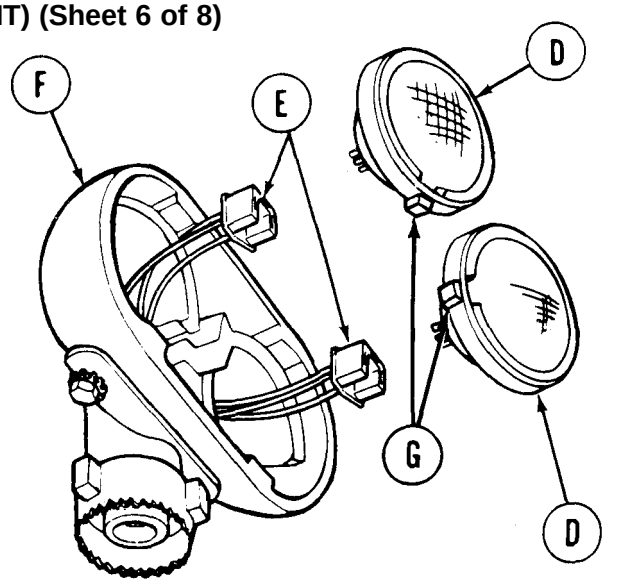
1. Slide two seals (A) over two headlings (B), alining notches (C) on both.



Go on to Sheet 6

TA249118

HEADLIGHT ASSEMBLY REPAIR (LEFT AND RIGHT) (Sheet 6 of 8)

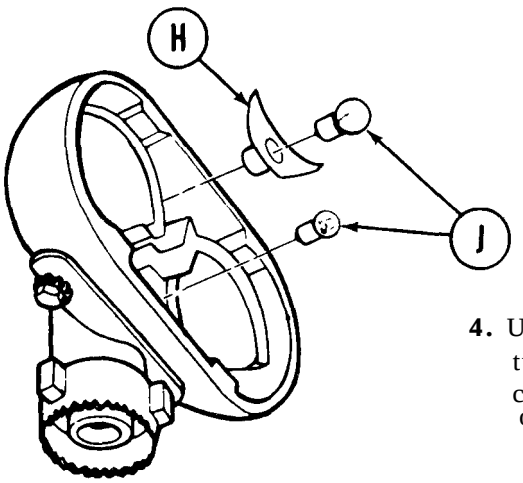


2. Connect two headlights (D) to two electrical connectors (E) on headlight body (F).

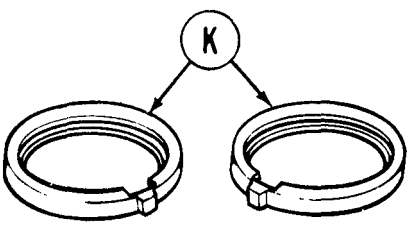
3. Place two headlights (D) in headlight body (F) alining notches (G) on both.

NOTE

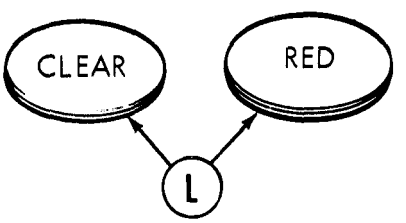
Install reflector (H) with larger bulb (J).



4. Using fingers, install reflector (H), and install two bulbs (J) by pushing in and twisting them clockwlse. Large bulb with reflector (H) goes on top.



5. Using fingers, install two seals (K) around two headlight lenses (L). Make sure notches of seals are to inside.



Go on to Sheet 7

TA249119

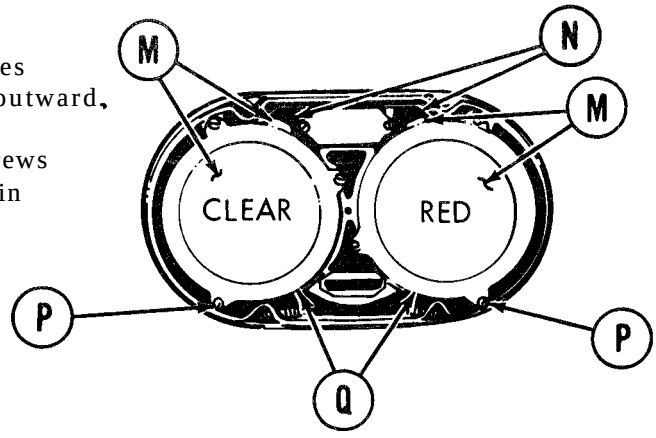
HEADLIGHT ASSEMBLY REPAIR (LEFT AND RIGHT) (Sheet 7 of 8)

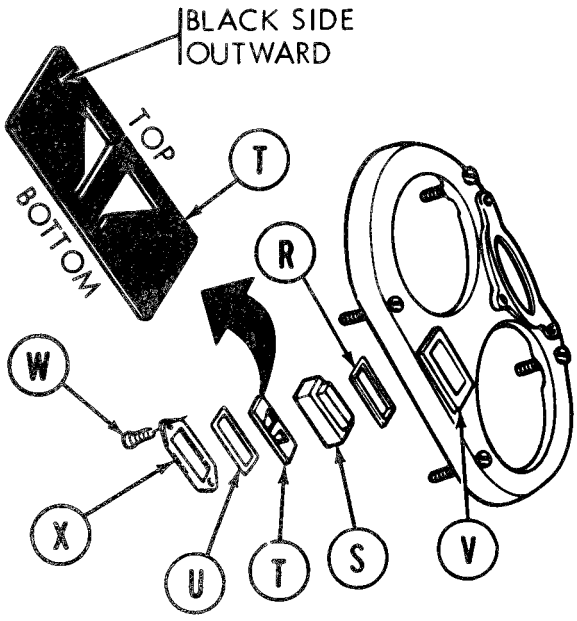
NOTE

Make sure red and clear lenses (M) are positioned as shown.

6. Place headlight lens and seals (M) in notches of' headlight cover (N) with rounded sides outward.

7. Using cross-tip Screwdriver install six screws and lockwashers (P) and two retainers (Q) in position over two lenses (M) arid tighten.





NOTE

Make sure filter (T) is positioned in blackout marker cavity (V) properly.

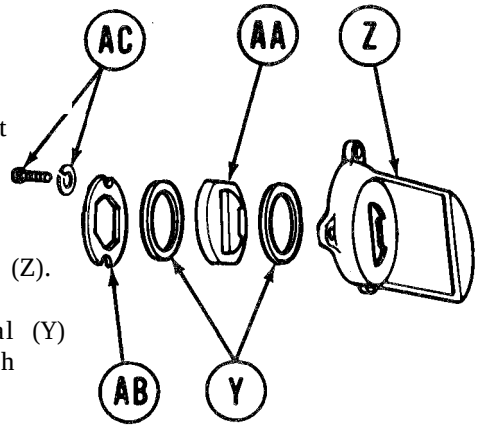
8. Using fingers, install seal (R), lens (S), filter (T), and seal (U) in blackout marker cavity (V).

9. Using cross-tip screwdriver, install two screws (W) with assembled washers to secure retainer (X).

10. Using fingers, install one seal (Y) in blackout headlight shield (Z).

11. Using fingers, install blackout headlight lens (AA) in position on blackout headlight shield (Z).

12. Using cross-tip screwdriver, install other seal (Y) and retainer (AB) into headlight shell (Z) with two screws and lockwashers (AC).



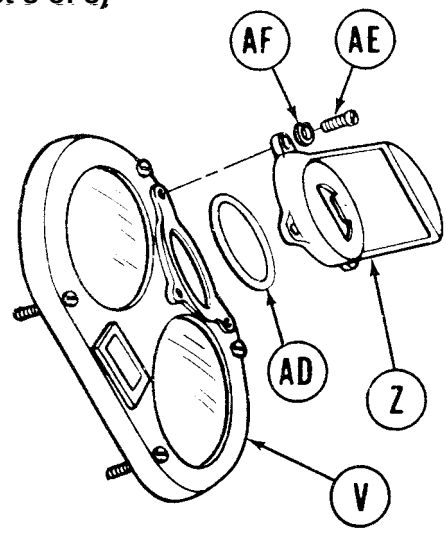
Go on to Sheet 8

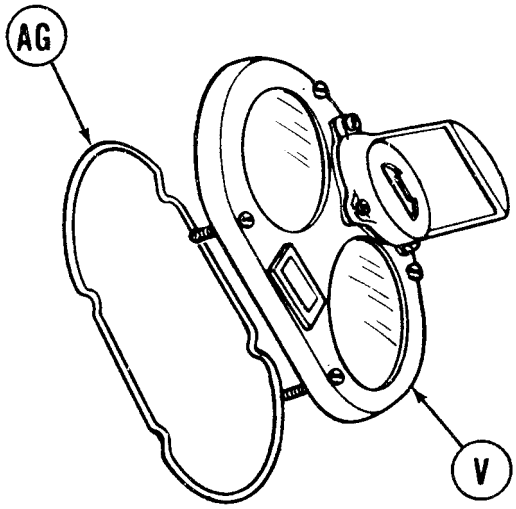
TA249120

HEADLIGHT ASSEMBLY REPAIR (LEFT AND RIGHT) (Sheet 8 of 8)

12. Apply adhesive to round seal (AD), place on blackout headlight shield (Z).

13. Using cross-tip screwdriver, install three screws (AE), lockwashers (AF), and shield (Z) to headlight cover (V).



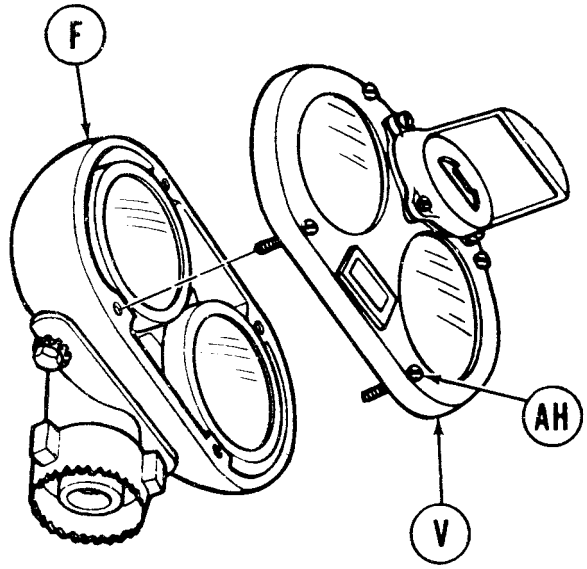


14. Apply adhesive to headlight cover seal (AG) and insert on headlight cover (V).

15. Using flat-tip screwdriver, tighten four captive screws (AH) securing headlight cover (V) to headlight body (F).

16. Install headlight assembly (page 10-172).

17. Check operation of headlight (TM 5-5420-202-10).



End of Task

TA249121

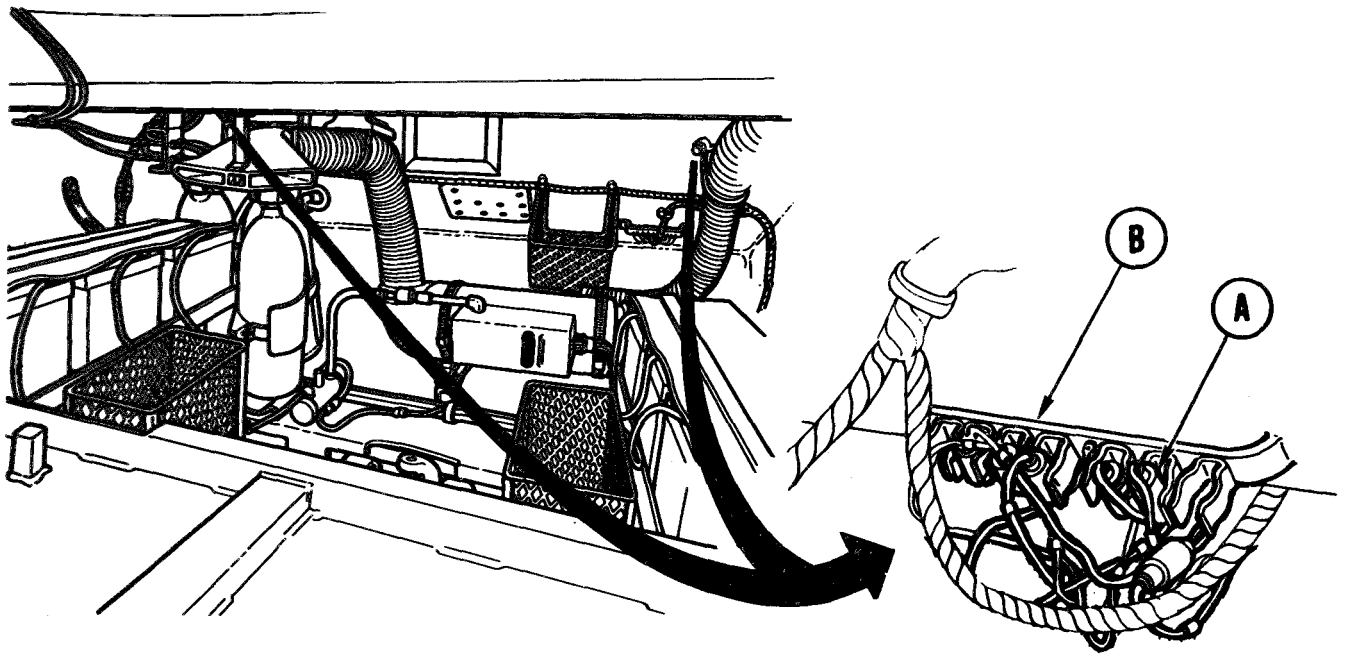
HEADLIGHT HARNESS BASE ASSEMBLY REPLACEMENT (Sheet 1 of 4)

PROCEDURE INDEX

TOOLS: Cross-tip screwdriver
7/16 in. combination box and open end wrench

SUPPLIES: Silicone compound (Item 32, Appendix D)
Lockwashers (4 required)

PRELIMINARY PROCEDURES: Remove headlight assembly (page 10-172)



REMOVAL:

1. From inside vehicle, remove six connectors (A) from bracket assembly (B) by pulling down.

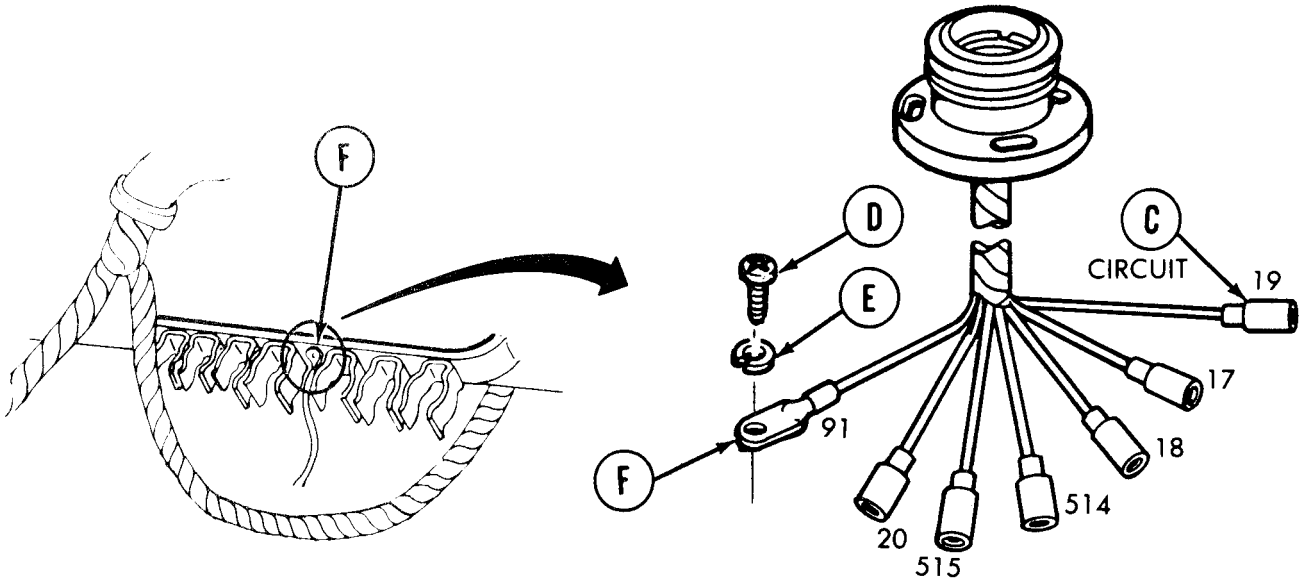
Go on to Sheet 2

TA249122

HEADLIGHT HARNESS BASE ASSEMBLY REPLACEMENT (Sheet 2 of 4)

2. Disconnect six electrical connectors (C) by pulling apart.

3. Using screwdriver, remove screw (D), lockwasher (E), and ground lead (F) from hull.

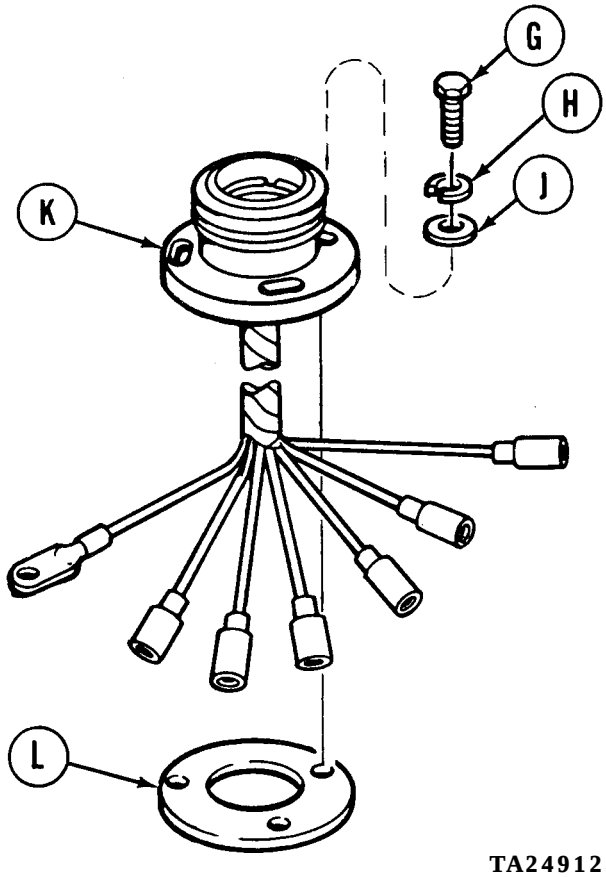


4. From outside of vehicle, using wrench, remove three screws (G), lockwashers (H), and flat washers (J) securing base assembly (K) and gasket (L) to vehicle.

NOTE

remove connectors and leads one at a time.

5. Remove base assembly (K) and gasket (L).



TA249123

Go on to Sheet 3

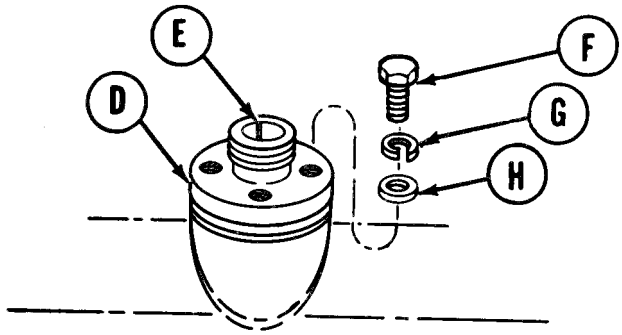
HEADLIGHT HARNESS BASE ASSEMBLY REPLACEMENT (Sheet 3 of 4)

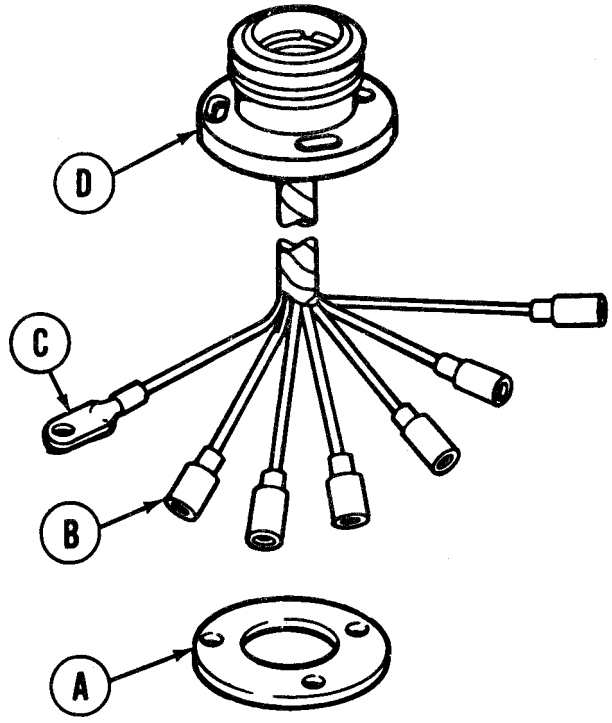
INSTALLATION:

1. Place gasket (A) imposition on vehicle.

2. Insert six electrical connectors (B) and ground lead (C) through hole in vehicle.

3. Place base assembly (D) in position on gasket (A) with slot (E) to the rear.





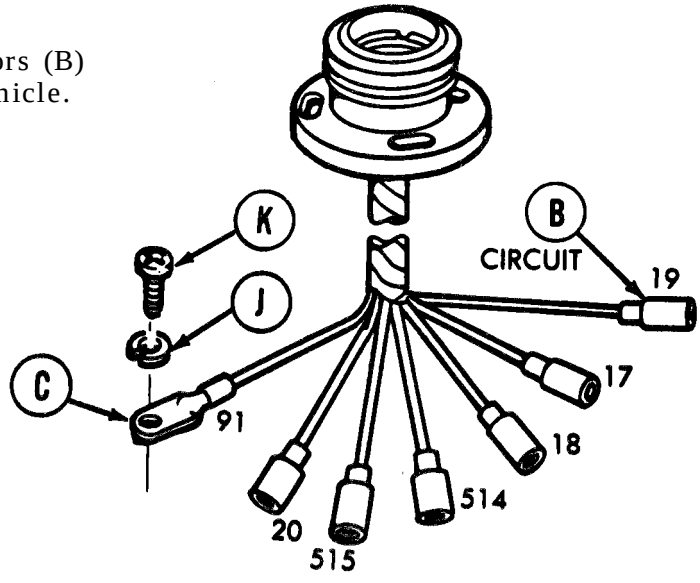
4. Using wrench, install three screws (F), lockwashers (G), and flat washers (H) securing base assembly (D) to vehicle.

5. Apply silicone compound to six connectors (B) located on front harness inside vehicle.

6. From inside vehicle, connect six connectors (B) by pushing together.

NOTE

Make sure to connect connectors properly. Use the metal tags for identifying the proper connections.



Using screwdriver, install ground lead (C), lockwasher (J), and screw (K) securing ground lead to hull.

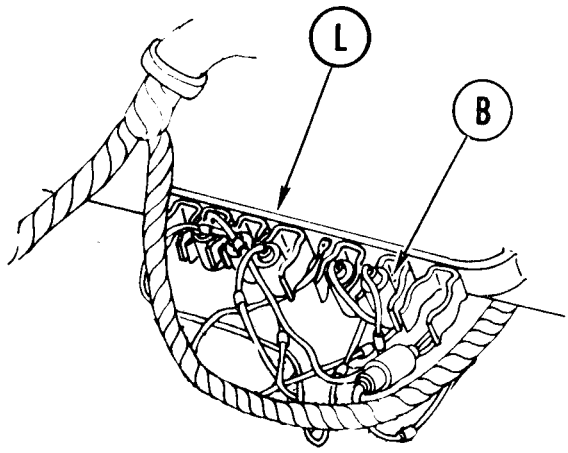
Go on to Sheet 4

TA249124

HEADLIGHT HARNESS BASE ASSEMBLY REPLACEMENT (Sheet 4 of 4)

8. Place six connectors (B) in position in bracket assembly (L) by pushing up.

9. Install headlight assembly (page 10-172).



End of Task

TA249125

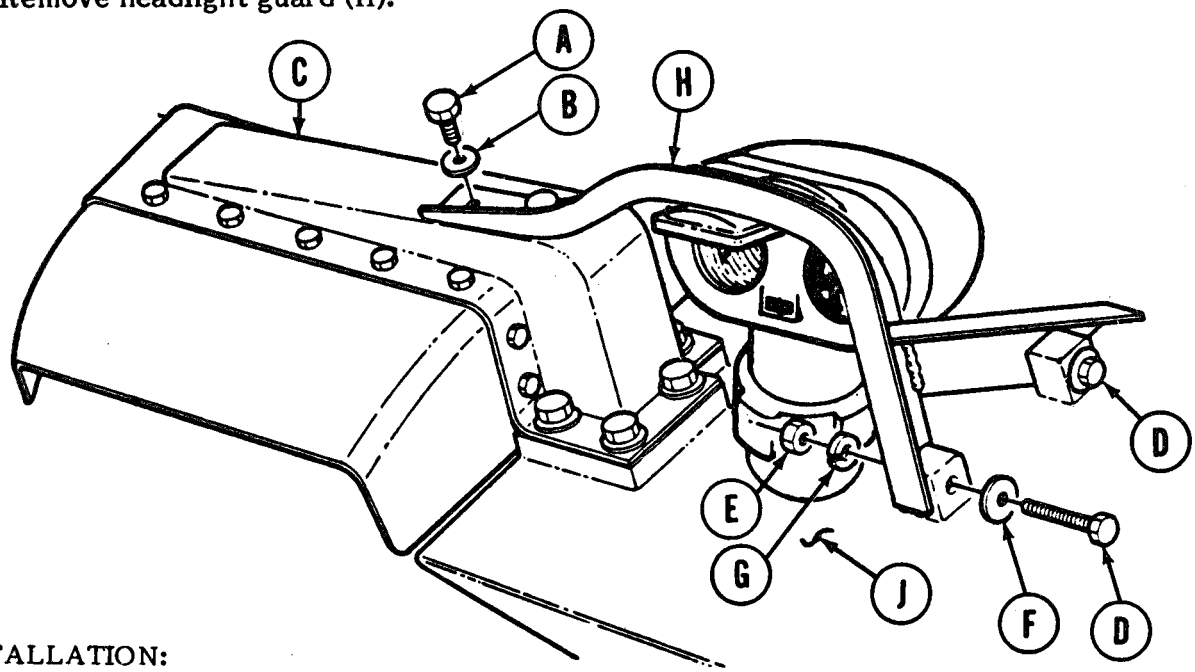
HEADLIGHT GUARD REPLACEMENT (Sheet 1 of 1)

TOOLS: Ratchet with 1/2 in. drive
9/16 in. socket with 1/2 in. drive
3/4 in. socket with 1/2 in. drive
3/4 in. combination box and open end wrench

SUPPLIES: Lockwashers (2 required)

REMOVAL:

1. Using 9/16 inch socket, remove two screws (A) and washers (B) holding headlight guard to outrigger No. 1 (C).
2. Using 3/4 inch socket on screws (D) and 3/4 inch wrench on nuts (E), remove two screws (D) and washers (F) and two nuts (E) and lockwashers (G) holding headlight guard (H) to hull (J).
3. **Remove headlight guard (H).**



INSTALLATION:

1. Using 9/16 inch socket, loosely install headlight guard (H) to hull using two screws (A) and washers (B).
2. Using 3/4 inch socket and 3/4 inch wrench, loosely install headlight guard (H) to hull using two screws (D), washers (F), new lockwashers (G), and nuts (E).
3. Using 9/16 inch socket on screws (A) and 3/4 inch socket and 3/4 inch wrench on screws (D) and nuts (E), tighten screws and nuts.

End of Task

TA249126

HEADLIGHT HARNESS BASE ASSEMBLY SHELL REPLACEMENT (Sheet 1 of 1)

TOOLS: Round nose pliers

PRELIMINARY PROCEDURE: Remove headlight base assembly (page 10-181)

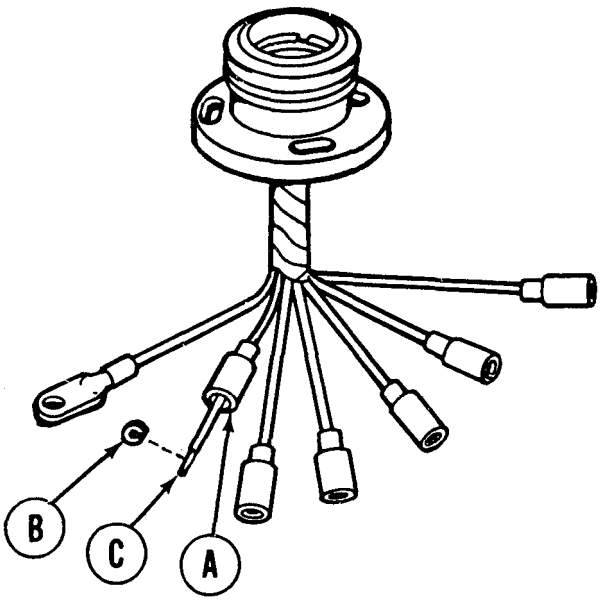
REMOVAL:

1. Slide shell (A) up so that lockwasher (B) is visible.
2. Using pliers, remove lockwasher (B) from wire (C).
3. Slide shell (A) off wire (C).

INSTALLATION:

1. Slide shell (A) onto wire (C).
2. Using fingers, slide lockwasher (B) onto wire (C).
3. Using pliers, tighten lockwasher (B) so it is securely in place.
4. Slide shell (A) over lockwasher (B) and end of wire (C).
5. Install headlight base assembly (page 10-183).

End of Task



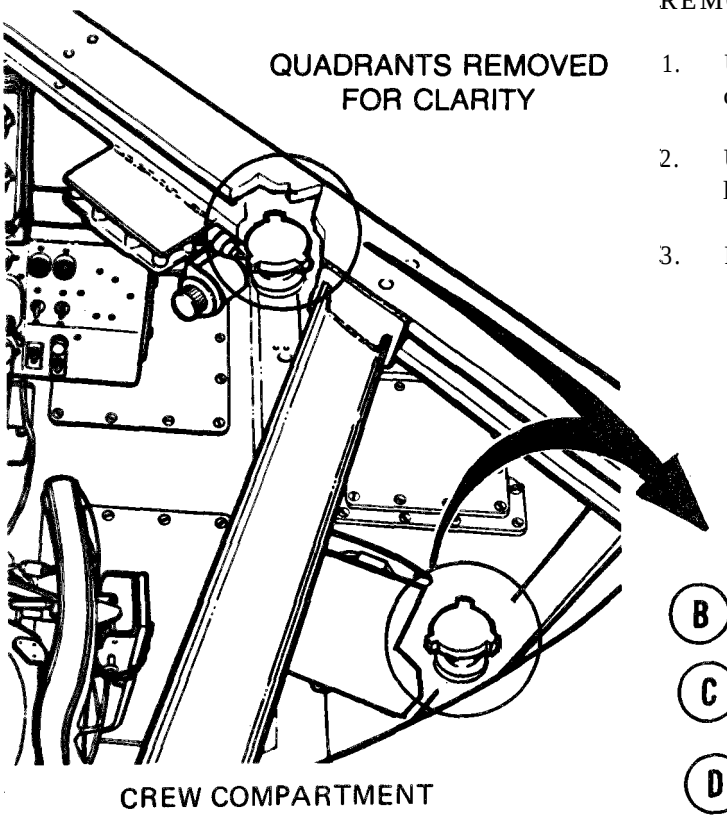
TA249127

HEADLIGHTS STOWAGE LAMP HOLDER REPLACEMENT (Sheet 1 of 1)

TOOLS: 7/16 in. combination box and open end wrench
SUPPLIES: Lockwashers (3 required)

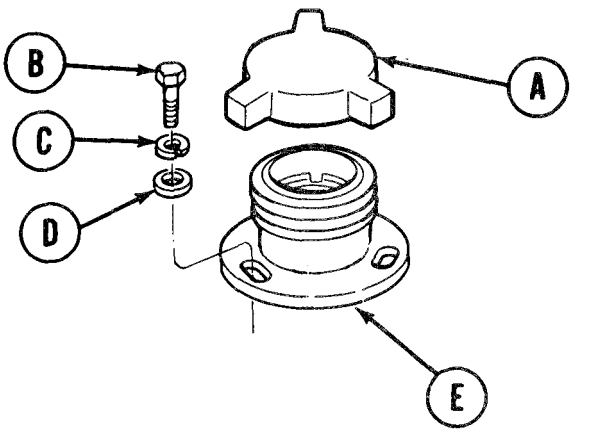
NOTE

There are two lampholders in the crew compartment, Removal and installation are the same for each lampholder.



REMOVAL:

1. Using hand, remove dust cap (A) by turning counter clockwise.
2. Using wrench, remove three screws (B), lockwashers (C), and flat washers (D).
3. Remove lampholder (E).



INSTALLATION:

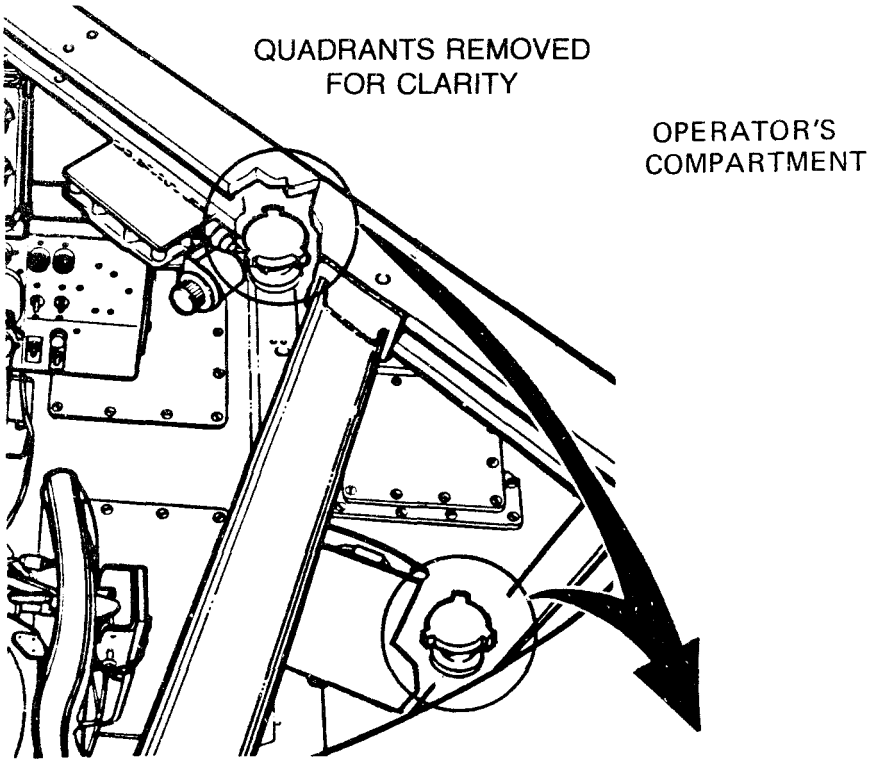
1. Place lampholder (E) in position.
2. Using wrench install three screws (B), lockwashers (C), and flat washer (D).
3. Install dust cap (A) by turning clockwise.

End of Task.

TA249128

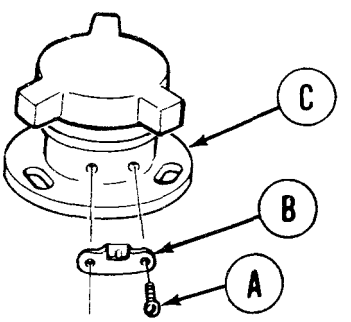
HEADLIGHT STOWAGE LAMPHOLDER REPAIR (Sheet 1 of 1)

TOOLS: Flat-tip screwdriver
SUPPLIES: Spring clip
PRELIMINARY PROCEDURE: Remove lampholder from vehicle (page 10-187)



DISASSEMBLY:

1. Using screwdriver, remove two screws (A) with assembled lockwashers.
2. Remove defective spring clip (B) from lampholder (C) and throw it away.



ASSEMBLY:

1. Place new spring clip (B) in position on lampholder (C).
2. Using screwdriver, install two screws (A) with assembled lockwashers.
3. Install lampholder (page 10-187).

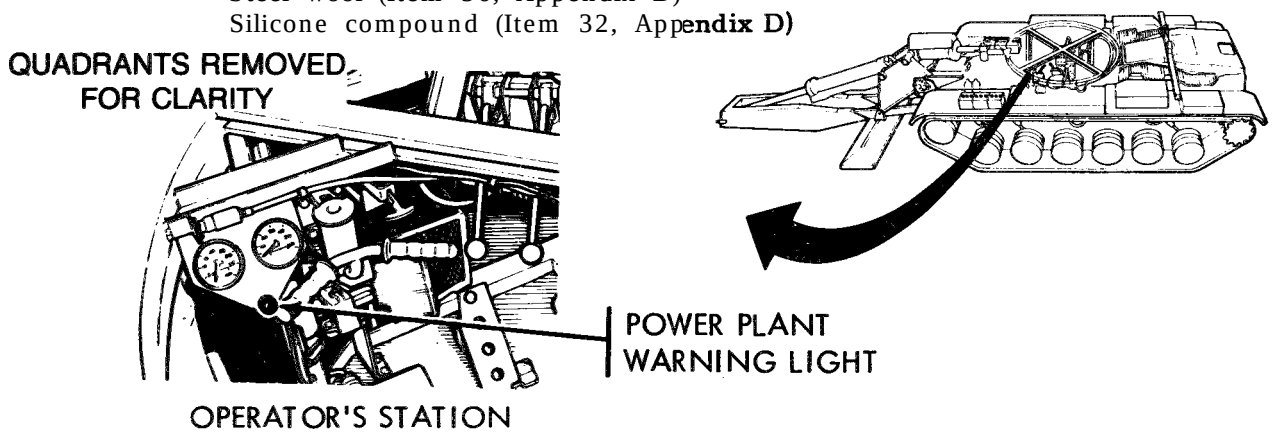
End of Task

TA249129

POWER PLANT WARNING LIGHT REPAIR (Sheet 1 of 2)

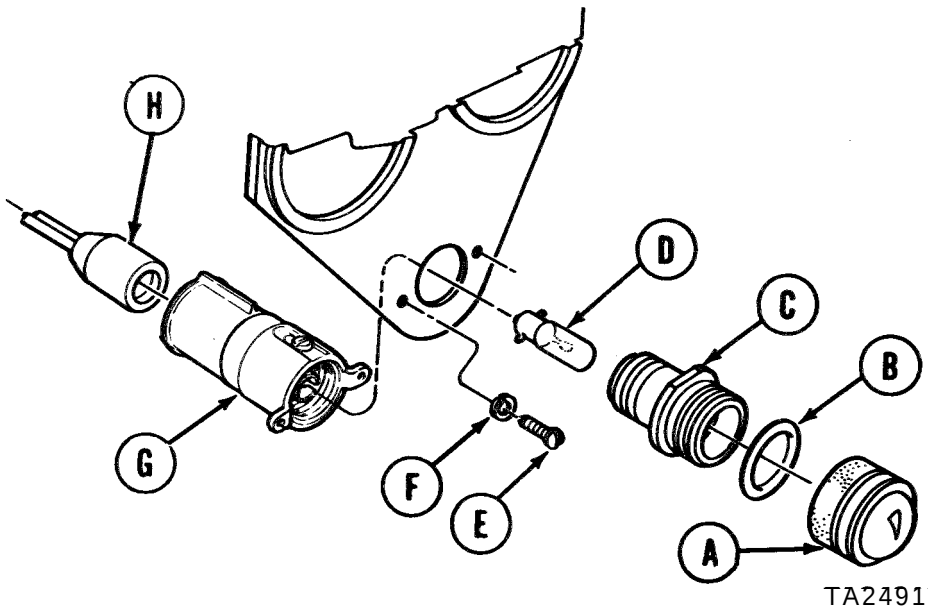
TOOLS: 10 in. adjustable wrench
Cross-tip screwdriver

SUPPLIES: Lint free cloth (Item 12, Appendix D)
Packing
Steel wool (Item 56, Appendix D)
Silicone compound (Item 32, Appendix D)



DISASSEMBLE

1. Unscrew lens (A), and remove packing (B), from adapter (C).
2. Using wrench, remove adapter (C).
3. Press in on lamp (D), turn if left slightly and remove.
4. Using screwdriver, remove two screws (E), lockwashers (F), and light assembly (G).
5. With fingers, pull electrical connector (H) loose from light assembly (G).



Go on to Sheet 2

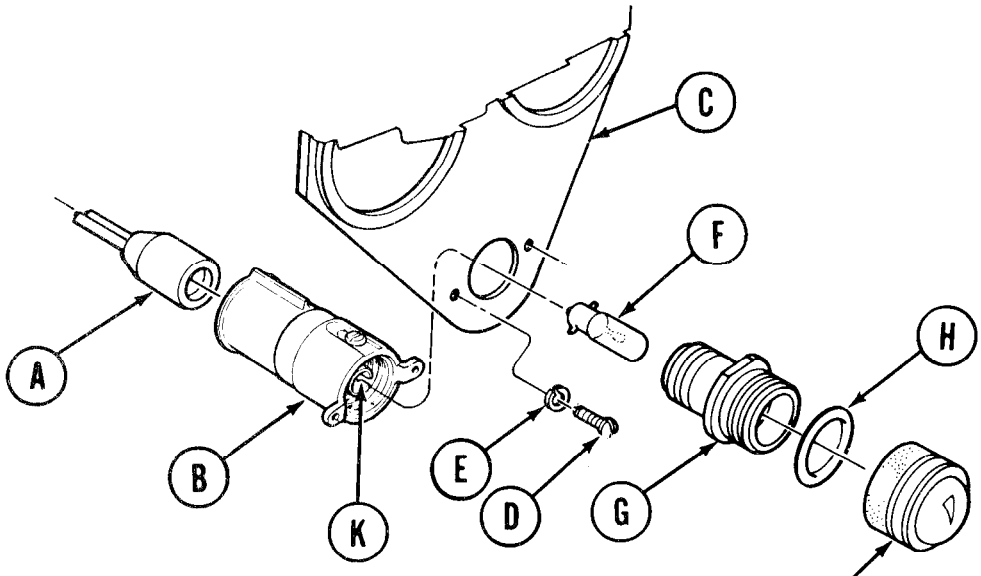
TA249130

POWER PLANT WARNING LIGHT REPAIR (Sheet 2 of 2)

CLEANING AND INSPECTION:

1. Clean lens (A) with moist, lint free cloth.
2. Using steel wool, remove any corrosion from connector terminal (K) of lamp assembly (G).
3. Inspect lens for cracks or deep scratches. Replace if any are found.

INSTALLATION:



NOTE

Apply silicone compound to connector (H).

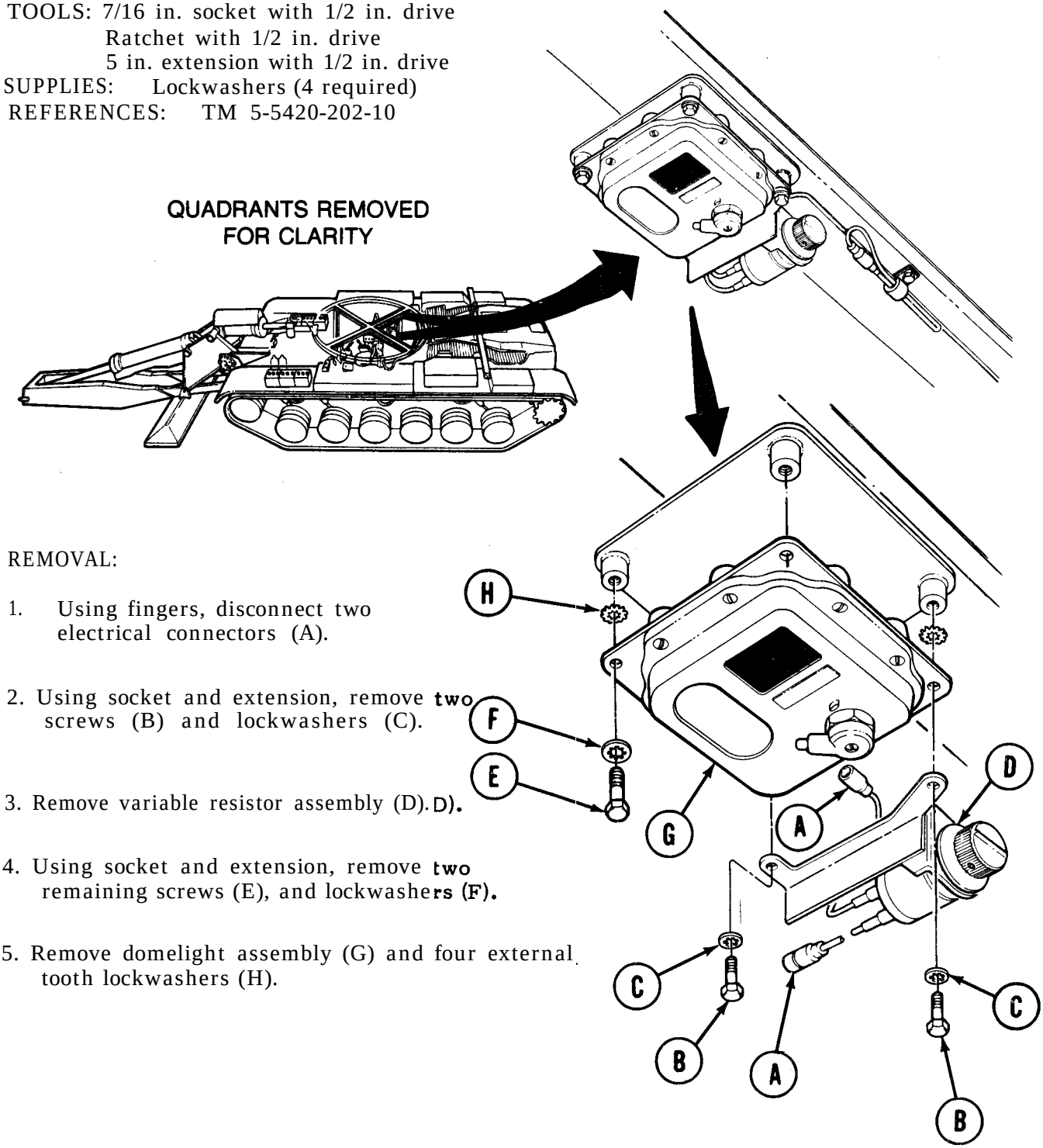
1. Using fingers, connect electrical connector (A), to light assembly (B).
2. Using screwdriver, secure light assembly (B), to bracket (C), with two screws (D) and lockwashers (E).
3. Insert lamp (F) in socket. Press in and turn slightly right, and release to secure.
4. Using adjustable wrench, install adapter (G).
5. Place packing (H) on adapter (G), and install lens (J) finger tight.
6. Place MASTER BATTERY switch to ON and check that lamp (F) lights.

End of Task

TA249131

DOMELIGHT ASSEMBLY REPLACEMENT (Sheet 1 of 2)

TOOLS: 7/16 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
5 in. extension with 1/2 in. drive
SUPPLIES: Lockwashers (4 required)
REFERENCES: TM 5-5420-202-10



REMOVAL:

1. Using fingers, disconnect two electrical connectors (A).
2. Using socket and extension, remove two screws (B) and lockwashers (C).
3. Remove variable resistor assembly (D).
4. Using socket and extension, remove two remaining screws (E), and lockwashers (F).
5. Remove domelight assembly (G) and four external tooth lockwashers (H).

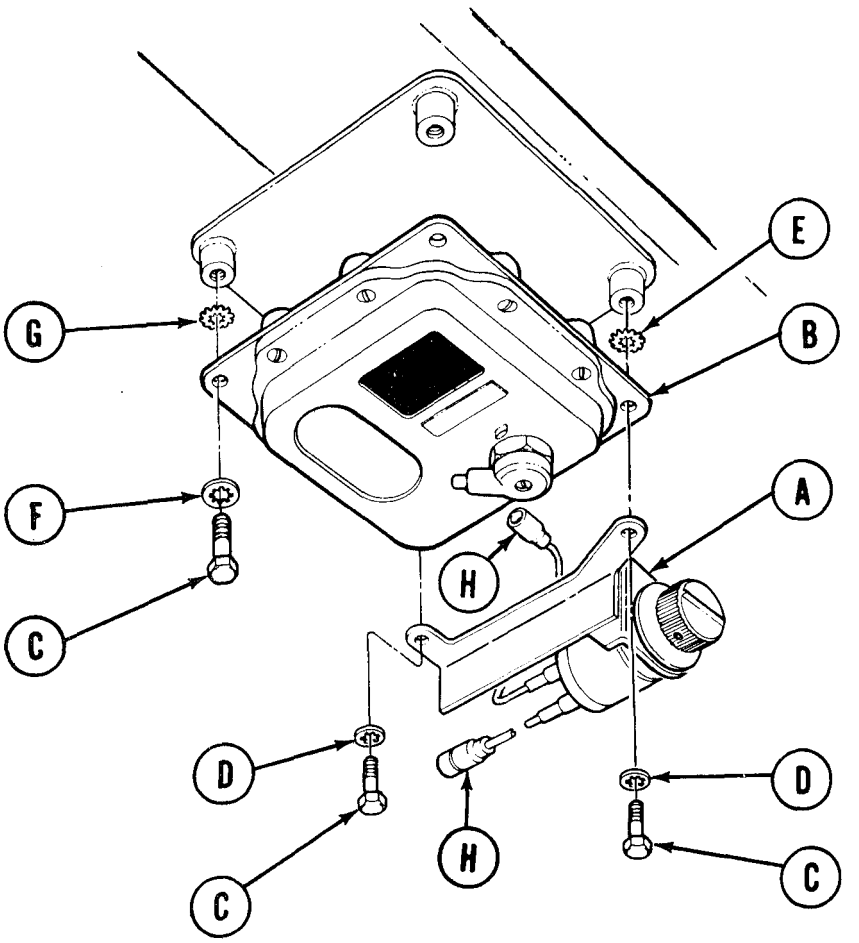
Go on to Sheet 2

TA249132

DOMELIGHT ASSEMBLY REPLACEMENT (Sheet 2 of 2)

INSTALLATION:

1. Place resistor assembly (A) in position on domelight assembly (B).
2. Insert two screws (C) and lockwashers (D) in screw holes of domelight assembly.
3. Place two external tooth lockwashers (E) over screws (C).
4. Aline domelight (B) on mounting bracket of vehicle.
5. Tighten screws (C) with fingers.
6. Using socket and extension, install two remaining screws (C), lockwashers (F), and external tooth lockwashers (G).
7. Using socket and extension, tighten two screws (C).
8. Using fingers, connect two electrical connectors (H).
9. Check operation of domelight (TM 5-5420-202-10).



End of Task

TA249133

DOMELIGHT ASSEMBLY REPAIR (Sheet 1 of 8)

PROCEDURE INDEX

TOOLS: Flat-tip screwdriver
Cross-tip screwdriver
8 in. adjustable wrench
Long round-nose pliers
SUPPLIES: Lockwashers (7 required)
PRELIMINARY PROCEDURE: Remove dome light (page 10-191)

DISASSEMBLY:

1. Using flat-tip screwdriver, unscrew eight captive machine screws (A).

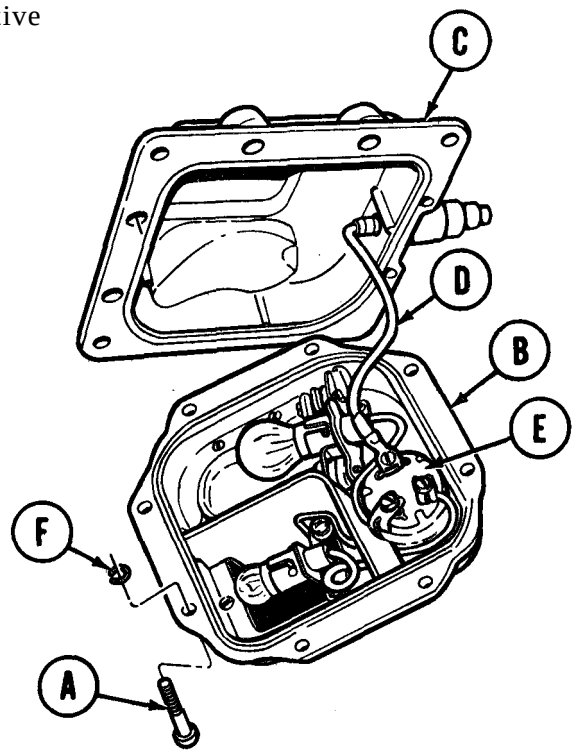
2. Separate door assembly (B) from dome light (C).

3. Using flat-tip screwdriver, remove electrical lead (D) from rotary switch (E).

NOTE

Do not remove rings (F) from screws (A) unless screws are to be repleced.

4. Using pliers, remove retaining rings (F) from captive **screws** (A). Remove captive screws (A).



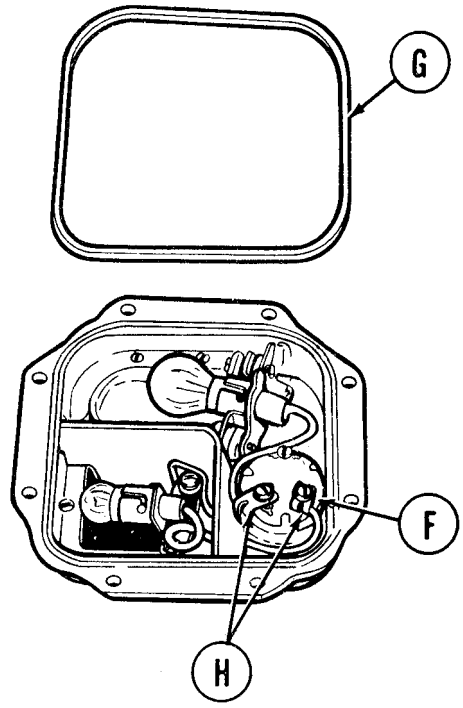
TA249134

Go on to Sheet 2

DOME LIGHT ASSEMBLY REPAIR (Sheet 2 of 8)

5. Using flat-tip screwdriver, remove door seal (G) by inserting under seal and lifting up.

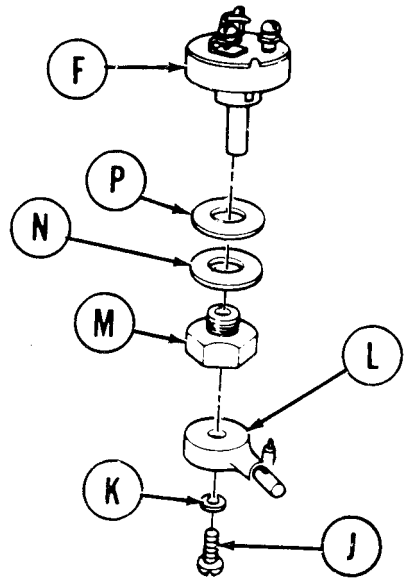
6. Using flat-tip screwdriver, remove two remaining electrical leads (H) from switch (F).



7. Using flat-tip screwdriver, remove screw (J) and lockwasher (K) securing knob (L). Remove knob (L).

8. Using wrench, remove nut assembly (M), washer (N), and gasket (P).

9. Remove rotary switch (F).



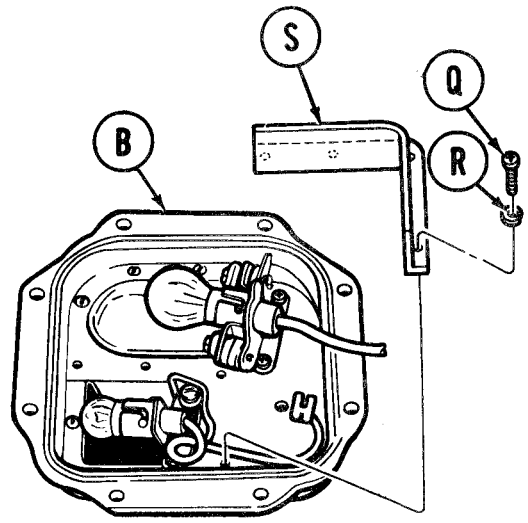
Go on to Sheet 3

TA249135

DOME LIGHT ASSEMBLY REPAIR (Sheet 3 of 8)

10. Using cross-tip screwdriver, remove four screws (Q) and lockwashers (R) from partition (S).

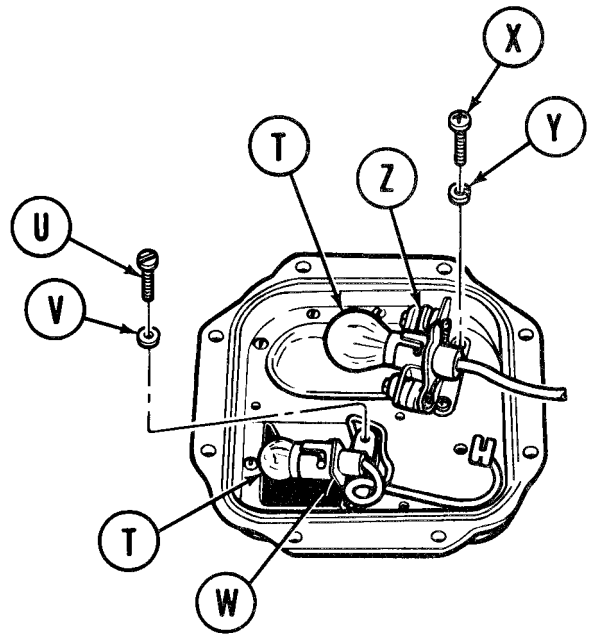
11. Remove partition (S) from door (B).



12. Remove two lamps (T), by pushing in and turning counterclockwise.

13. Using flat-tip screwdriver, remove two screws (U) and flat washers (V) holding lampholder assembly (W) in place.

14. Remove lampholder (W).



15. Using cross-tip screwdriver, remove two screws (X), and lockwashers (Y), holding the lampholder (Z) in place.

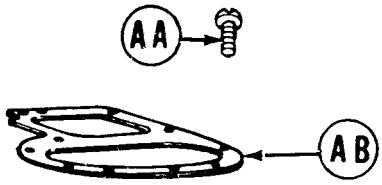
16. Remove lampholder (Z).

Go on to Sheet 4

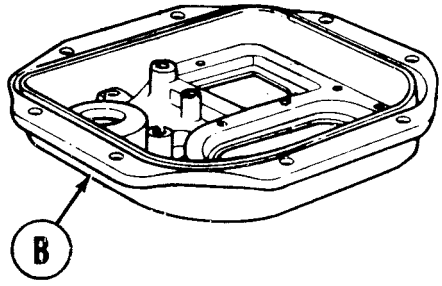
TA249136

DOME LIGHT ASSEMBLY REPAIR (Sheet 4 of 8)

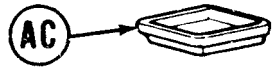
17. Using cross-tip screwdriver, remove seven screws (AA) from retaining plate (AB).

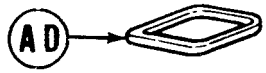


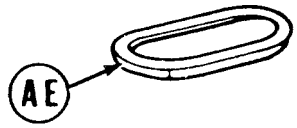
18. Remove retaining plate (AB).



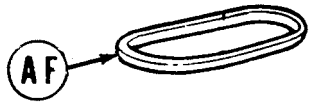
19. Remove blue lens (AC), and gasket (AD) by pushing up from outside of door (B).







20. Remove white lens (AE) and gasket (AF) in same manner as blue lens (AC).



Go on to Sheet 5

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DOME LIGHT ASSEMBLY REPAIR (Sheet 5 of 8)

CLEANING AND INSPECTION:

1. Inspect dome light and components for cleanliness and corrosion. Replace any components that cannot be cleaned.

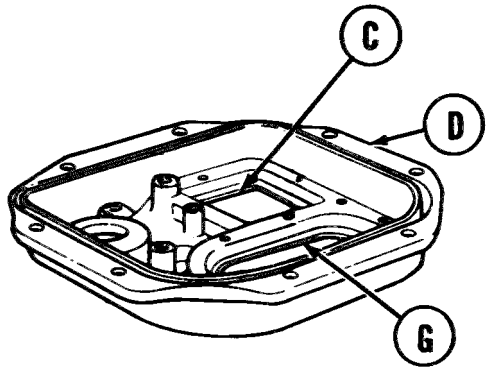
2. Inspect for mechanical damage and wear. If worn or damaged, replace.

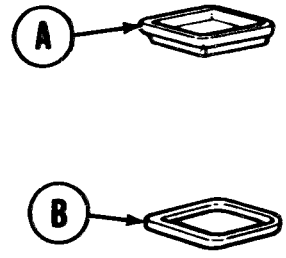
3. Inspect dome light components for cracks. If any items are cracked, replace them.

4. Inspect all gaskets for damage. If damaged, replace.

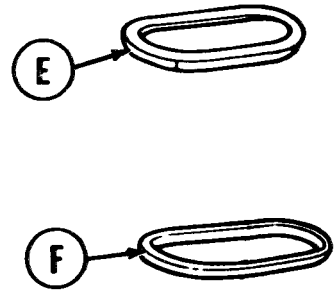
ASSEMBLY:

1. Place blue lens (A) and gasket (B) in position (C) on door (D).





2. Place white lens (E) and gasket (F) in position (G) on door (D).



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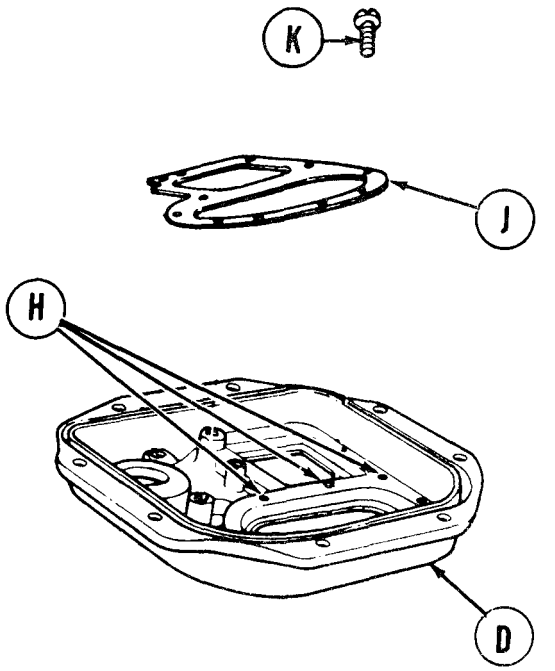
Go on to Sheet 6

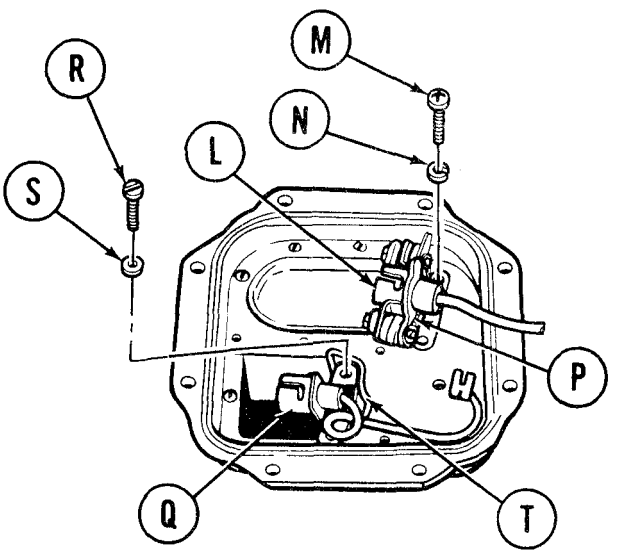
DOME LIGHT ASSEMBLY REPAIR (Sheet 6 of 8)

NOTE

Do not place screws in three holes (H) shown.



3. Using cross-tip screwdriver, install retaining plate (J) and seven screws (K) to door (D).



4. Using cross-tip screwdriver, install lampholder (L), two screws (M), lockwashers (N), and ground strap (P).

5. Using flat-tip screwdriver, install lampholder (Q), two screws (R), lockwashers (S), and ground strap (T).

Go on to Sheet 7

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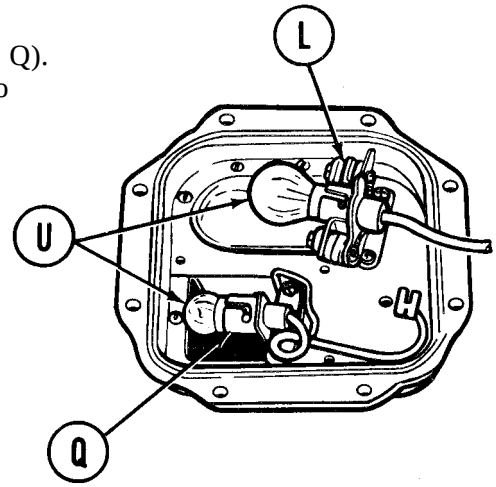
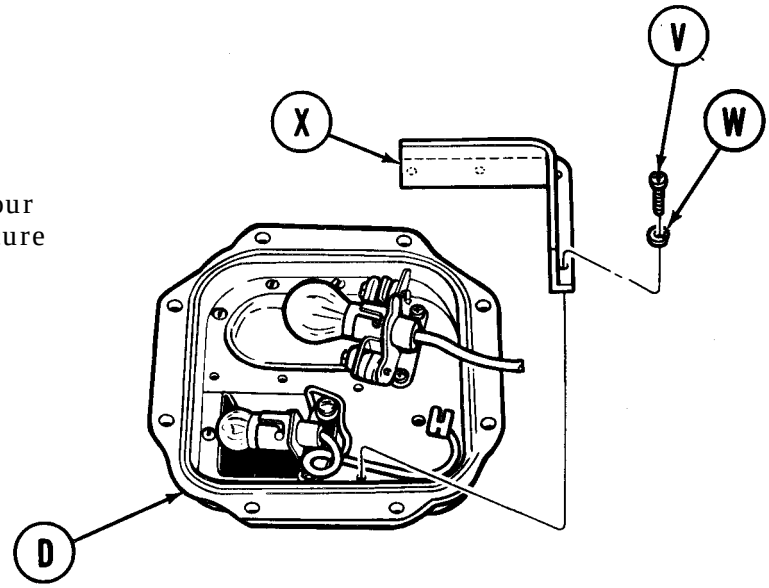
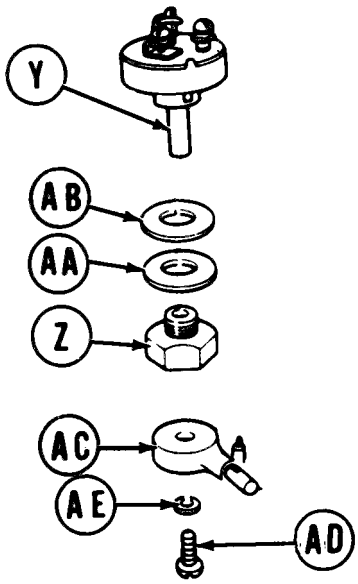
DOME LIGHT ASSEMBLY REPAIR (Sheet 7 of 8)

6. Install two lamps (U) in lampholders (L and Q). Large lamp to lampholder (L), small lamp to lampholder (Q).



7. Using cross-tip screwdriver, install four screws (V) and lockwashers (W) to secure partition (X) to door (D).





8. Place rotary switch (Y) in position on door (D).

9. Using wrench, install nut (Z), washer (AA), and gasket (AB).

10. Using flat-tip screwdriver, install knob (AC), screw (AD), and lockwasher (AE).

Go on to Sheet 8

TA249140

DOME LIGHT ASSEMBLY REPAIR (Sheet 8 of 8)

11. Using flat-tip screwdriver, install lead (AF) from lampholder (L) to connector (AG) which is marked “W” on switch (Y).

12. Using flat-tip screwdriver, install lead (AH) from lampholder (Q) to connector (AJ) which is marked “R” on switch (Y).

13. Using fingers, install door seal (AK) in seal groove of door (D).

14. Using fingers, install eight screws (AL).

NOTE

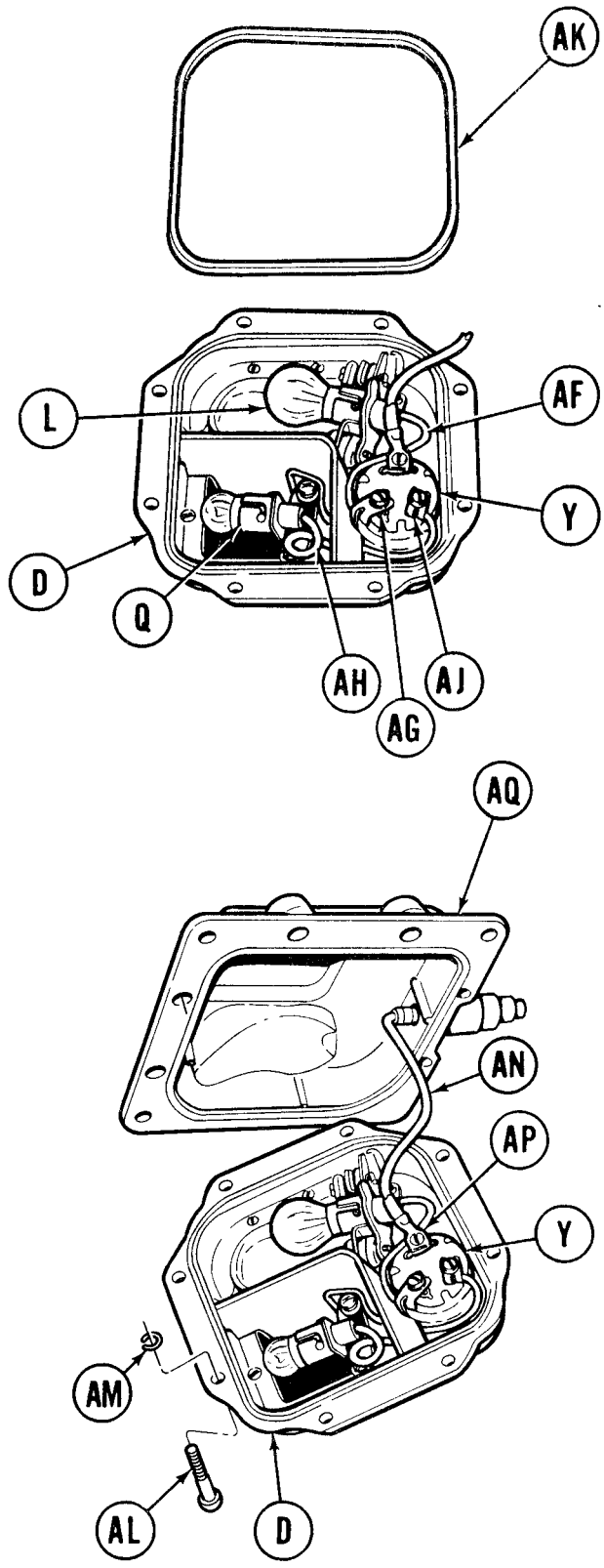
If not replacing screws (AL) disregard step 15.

15. Using pliers, install rings (AM) on screws (AL).

16. Using flat-tip screwdriver, install lead (AN) on remaining connector (AP) of switch (Y).

17. Using flat-tip screwdriver, tighten eight screws (AL) securing door (D) to dome light (AQ).

18. Install dome light (page 10-192).



End of Task

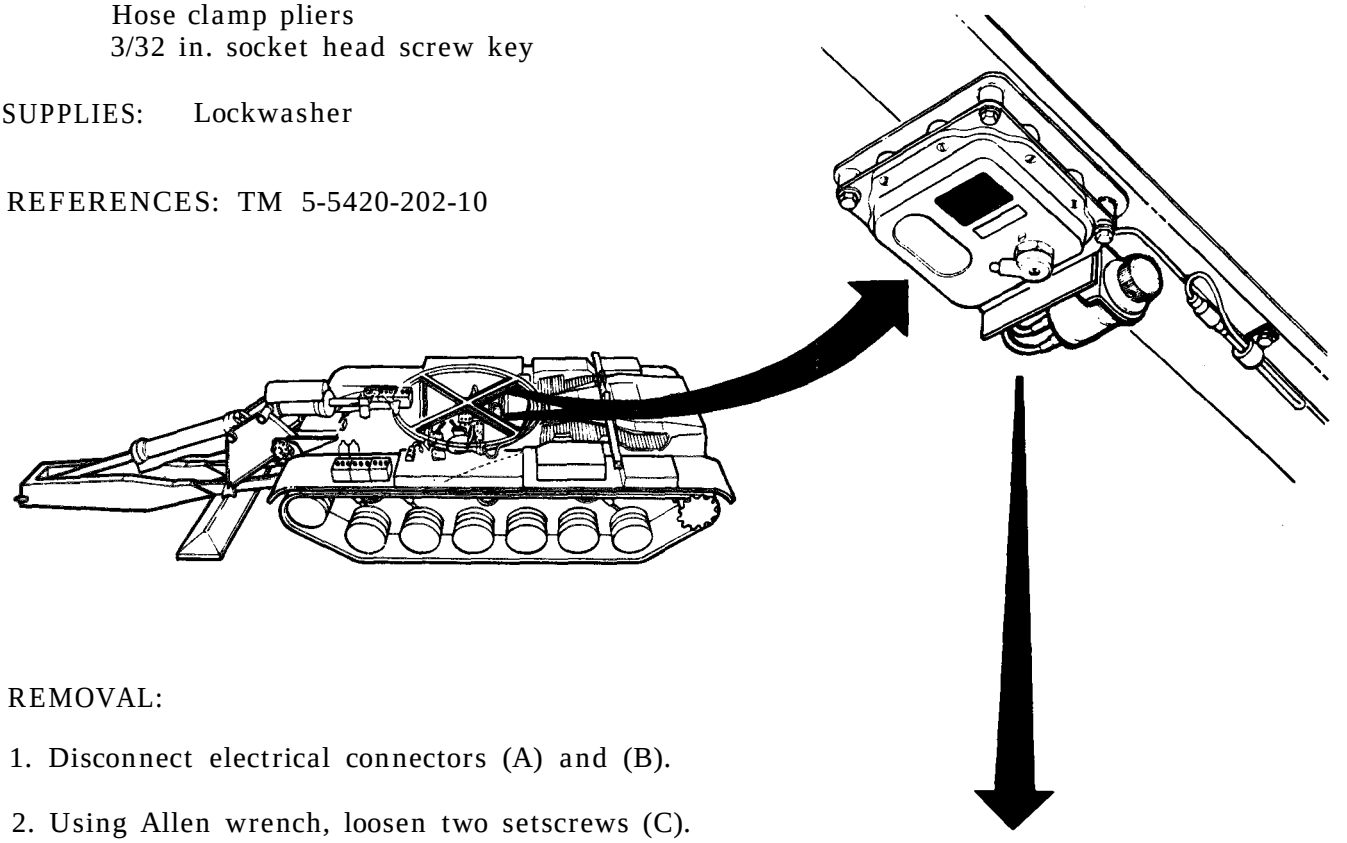
TA249141

DOMELIGHT RESISTOR ASSEMBLY REPLACEMENT (Sheet 1 of 2)

TOOLS: 9/16 in. combination box and open end wrench
Hose clamp pliers
3/32 in. socket head screw key

SUPPLIES: Lockwasher

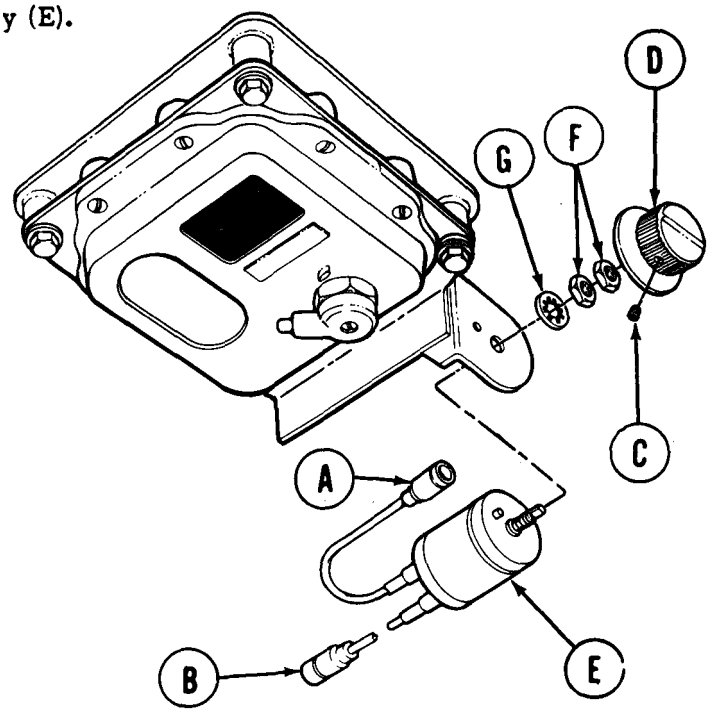
REFERENCES: TM 5-5420-202-10



REMOVAL:

1. Disconnect electrical connectors (A) and (B).
2. Using Allen wrench, loosen two setscrews (C).
3. Slide knob (D) off shaft of resistor assembly (E).
4. Using wrench on two nuts (F) and pliers on resistor assembly (E), remove nuts (F) and lockwasher (G).
5. Remove resistor assembly (E).

Go on to Sheet 2



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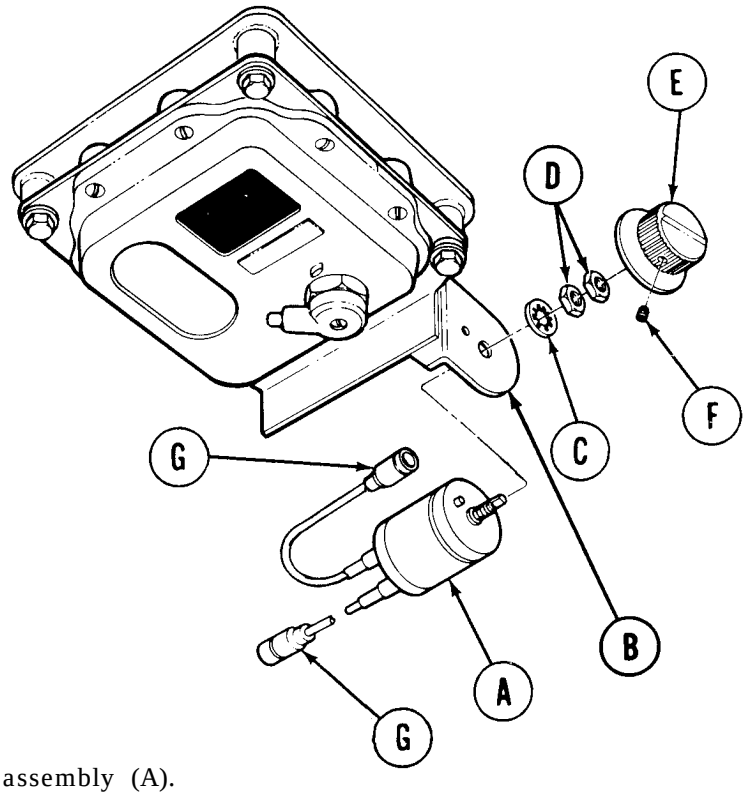
DOMELIGHT RESISTOR ASSEMBLY REPLACEMENT (Sheet 2 of 2)

INSTALLATION:

1. Position resistor assembly (A) in domelight resistor assembly bracket (B).
2. Place lockwasher (C) and two nuts (D) on resistor assembly (A).
3. Using wrench on nuts (D) and pliers on resistor assembly (A), tighten nut (D).



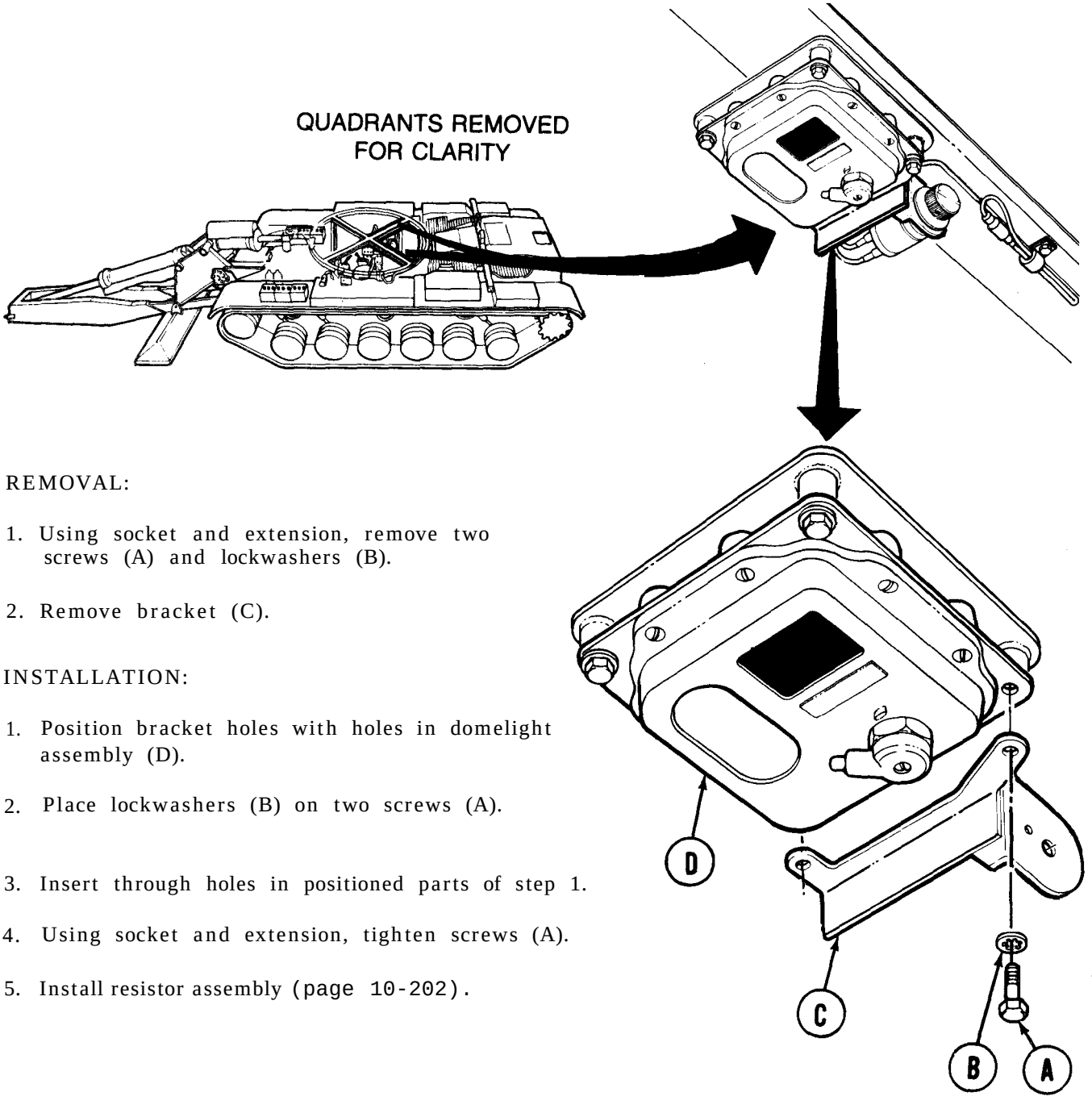
4. Slide knob (E) on resistor assembly (A).
5. Using Allen wrench, tighten two setscrews (F).
6. Connect electrical connectors (G).
7. Check operation of domelight resistor assembly (TM 5-5420-202-10).

End of Task

TA249143

DOME LIGHT RESISTOR ASSEMBLY BRACKET REPLACEMENT (Sheet 1 of 1)

TOOLS: 7/16 in. socket with 1/2 in. drive
5 in. extension with 1/2 in. drive
Ratchet with 1/2 in. drive
SUPPLIES: Lockwashers (2 required)
PRELIMINARY PROCEDURES: Remove resistor assembly (page 10-201)



REMOVAL:

1. Using socket and extension, remove two screws (A) and lockwashers (B).
2. Remove bracket (C).

INSTALLATION:

1. Position bracket holes with holes in domelight assembly (D).
2. Place lockwashers (B) on two screws (A).
3. Insert through holes in positioned parts of step 1.
4. Using socket and extension, tighten screws (A).
5. Install resistor assembly (page 10-202).

End of Task

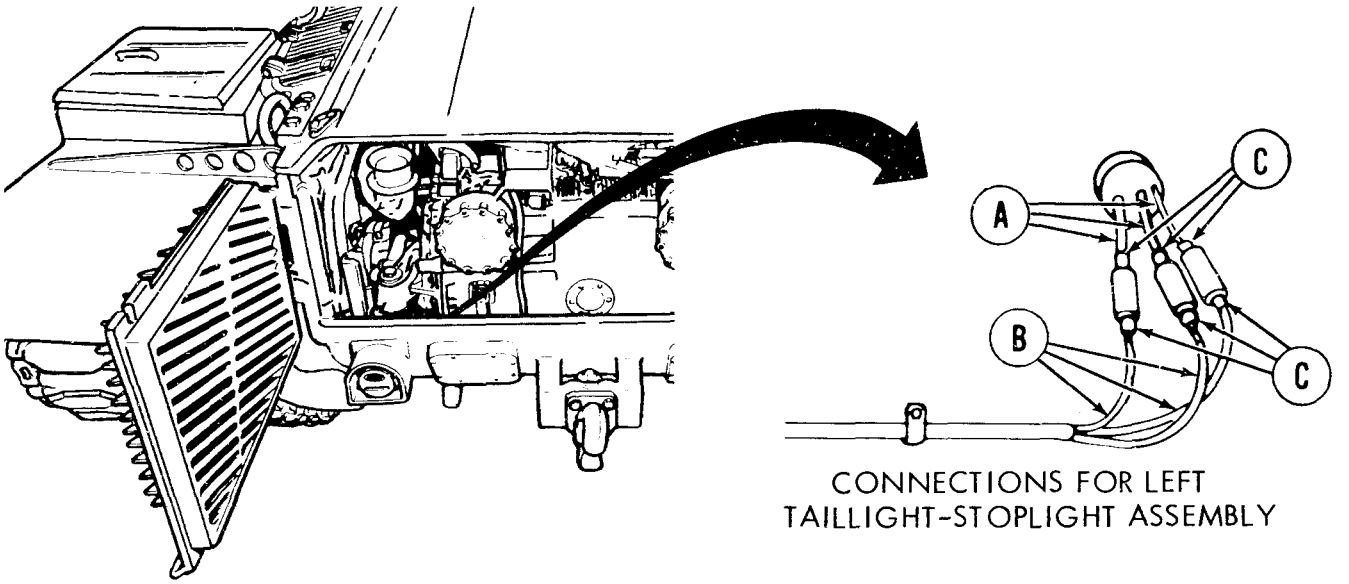
LEFT TAILLIGHT – STOPLIGHT ASSEMBLY REPLACEMENT (Sheet 1 of 3)

TOOLS: 9/16 in. combination box and open end wrench

SUPPLIES: Silicone compound (Item 32, Appendix D)
1/2 in. masking tape (Item 58, Appendix D)
Lockwashers (2 required)

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Remove transmission shroud (page 9-2)



CONNECTIONS FOR LEFT TAILLIGHT-STOPLIGHT ASSEMBLY

REMOVAL:

NOTE

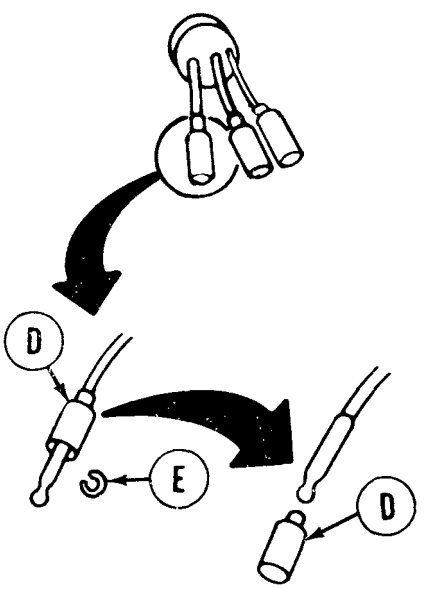
Inspect leads (A) and leads (B) for numbered tags (C). If leads do not have tags, use masking tape and pencil to number leads 21, 22, and 24.

1. Reach through exhaust door opening and using fingers disconnect three leads (A) from hull connectors (B).
2. Slide three connector shells (D) back on taillight leads to expose three slotted washers (E).

NOTE

Silicone compound may be needed on leads (A) to remove shells (D).

3. Remove three slotted washers (E) and three shells (D).



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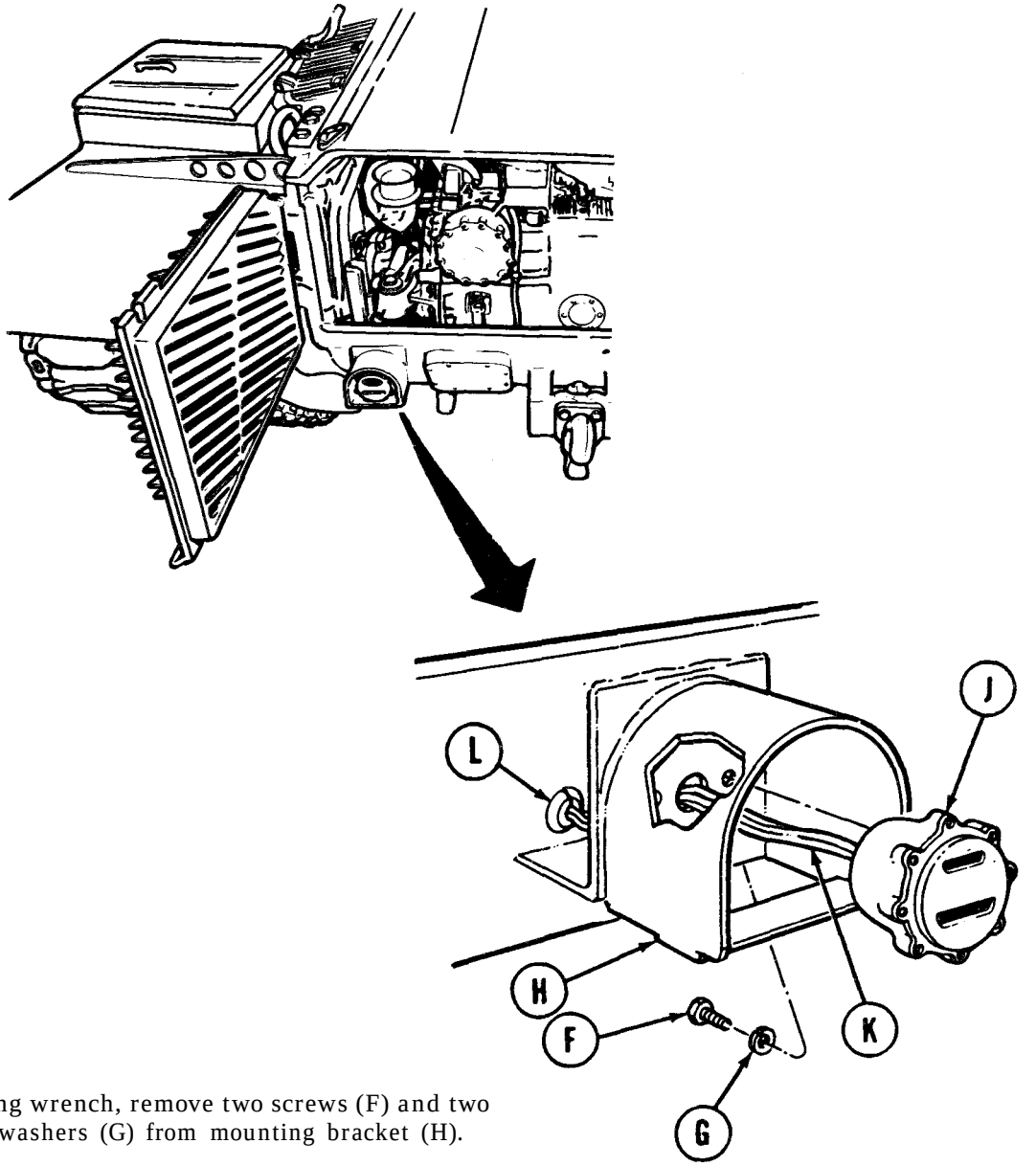
Go on to Sheet 2

LEFT TAILLIGHT - STOPLIGHT ASSEMBLY REPLACEMENT (Sheet 2 of 3)



4. Using wrench, remove two screws (F) and two lockwashers (G) from mounting bracket (H).

5. Remove taillight (J), pulling three taillight leads (K) through rubber grommet (L).

Go on to Sheet 3

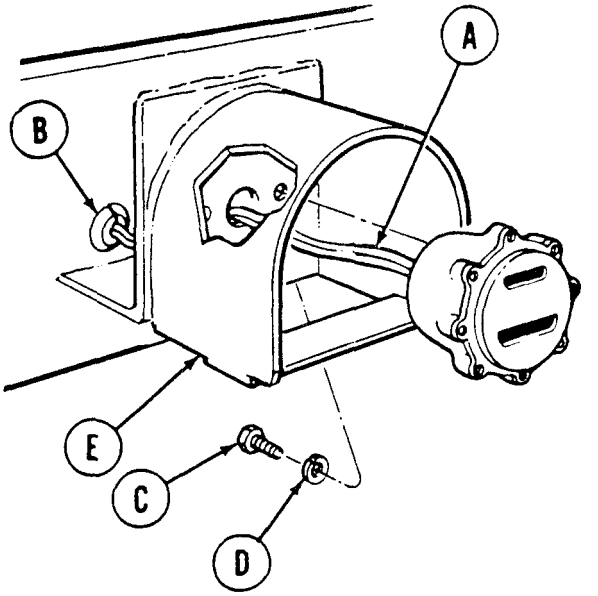
TA249146

LEFT TAILLIGHT - STOPLIGHT ASSEMBLY REPLACEMENT (Sheet 3 of 3)

INSTALLATION:

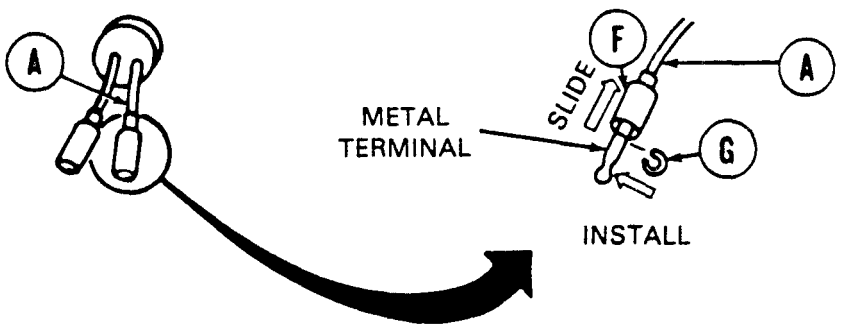
1. Using silicone compound on taillight leads (A), insert three leads through rubber grommet (B).

2. Using wrench, install two screws (C) and lockwashers (D) on mounting bracket (E).



3. Slide two shells (F) on taillight leads (A).

4. Install two slotted washers (G) on leads (A) behind metal terminal.



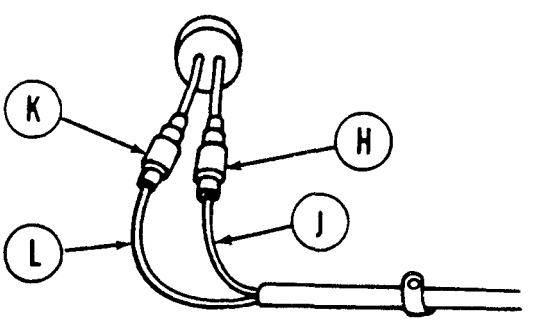
5. Connect tagged or taped taillight lead (H) to hull connector number 24 (J).

6. Connect remaining lead (K) to hull connector number 23 (L).

7. Install transmission shroud (page 9-6).

8. Check for proper taillight operation (TM 5-5420-202-10).

End of Task



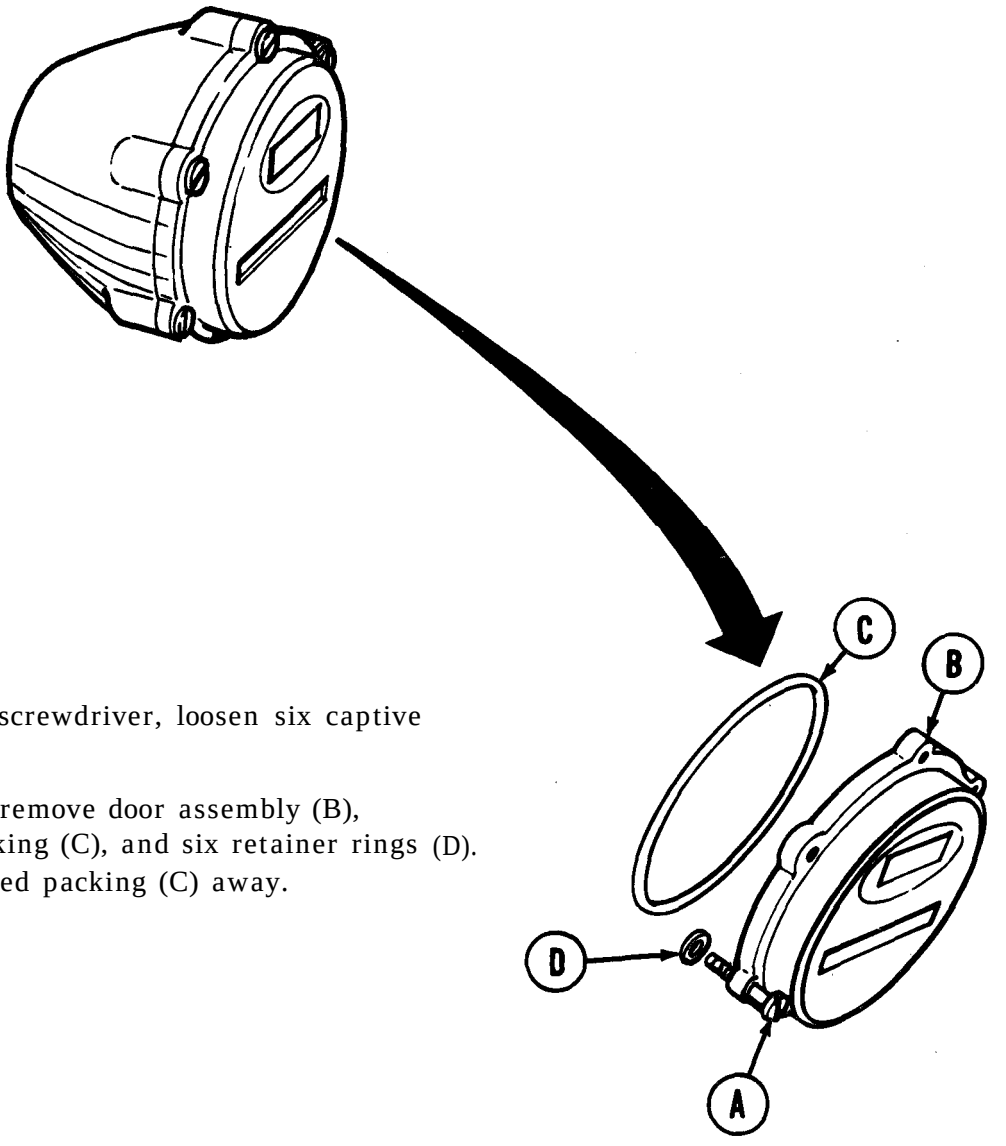
TA249147

LEFT TAILLIGHT - STOPLIGHT ASSEMBLY REPAIR (Sheet 1 of 3)

TOOLS: Flat-tip screwdriver
Cross-tip screwdriver (Phillips)

SUPPLIES: Preformed packing
Crocus cloth (Item 14, Appendix D)
Silicone compound (Item 32, Appendix D)
Lockwashers (2 required)

PRELIMINARY PROCEDURES: Remove taillight from vehicle for complete repair (page 10-204). Lamp replacement (steps 1 through 4) can be done with taillight on vehicle.



DISASSEMBLY:

1. Using flat-tip screwdriver, loosen six captive screws (A).
2. Using fingers, remove door assembly (B), preformed packing (C), and six retainer rings (D). Throw preformed packing (C) away.

Go on to Sheet 2

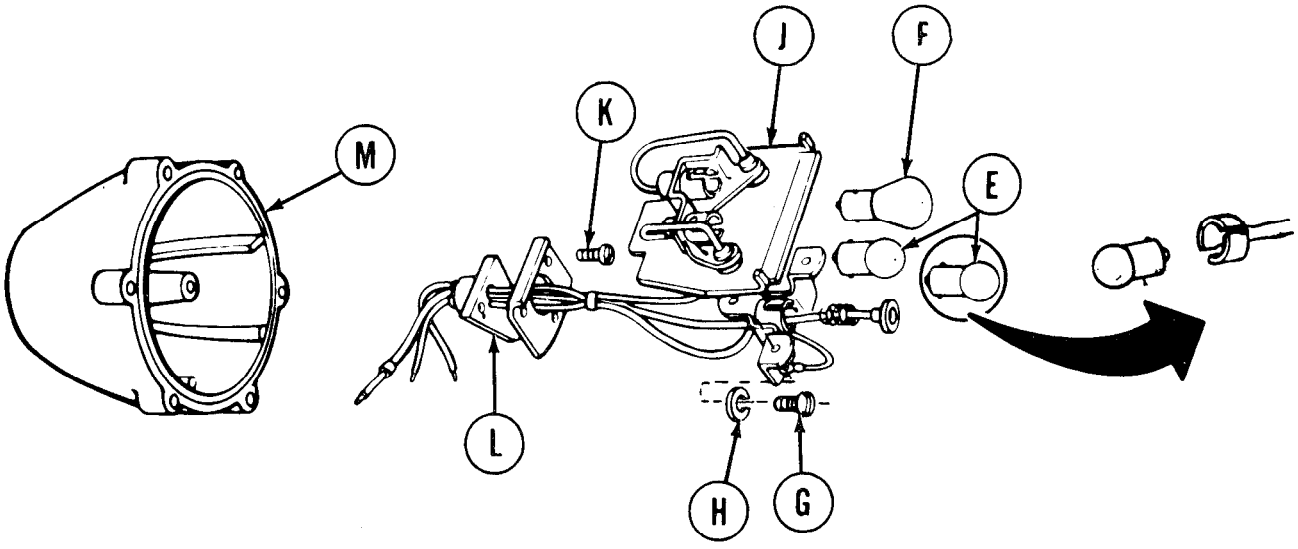
TA249148

LEFT TAILLIGHT - STOPLIGHT ASSEMBLY REPAIR (Sheet 2 of 3)

3. Remove two small stoplight and taillight lamps (E).

4. Remove large blackout drive lamp (F).

5. Using cross-tip screwdriver, remove two screws (G) and lockwashers (H) from socket and wiring assembly (J).



6. Using cross-tip screwdriver, remove three screws (K) from grommet (L).

7. Remove socket and wiring assembly (J) with fingers by pressing out grommet (L) from body assembly (M).

CLEANING AND INSPECTION:

1. Inspect taillight and components for cracks. Replace any cracked items.

2. Inspect for mechanical damage and wear. If damaged or worn, replace.

3. Inspect taillight assembly for corrosion. Corroded areas which cannot be cleaned with crocus cloth or steel wool is cause for replacement of that item.

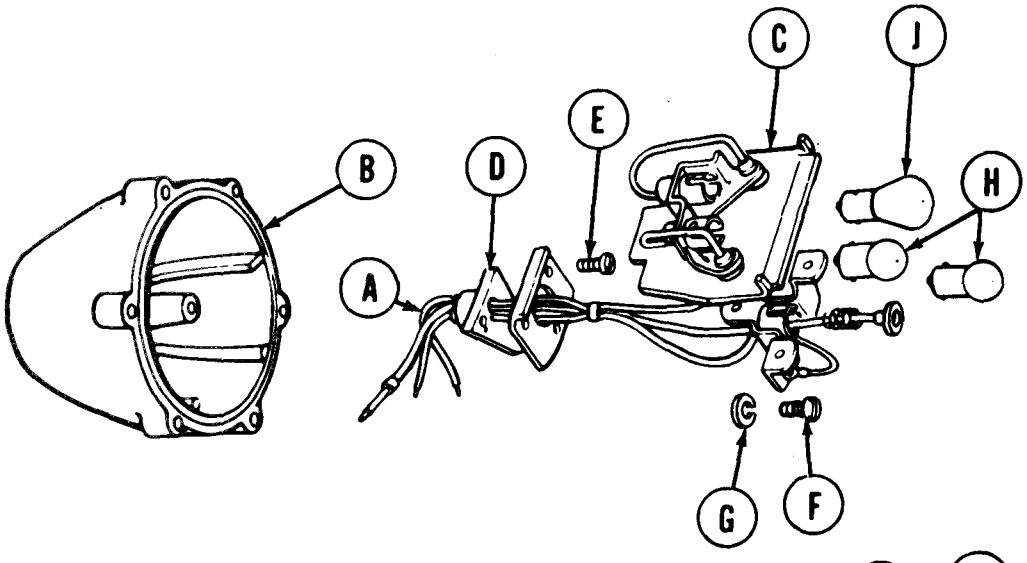
Go on to Sheet 3

TA249149

LEFT TAILLIGHT - STOPLIGHT ASSEMBLY REPAIR (Sheet 3 of 3)

ASSEMBLY:

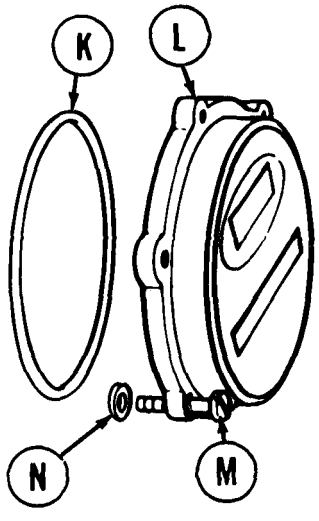
1. Insert three leads (A) through body assembly (B).
2. Install socket and wiring assembly (C) by pressing in grommet (D).
3. Using cross-tip screwdriver, install three screws (E).
4. Using cross-tip screwdriver, install two screws (F) and lockwashers (G).



5. Install three lamps (H) and (J).
6. Coat preformed packing gasket (K) with silicone compound before installation.
7. Place new preformed packing (K) on door assembly (L).

NOTE

Wires are located at the bottom of housing (B) for positioning of door assembly (L).



8. Using flat-tip screwdriver, install six screws (M), door assembly (L), and six retainer rings (N) on body assembly (B).
9. Install lamp assembly (page 10-205).
10. Check taillight for operation (TM 5-5420-202-10).

End of Task

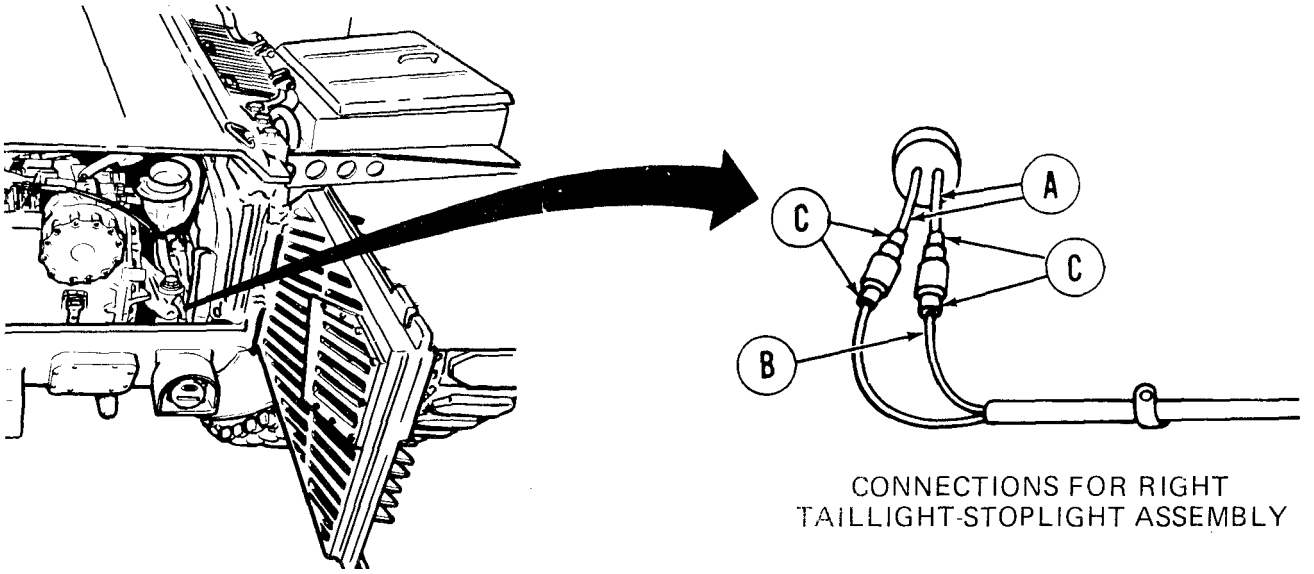
TA249150

RIGHT TAILLIGHT - STOPLIGHT ASSEMBLY REPLACEMENT (Sheet 1 of 3)

TOOLS: 9/16 in. combination box and open end wrench

SUPPLIES: Silicone compound (Item 32, Appendix D)
1/2 in. masking tape (Item 58, Appendix D)
Pencil (Item 71, Appendix D)
Lockwashers (2 required)

PRELIMINARY PROCEDURES: Remove transmission shroud (page 9-2)



CONNECTIONS FOR RIGHT TAILLIGHT-STOPLIGHT ASSEMBLY

REMOVAL:

NOTE

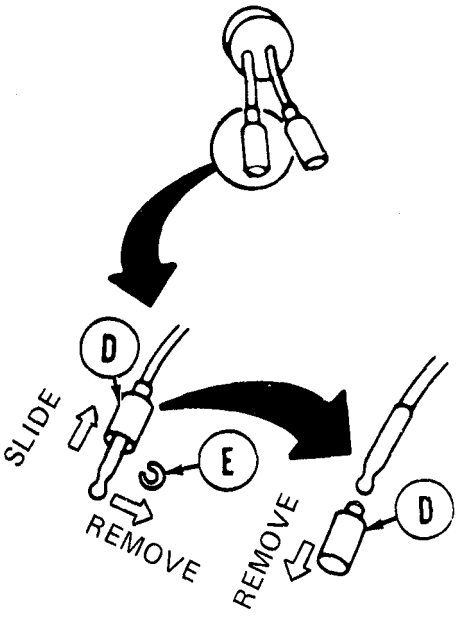
Inspect leads (A) and leads (B) for numbered tags (C) 23 and 24. If leads do not have tags, use masking tape and pencil to number leads.

1. Reach through exhaust door opening and using fingers disconnect two leads (A) from hull connectors (B).
2. Slide two connector shells (D) back on taillight leads to expose two slotted washers (E).

NOTE

Lubricant may be needed on leads (A) to remove shells (D).

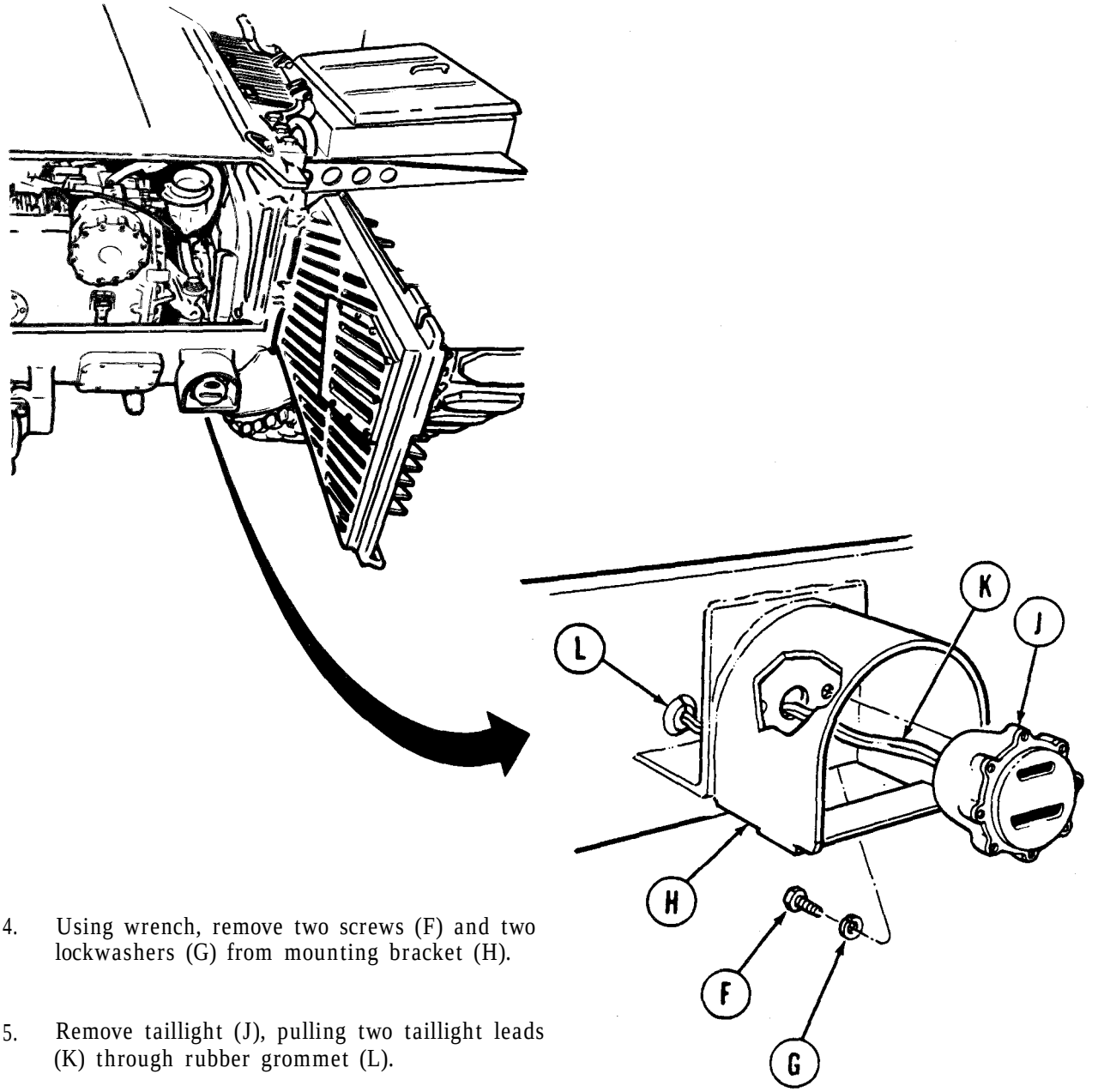
3. Remove two slotted washers (E) and two shells (D).



TA249151

Go on to Sheet 2

RIGHT TAILLIGHT - STOPLIGHT ASSEMBLY REPLACEMENT (Sheet 2 of 3)



4. Using wrench, remove two screws (F) and two lockwashers (G) from mounting bracket (H).

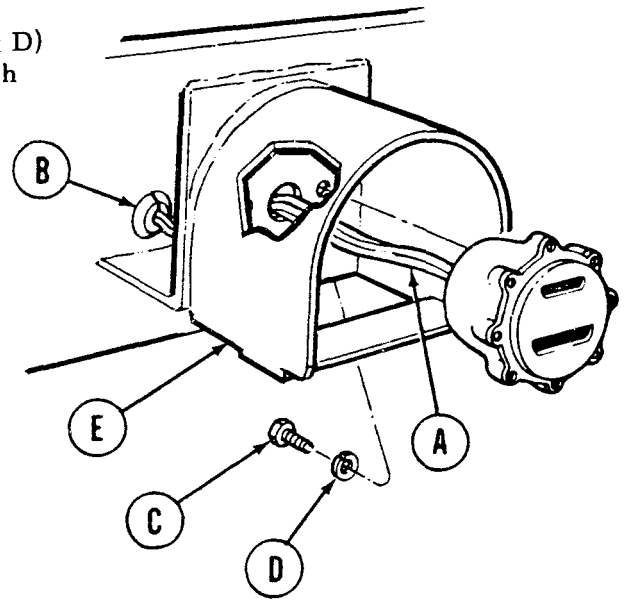
5. Remove taillight (J), pulling two taillight leads (K) through rubber grommet (L).

TA249152

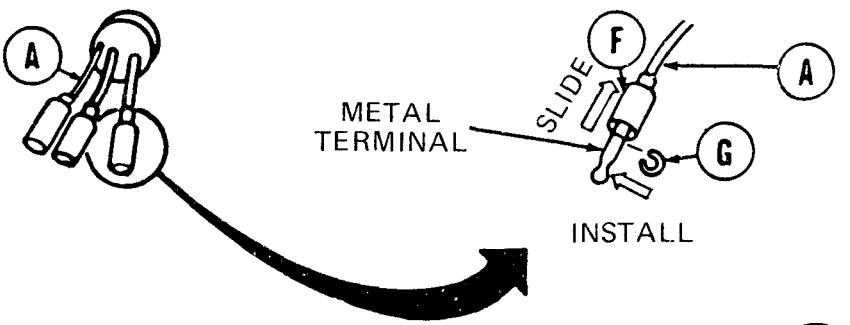
RIGHT TAILLIGHT - STOPLIGHT ASSEMBLY REPLACEMENT (Sheet 3 of 3)

INSTALLATION:

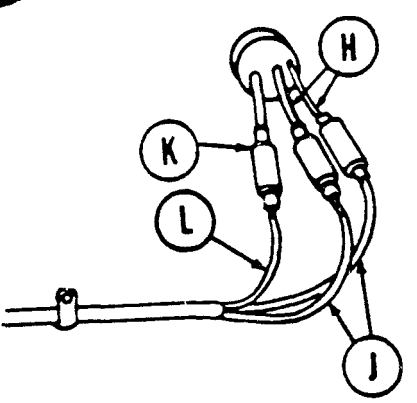
1. Using silicone compound (Item 32, Appendix D) on taillight leads (A), insert three leads through rubber grommet (B).
2. Using wrench, install two screws (C) and two lock washers (D) on mounting bracket (E).



3. Slide three shells (F) on taillight leads (A).
4. Install three slotted washers (G) on leads (A) behind metal terminal.



5. Connect two tagged or taped taillight leads (H) to hull connectors number 22 and 24 (J).
6. Connect remaining lead (K) to hull connector number 21 (L).
7. Install transmission shroud (page 9-6).
8. Check for proper taillight operation (TM 5-5420-202-10).



End of Task

TA249153

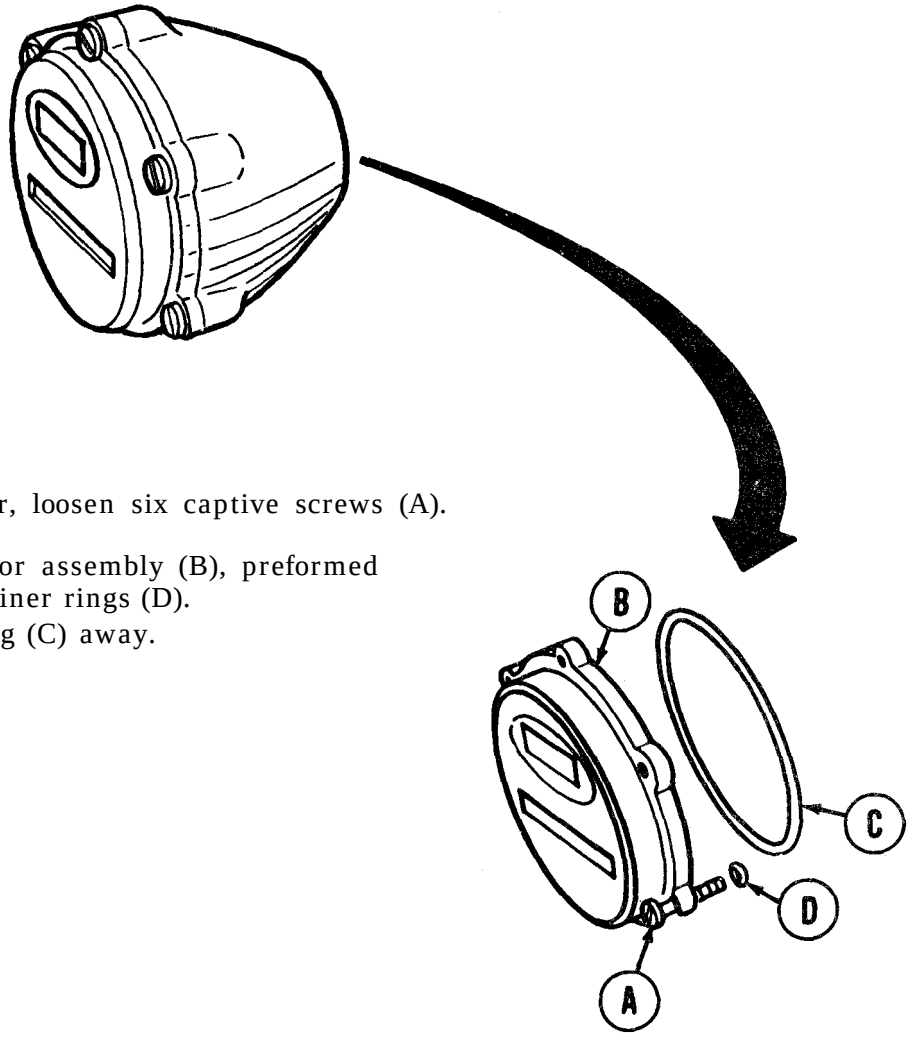
RIGHT TAILLIGHT - STOPLIGHT ASSEMBLY REPAIR (Sheet 1 of 3)

TOOLS: Flat-tip screwdriver
Cross-tip screwdriver

SUPPLIES: Crocus cloth (Item 14, Appendix D)
Silicone compound (Item 32, Appendix D)
Preformed packing
Lockwashers (2 required)

REFERENCES: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Lamp replacement (steps 1 through 4) can be accomplished with taillight on vehicle
Remove taillight from vehicle for complete repair (page 10-210).



DISASSEMBLY:

1. Using flat-tip screwdriver, loosen six captive screws (A).
2. Using fingers, remove door assembly (B), preformed packing (C), and six retainer rings (D). Throw preformed packing (C) away.

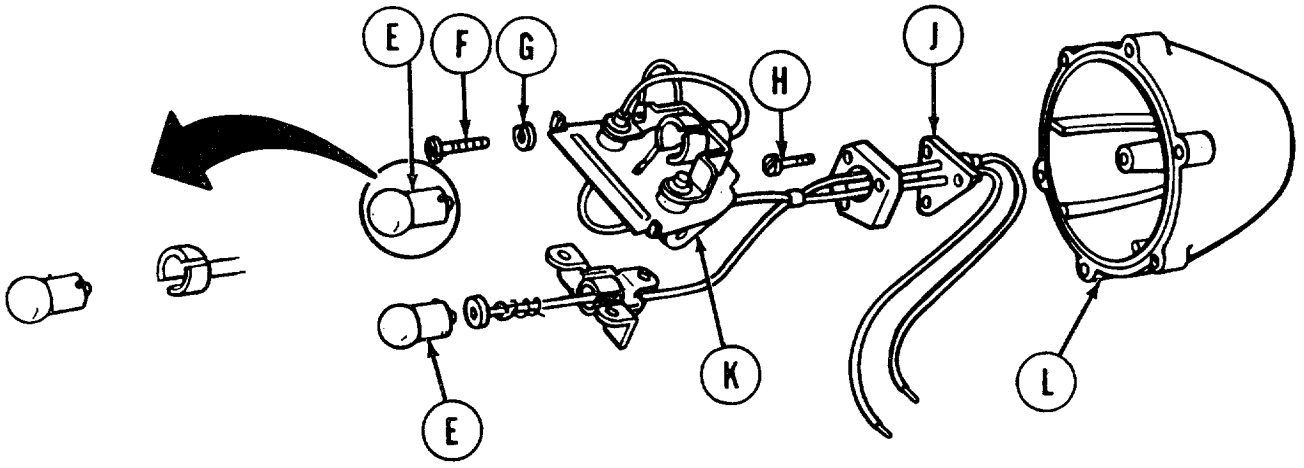
TA249154

Go on to Sheet 2

RIGHT TAILLIGHT - STOPLIGHT ASSEMBLY REPAIR (Sheet 2 of 3)

3. Remove two stoplight and taillight lamps (E).

4. Using cross-tip screwdriver, remove two screws (F) and two lockwashers (G).



5. Using cross-tip screwdriver, remove three screws (H) from grommet (J).

6. Remove socket and wiring assembly (K) with fingers by pressing out grommet (J) from body assembly (L).

CLEANING AND INSPECTION:

1. Inspect taillight assembly for corrosion. Corroded areas whcih cannot be cleaned with crocus cloth or steel wool are cause for replacement of that item.

2. Inspect taillight and components for cracks. If any items are cracked, replace.

3. Inspect for mechanical damage and wear. If damaged or worn, replace.

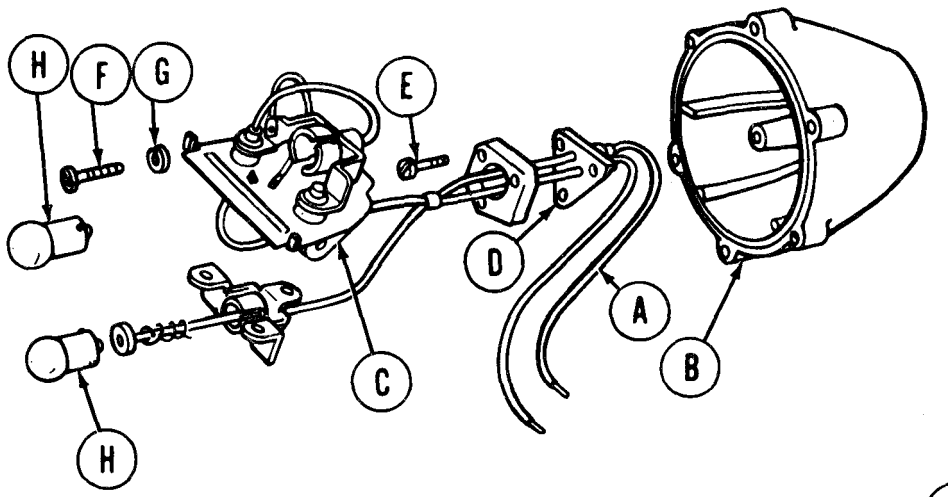
Go on to Sheet 3

TA249155

RIGHT TAILLIGHT - STOPLIGHT ASSEMBLY REPAIR (Sheet 3 of 3)

ASSEMBLY:

1. Insert two leads (A) through body assembly (B).
2. Install socket and wiring assembly (C) by pressing in grommet (D).
3. Using cross-tip screwdriver, install three screws (E).
4. Using cross-tip screwdriver, install two screws (F) and two lockwashers (G).

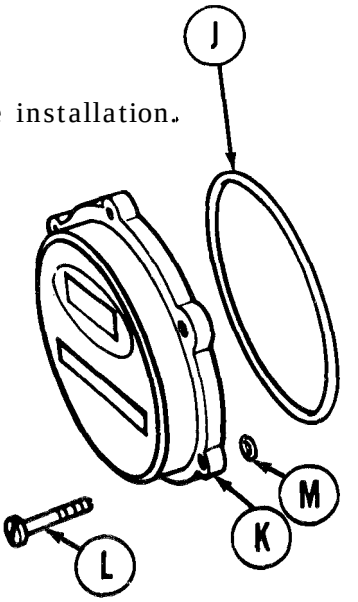


5. Install two lamps (H).
6. Coat preformed packing gasket (J) with silicone compound before installation.
7. Place preformed packing (J) in door assembly (K).

NOTE

Wires are located at the bottom of body assembly (B) for positioning of door assembly (K) as shown.

8. Using flat-tip screwdriver, install six screws (L), door assembly (K), and six retainer rings (M).
9. Install lamp assembly (page 10-211).
10. Check taillight for operation (TM 5-5420-202-10).



End of Task

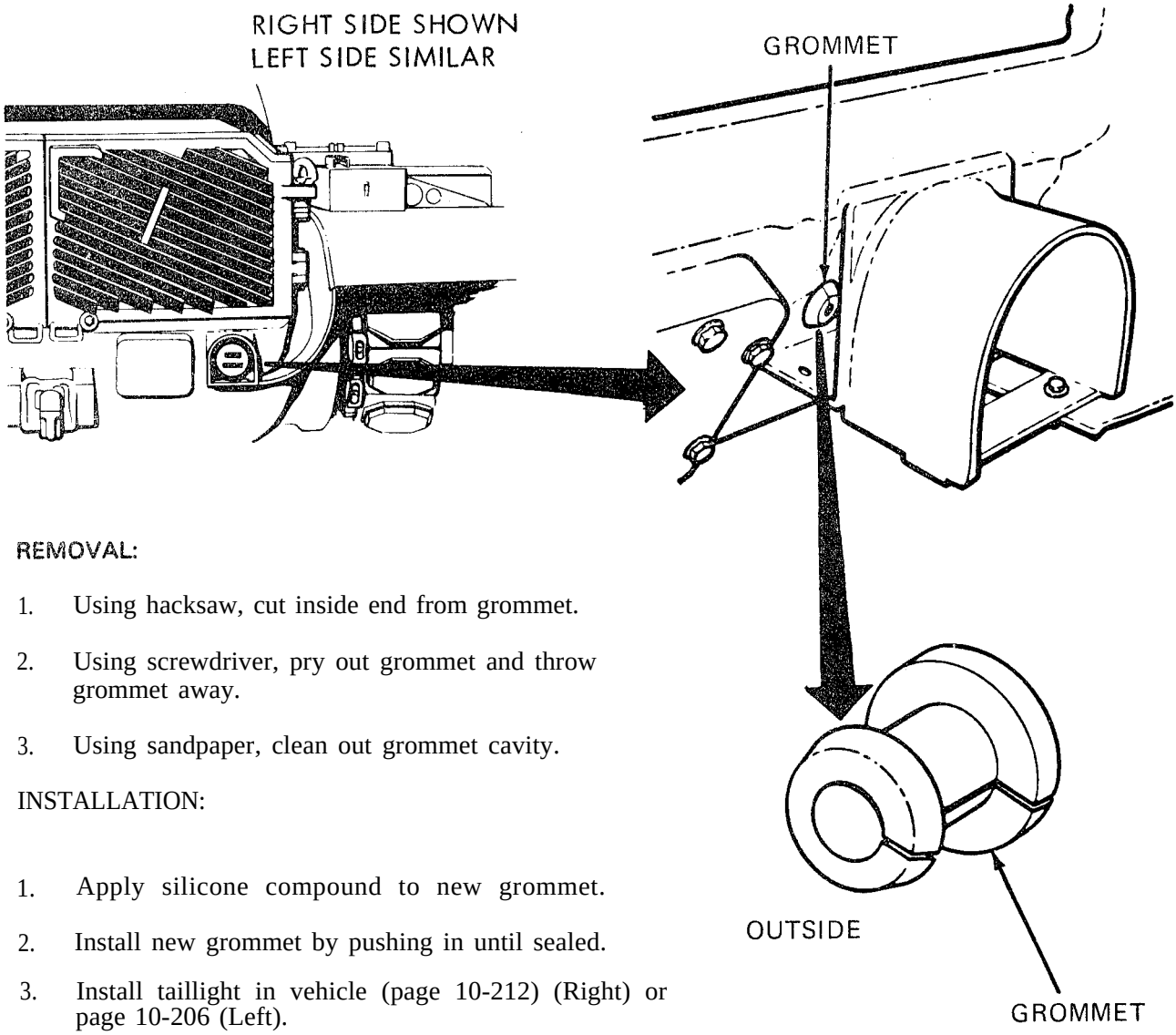
TA249156

TAILLIGHT GROMMET REPLACEMENT (Sheet 1 of 1)

TOOLS: Flat-tip screwdriver
Sandpaper
Hand hacksaw

SUPPLIES: Silicone compound (Item 32, Appendix D)
Grommet

PRELIMINARY PROCEDURES: Remove transmission shroud (page 9-2)
Remove tailight from vehicle (page 10-210) (Right) on page 10-204 (Left)



REMOVAL:

1. Using hacksaw, cut inside end from grommet.
2. Using screwdriver, pry out grommet and throw grommet away.
3. Using sandpaper, clean out grommet cavity.

INSTALLATION:

1. Apply silicone compound to new grommet.
2. Install new grommet by pushing in until sealed.
3. Install taillight in vehicle (page 10-212) (Right) or page 10-206 (Left).
4. Install transmission shroud (page 9-6).

End of Task

TA249157

HEADLIGHT ADJUSTMENT (Sheet 1 of 2)

TOOLS: 7/16 in. combination box and open end wrench
9/16 in. combination box and open end wrench
50 ft measuring tape

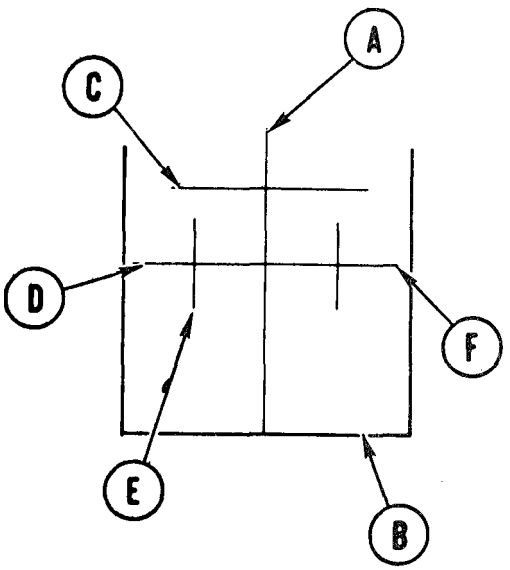
SUPPLIES: Chalk (Item 11, Appendix D)

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Park vehicle on flat ground 25 ft from flat vertical wall

ADJUSTMENT:

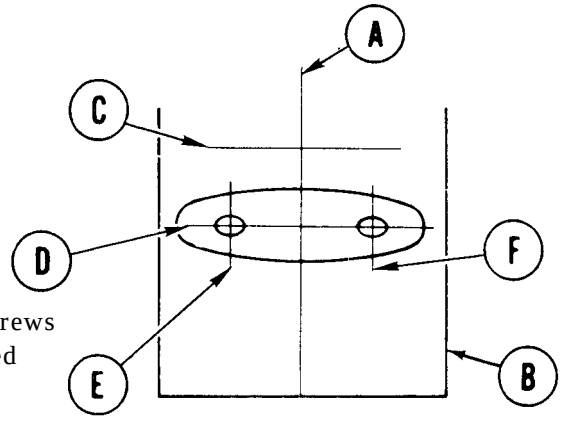
1. Using measuring tape, locate center of vehicle.
2. Using chalk, draw line (A) on ground and up vertical wall (B).
3. Using measuring tape, measure distance from ground to center of headlight.
4. Using chalk, draw line (C) on wall (B) of the distance found in step 3.
5. Using measuring tape, measure down 27-1/4 inches from line (C). Using chalk, draw line (D) on wall (B).
6. Using measuring tape, measure distance from center of vehicle to center of clear lens on left headlight.
7. Using chalk, draw line (E) that distance found in step 6 on wall (B).
8. Perform steps 6 and 7 for right side. Using chalk, draw line (F) on wall (B).



Go to Sheet 2

TA249158

HEADLIGHT ADJUSTMENT (Sheet 2 of 2)



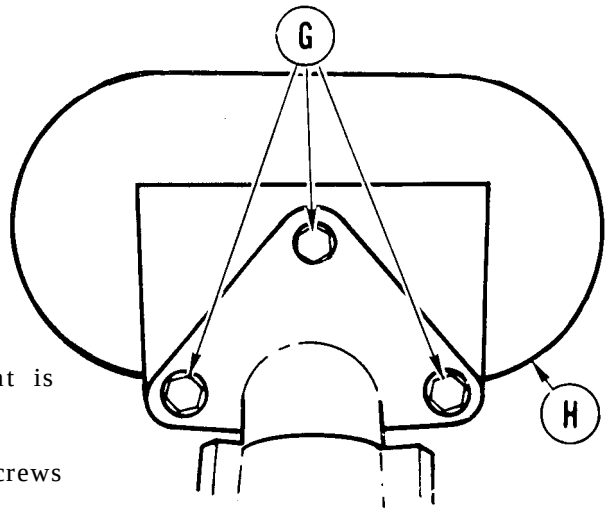
9. Turn on service drive headlights, low beam (TM 5-5420-202-10).

10. Center of maximum light intensity should be centered on line (D).

11. If not, using 9/16 inch wrench, loosen three screws (G) and adjust by tilting headlight (H) to desired angle.

NOTE

Adjust both left and right headlights in same manner.



12. Using 9/16 inch wrench, tighten three screws (G).

13. Check to see if light intensity for left headlight is centered on intersection of lines (D and E).

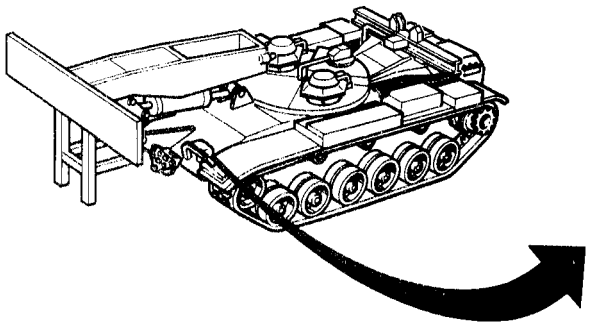
14. If not, using 7/16 inch wrench, loosen three screws (J) at base of headlight.

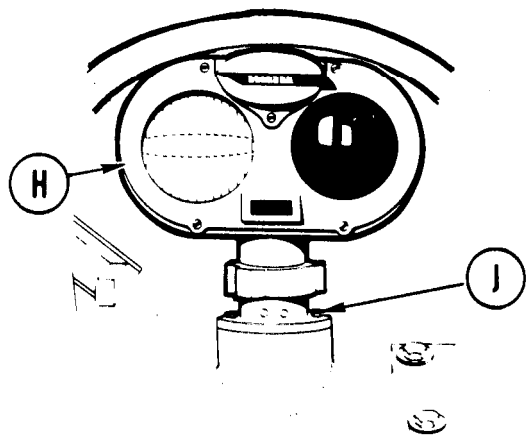
15. Turn headlight (H) until in proper position.

16. Using 7/16 inch wrench, tighten three screws (J) when adjusted.

17. Repeat steps 13 through 16 for right headlight using lines (D and F).

18. Turn off lights (TM 5-5420-202-10).





End of Task

TA249159

ENGINE OIL HIGH TEMPERATURE THERMOSTATIC SWITCH REPLACEMENT (Sheet 1 of 2)

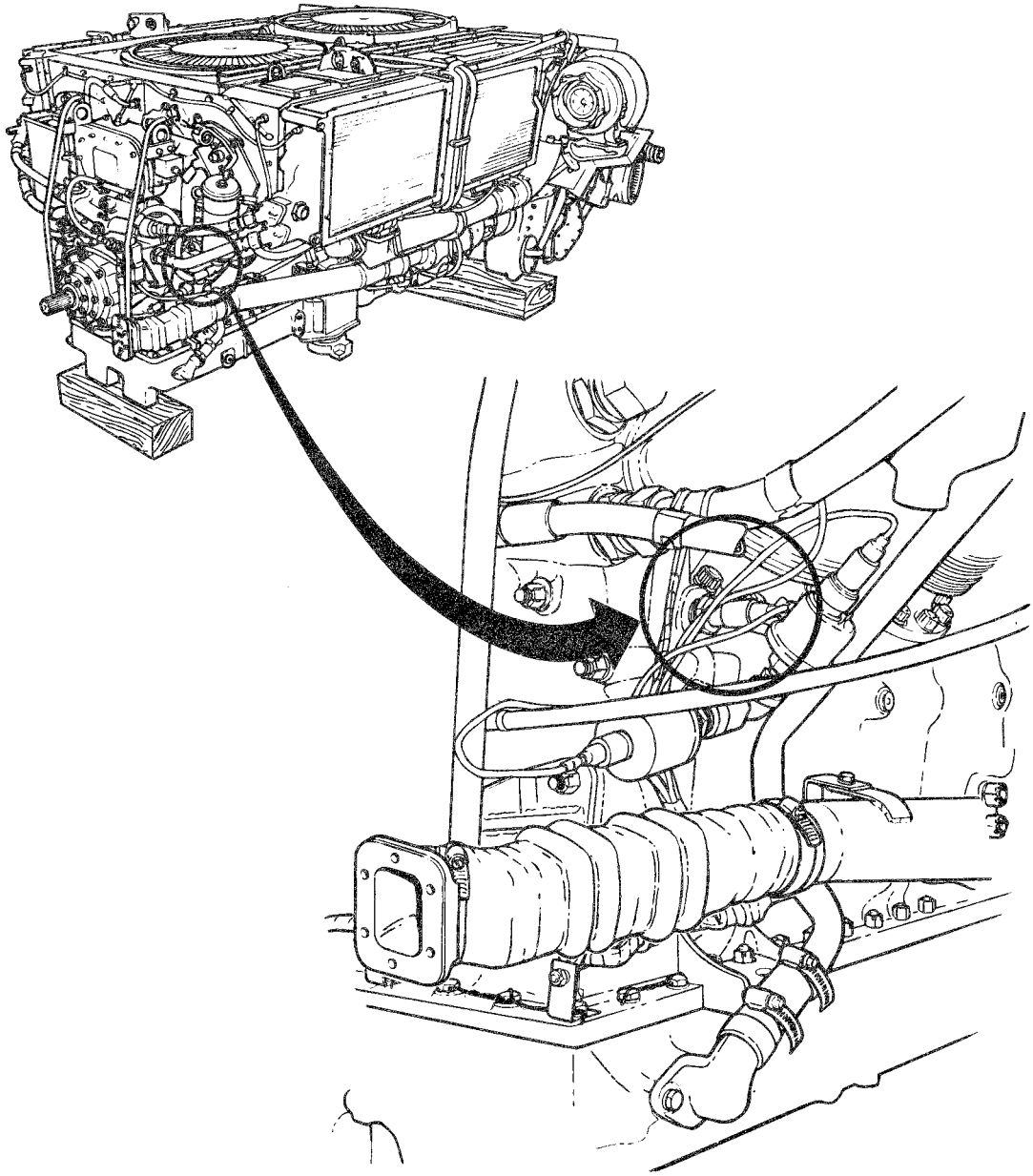
TOOLS: 15/16 in. deep well socket with 1/2 in. drive
Ratchet with 1/2 in. drive

SPECIAL TOOLS: Ground hop kit (Item 31, Chapter 3, Section I)

SUPPLIES: Rags (Item 65, Appendix D)
Sealing Compound (Item 20, Appendix D)

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Remove powerplmt (page 5-2)



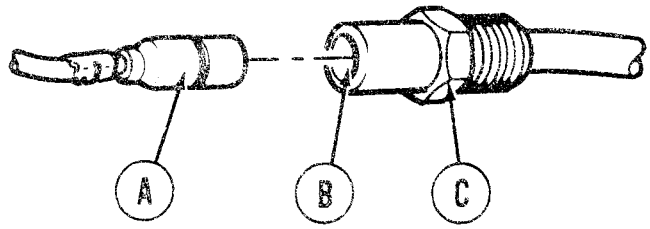
Go on to Sheet 2

TA249160

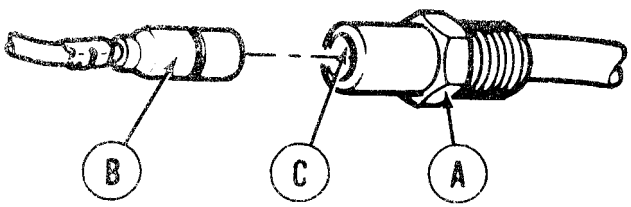
ENGINE OIL HIGH TEMPERATURE THERMOSTATIC SWITCH REPLACEMENT (Sheet 2 of 2)

REMOVAL :

1. Place rags under switch.
2. Pull socket or rubber insulated connector (A) from switch cap (B).
3. Using socket, remove switch (C) from engine.



1. Using sealing compound, lightly coat threads of new switch.



2. Using socket, install new switch (A) into engine.
3. Push socket of rubber insulated connector (B) into switch cap (C).
4. Remove rags from under switch.

5. Connect engine for powerplant ground hop (page 5-26).
6. Start and run engine. Observe temperature indicator for normal oil temperature (TM 5-5420-202-10).
7. Shut down engine. Disconnect engine from powerplant ground hop (page 5-40).
8. Install powerplant (page 5-14).

End of Task

TA249161

ENGINE HIGH OIL PRESSURE TRANSMITTER REPLACEMENT (Sheet 1 of 3)

PROCEDURE INDEX

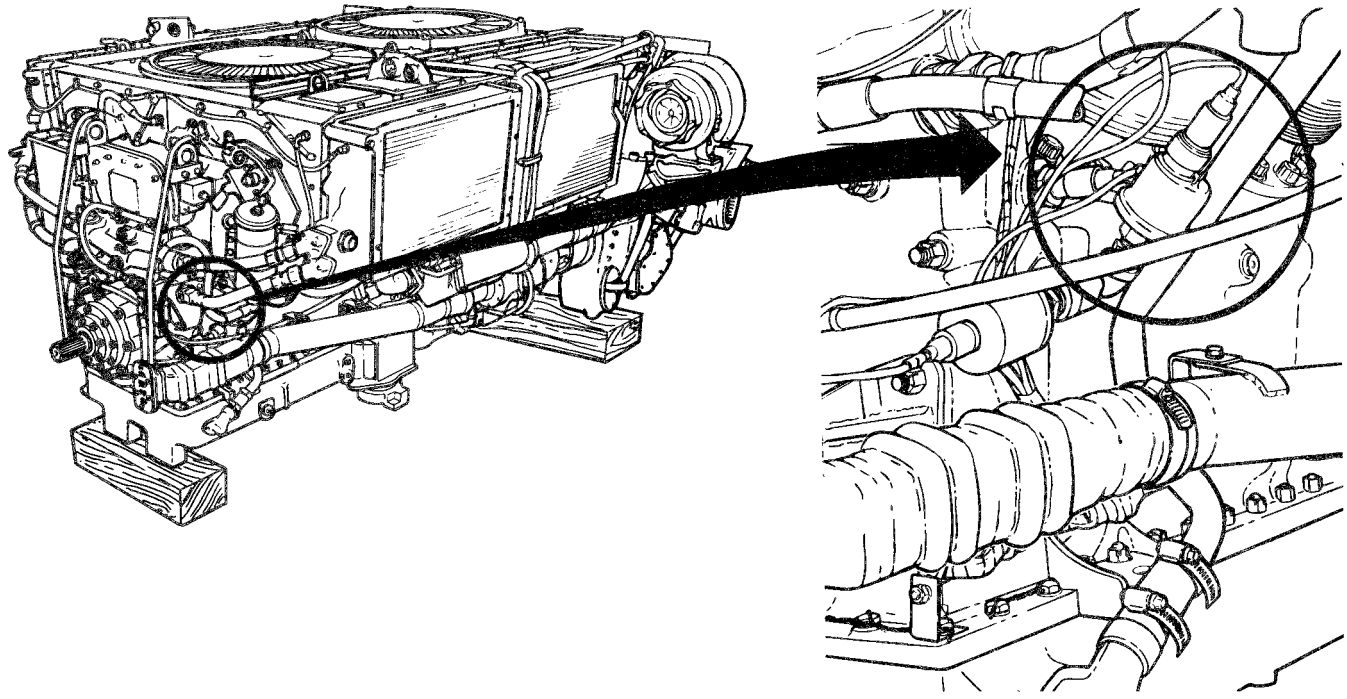
TOOLS: 7/8 in. combination box and open end wrench
3/4 in. combination box and open end wrench
10 in. pipe wrench

SPECIAL TOOLS: Ground hop kit (Item 31, Chapter 3, Section I)

SUPPLIES: Rags (Item 65, Appendix D)
Sealing compound (Item 20, Appendix D)

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Remove powerplant (page 5-2)



Go on to Sheet 2

TA249162

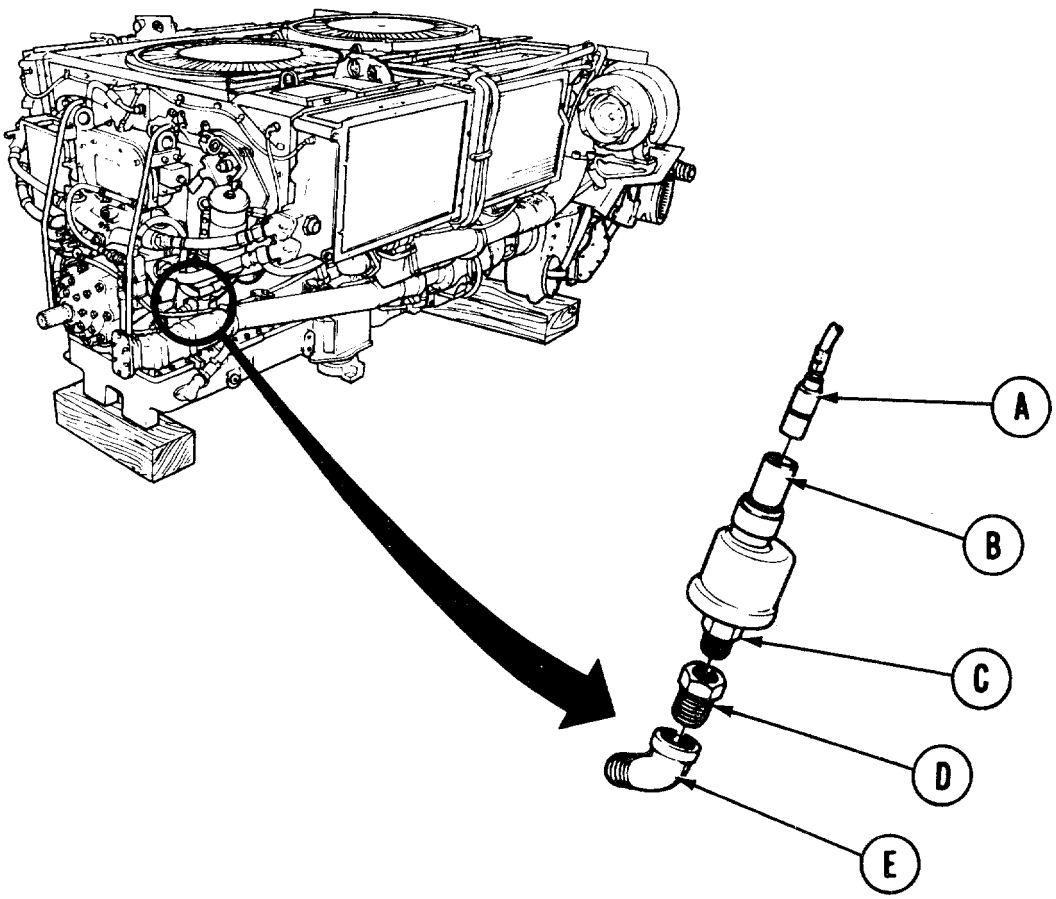
ENGINE HIGH OIL PRESSURE TRANSMITTER REPLACEMENT (Sheet 2 of 3)

REMOVAL:

1. Place rags under engine high oil pressure transmitter.
2. Pull socket of rubber insulated connector (A) from transmitter cap (B).
3. Using 7/8 inch wrench, remove transmitter (C) from pipe bushing (D).
4. Using 3/4 inch wrench, remove pipe bushing (D) from elbow (E).
5. Using pipe wrench, remove elbow (E) from engine.

INSPECTION:

Check pipe bushing (D) and elbow (E) for cracks and crossed threads. Replace as required.



Go on to Sheet 3

TA249163

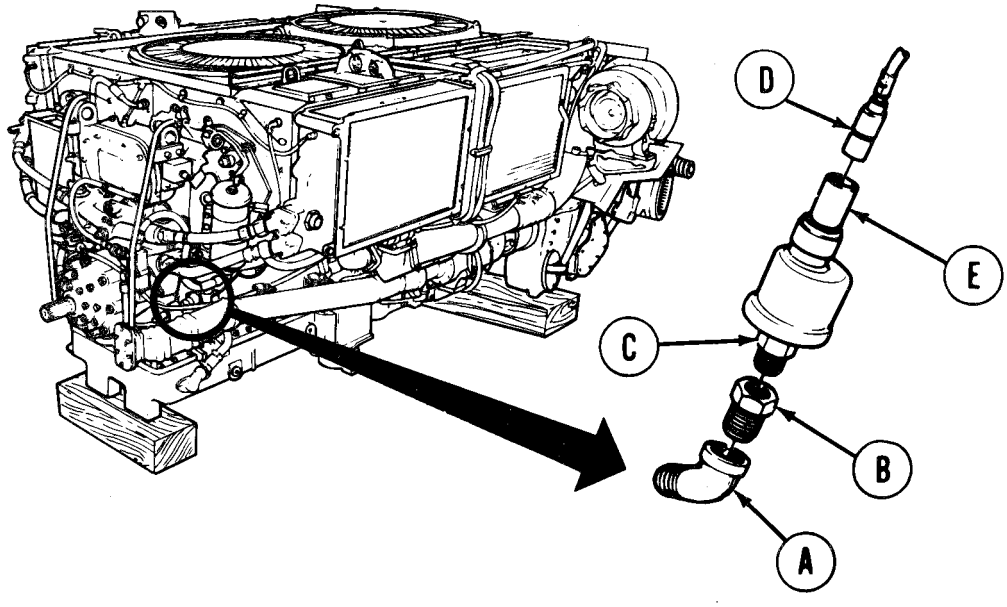
ENGINE HIGH OIL PRESSURE TRANSMITTER REPLACEMENT (Sheet 3 of 3)

INSTALLATION:

NOTE

Prior to installation, lightly coat male threads of all components with sealing compound.

1. Using pipe wrench, install elbow (A) to engine.
2. Using 3/4 inch wrench, install pipe bushing (B) to elbow (A).
3. Using 7/8 inch wrench, install new transmitter (C) to pipe bushing (B).
4. Push socket of rubber insulated connector (D) into transmitter cap (E).
5. Remove rags from under engine high oil pressure transmitter.
6. Connect engine for powerplant ground hop (page 5-26).



7. Start and run engine. Observe oil pressure indicator for normal oil pressure (TM 5-5420-202-10).
8. Shut down engine. Disconnect engine from powerplant ground hop (page 5-40).
9. Install powerplant (page 5-14).

End of Task

TA249164

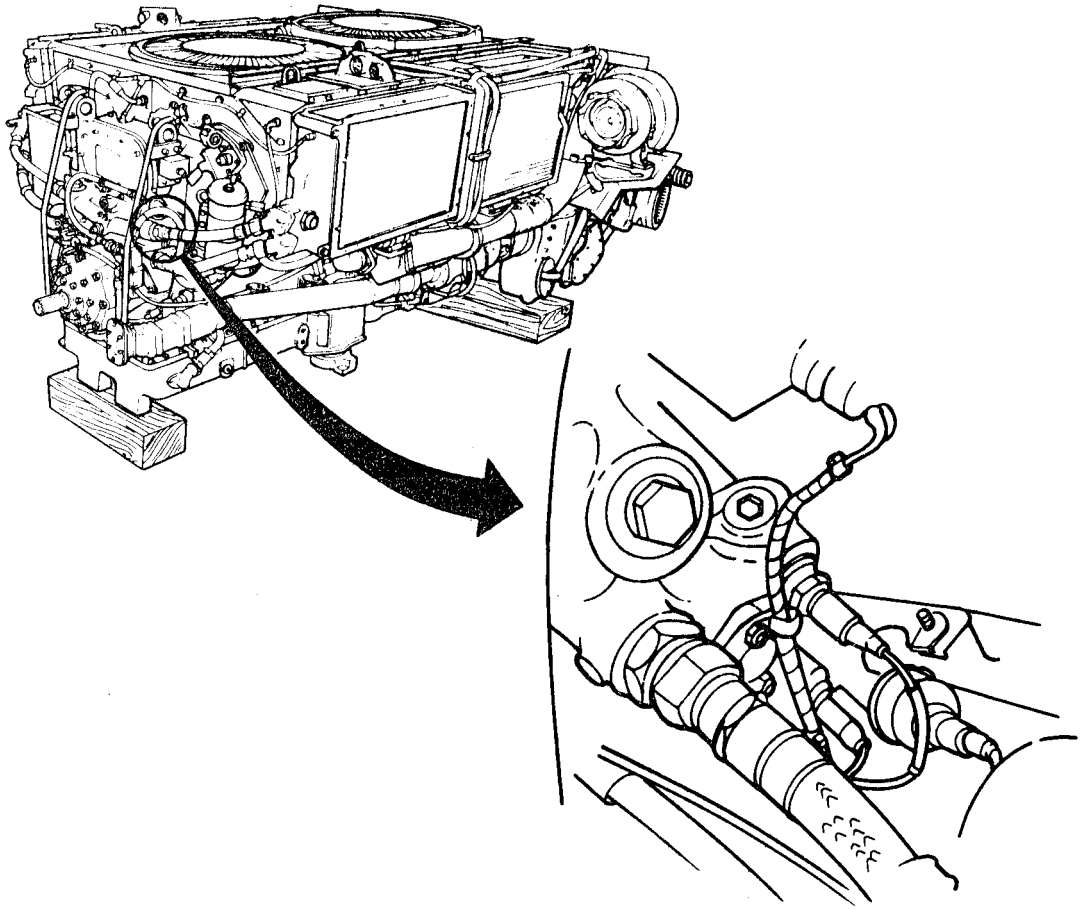
ENGINE OIL TEMPERATURE TRANSMITTER REPLACEMENT (Sheet 1 of 3)

TOOLS: 1/2 in. combination box and open end wrench
15/16 in. combination box and open end wrench

SPECIAL TOOLS: Ground hop kit (Item 31, Chapter 3, Section I)

SUPPLIES: Rags (Item 65, Appendix D)
Sealing compound (Item 20, Appendix D)

PRELIMINARY PROCEDURES: Remove powerplant (page 5-2)



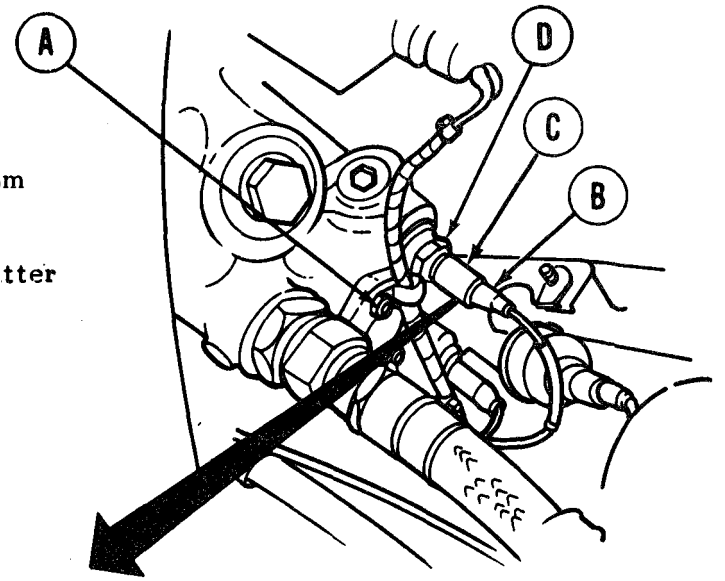
Go on to Sheet 2

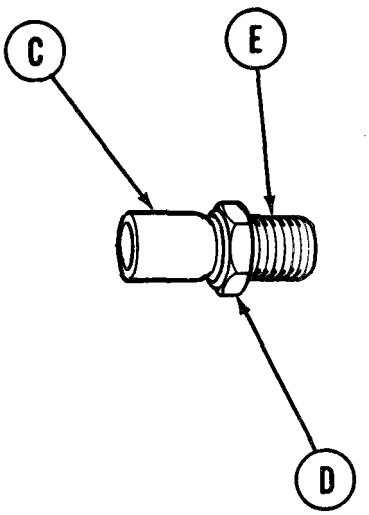
TA249165

ENGINE OIL TEMPERATURE TRANSMITTER REPLACEMENT (Sheet 2 of 3)

REMOVAL:

1. Place rags under transmitter.
2. Using 1/2 inch wrench, remove self-locking nut and clamp (A).
3. Pull socket of rubber insulated connector (B) from switch cap (C).
4. Using 15/16 inch wrench, remove transmitter (D) from engine.





5. Check interior and protruding part of transmitter socket (E) for cracks and crossed threads. Replace if necessary.

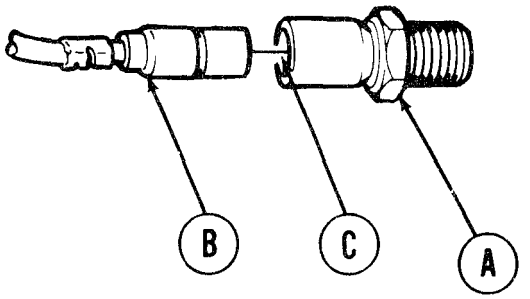
INSTALLATION:

1. Lightly coat threads of new transmitter with sealing compound.

Go on to Sheet 3

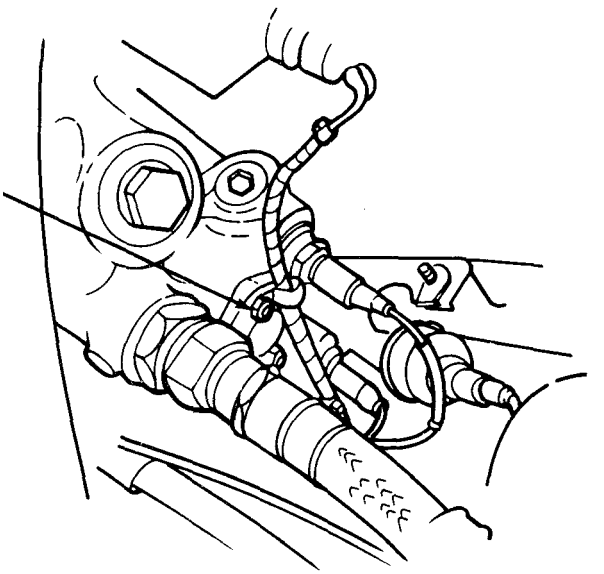
TA249166

ENGINE OIL TEMPERATURE TRANSMITTER REPLACEMENT (Sheet 3 of 3)



2. Using 15/16 inch wrench, install, new transmitter (A) into engine.

3. Push socket of rubber insulated connector (B) into transmitter cap (C).



4. Remove rags from under transmitter.

5. Using 1/2 inch wrench, install self-locking nut and clamp (D).

6. Connect engine for powerplant ground hop (page 5-26).

7. Start and run engine. Observe oil temperature indicator for normal oil temperature.

8. Shut down engine. Disconnect engine from powerplant ground hop (page 5-40).

9. Install powerplant (page 5-14).

End of Task

TA249167

STARTER LOW VOLTAGE RELAY SOLENOID REPLACEMENT (Sheet 1 of 2)

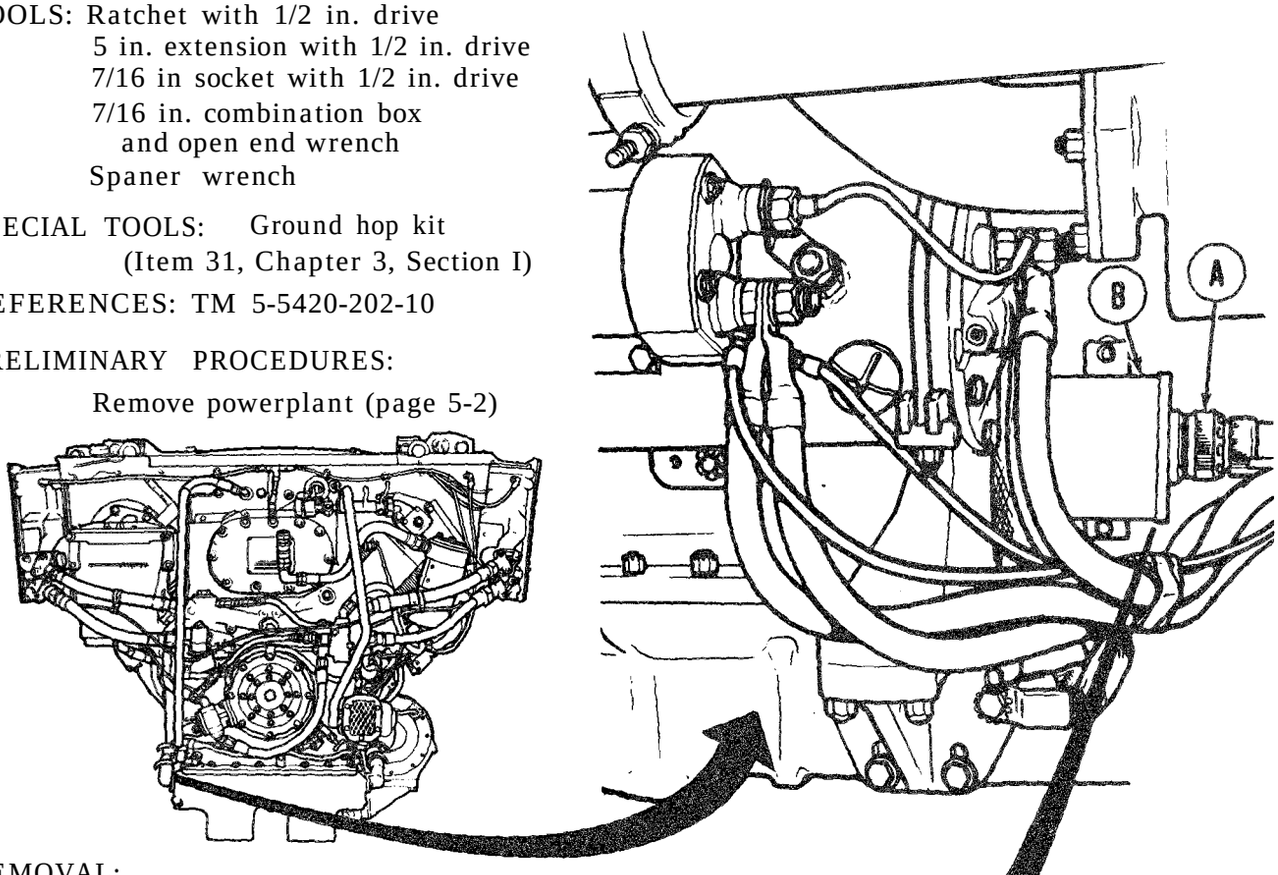
TOOLS: Ratchet with 1/2 in. drive
5 in. extension with 1/2 in. drive
7/16 in socket with 1/2 in. drive
7/16 in. combination box and open end wrench
Spaner wrench

SPECIAL TOOLS: Ground hop kit (Item 31, Chapter 3, Section I)

REFERENCES: TM 5-5420-202-10

PRELIMINARY PROCEDURES:

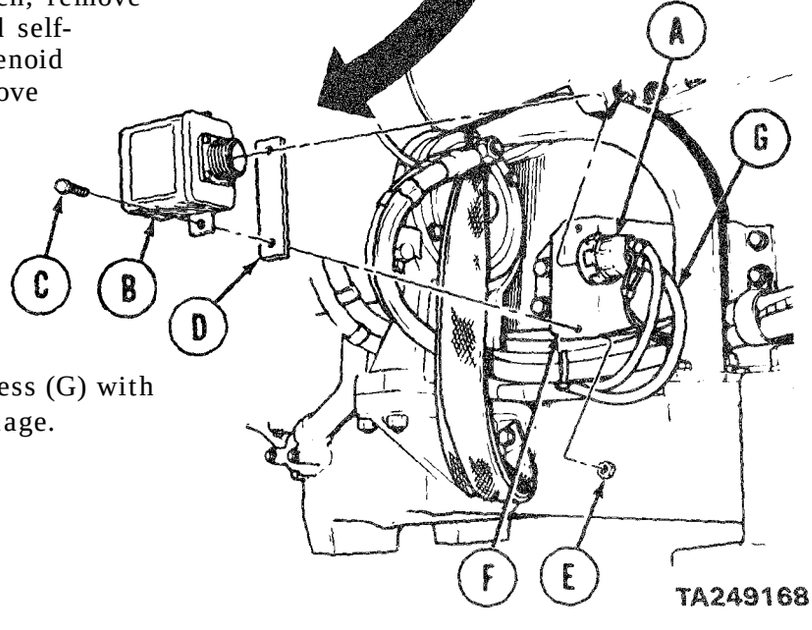
Remove powerplant (page 5-2)



REMOVAL:

1. Using spanner wrench unscrew electrical plug (A) from front of relay solenoid (B).

2. Using socket, extension, and wrench, remove two screws (C), insulators (D), and self-locking nuts (E) securing relay solenoid (B) to mounting bracket (F). Remove relay solenoid.



INSPECTION:

Inspect insulator (D) and wiring harness (G) with conector plug (A) for cracks or damage. Replace if damaged.

Go on to Sheet 2

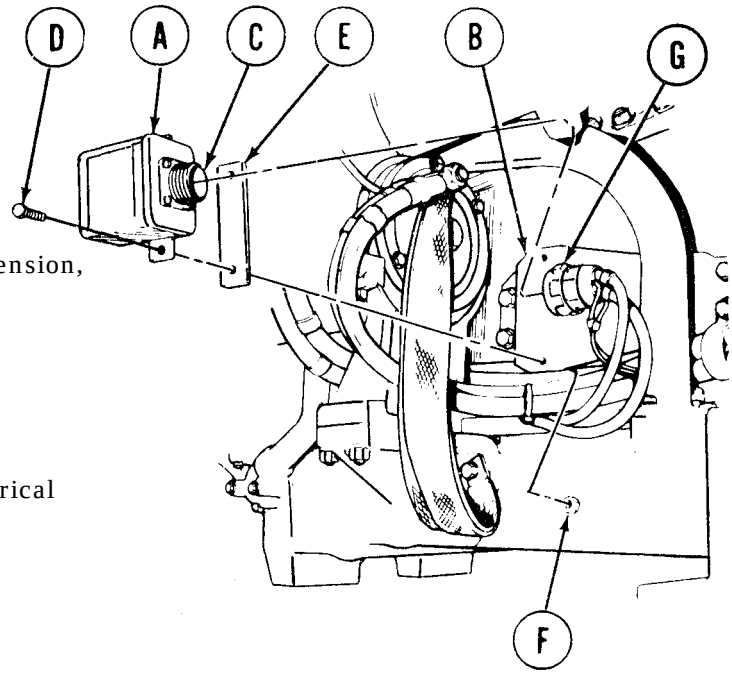
STARTER LOW VOLTAGE RELAY SOLENOID REPLACEMENT (Sheet 2 of 2)

INSTALLATION:

NOTE

Be sure insulator (E) are placed between relay solenoid (A) and engine mounting bracket (B) as shown.

1. Place relay solenoid (A) in position over mounting bracket (B) with the electrical plug (C) facing front. Using socket, extension, and wrench, secure solenoid (A) to mounting plate (B) with two screws (D), insulator (E), and self-locking nuts (F).

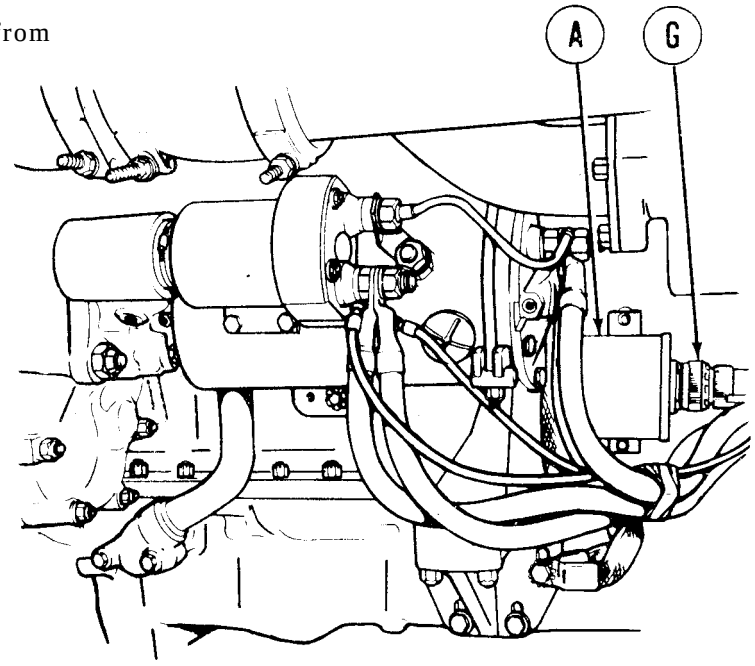


2. Screw electrical connectors (G) to electrical plug (C). Tighten, using spanner wrench.

TEST:

1. Connect powerplant for ground hop (page 5-26).
2. Start engine (TM 5-5420-202-10). Check to be sure engine starts smoothly.
3. Stop engine. Disconnect powerplant from powerplant ground hop (page 5-40).
4. Install powerplant (page 5-14).

End of Task

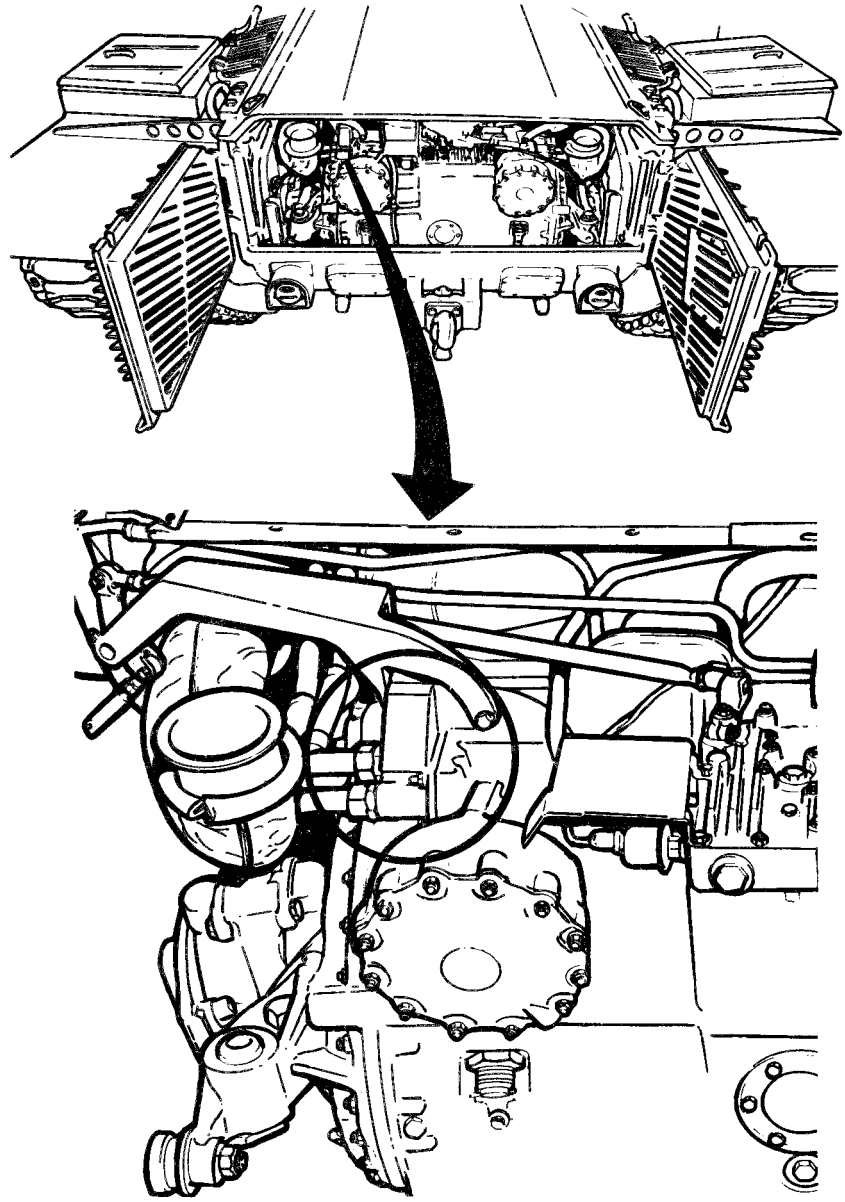


TA249169

TRANSMISSION OIL TEMPERATURE TRANSMITTER PROTECTOR REPLACEMENT (Sheet 1 of 2)

TOOLS: Ratchet with 1/2 in. drive
10 in. extension with 1/2 in. drive
9/16 in. socket with 1/2 in. drive
9/16 in. combination box and open end wrench

PRELIMINARY PROCEDURE: Remove transmission shroud (page 9-2)



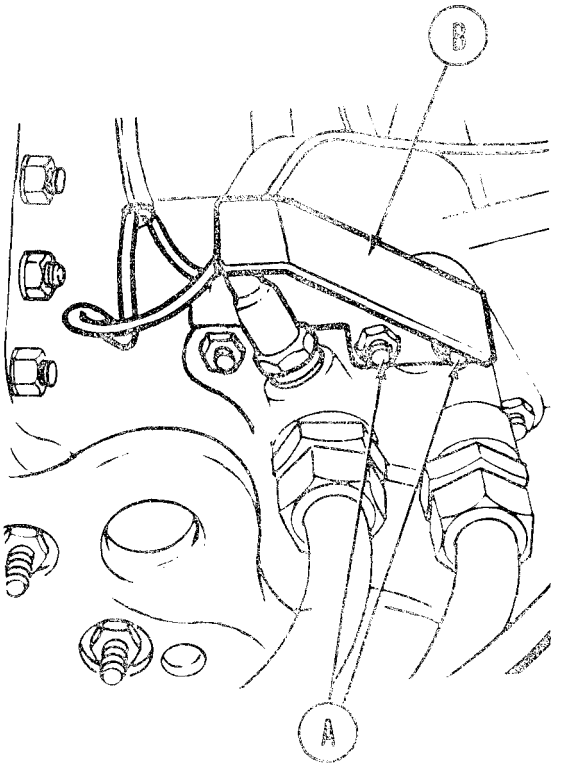
TA249170

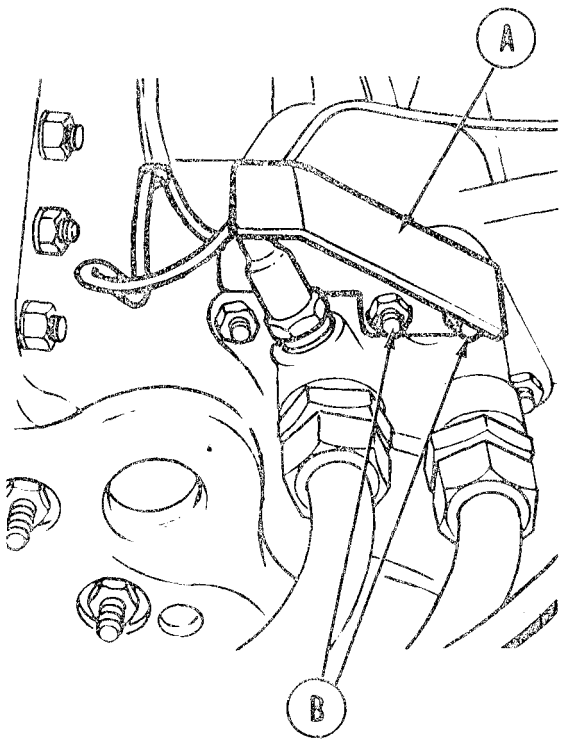
Go on to Sheet 2

TRANSMISSION OIL TEMPERATURE TRANSMITTER PROTECTOR REPLACEMENT (Sheet 2 of 2)

REMOVAL:

1. Using socket and extension or wrench, remove two nuts (A) holding transmission oil temperature transmitter protector (B) to transmission.
2. Remove transmission oil temperature transmitter protector (B) away from transmission.





INSTALLATION:

1. Position transmission oil temperature transmitter protector (A) onto transmission.
2. Using fingers start two nuts (B) to hold oil temperature transmitter protector (A) in place.
3. Using socket and extension or wrench install two nuts (B).

4. lnstall transmission shroud (page 9-6).

End of Task

TA249171

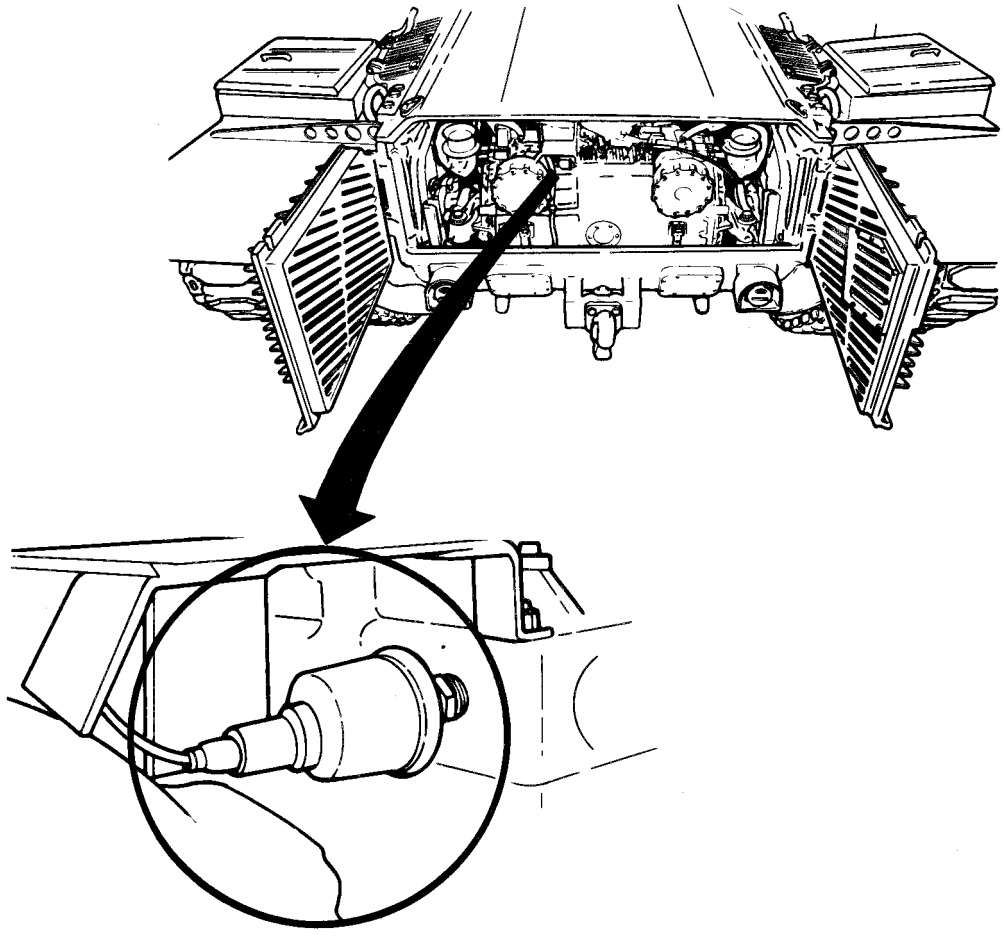
TRANSMISSION OIL PRESSURE TRANSMITTER REPLACEMENT (Sheet 1 of 3)

TOOLS: 11/16 in. combination box and open end wrench
7/8 in. combination box and open end wrench

SUPPLIES: Rags (Item 65. Appendix D)
Sealing compound (Item 20. Appendix D)

REFERENCES: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Remove transmission shroud (page 9-2).



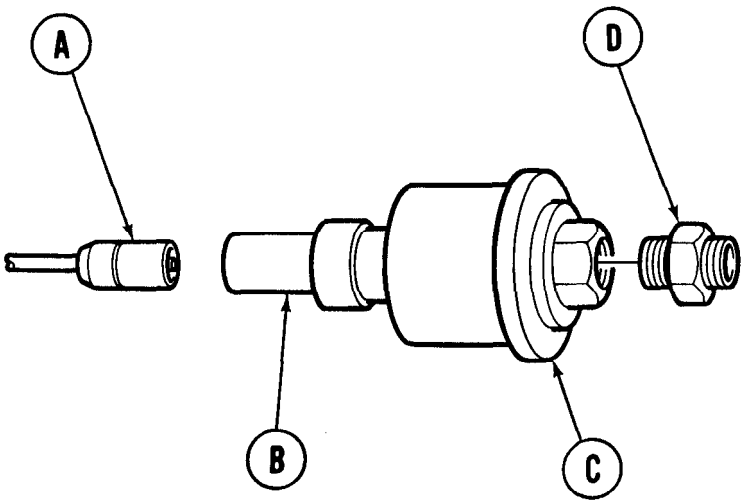
Go on to Sheet 2

TA249172

TRANSMISSION OIL PRESSURE TRANSMITTER REPLACEMENT (Sheet 2 of 3)

REMOVAL:

1. Place rags under transmitter.
2. Pull rubber insulated connector (A) from transmitter cap (B).
3. Using 7/8 inch wrench, remove transmitter (C) from bushing (D).
4. Using 3/4 inch wrench, remove bushing (D) from transmission socket.
5. Check bushing (D) for cracks and crossed threads. Replace if necessary.



TA249173

Go on to Sheet 3

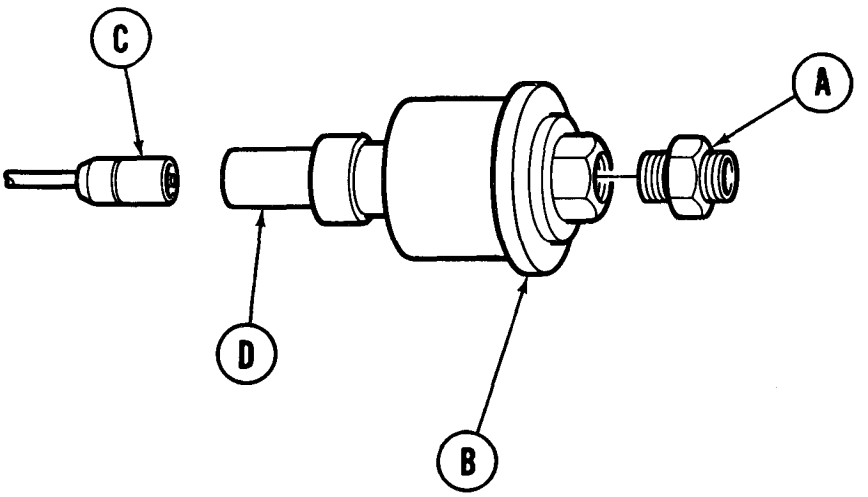
TRANSMISSION OIL PRESSURE TRANSMITTER REPLACEMENT (Sheet 3 of 3)

INSTALLATION:

NOTE

Prior to installation, lightly coat male threads of all components with sealing compound.

1. Using 11/16 inch wrench, install bushing (A) to transmission socket.
2. Using 7/8 inch wrench, install new transmitter (B) to bushing (A).
3. Push socket of rubber insulated connector (C) into transmitter cap (D).
4. Remove rags from under transmitter.
5. Start and run engine. Observe oil pressure indicator for normal oil pressure (TM 9-5420-202-10).
6. Stop engine (TM 5-5420-202-10).
7. Install transmission shroud (page 9-6).



End of Task

TA249174

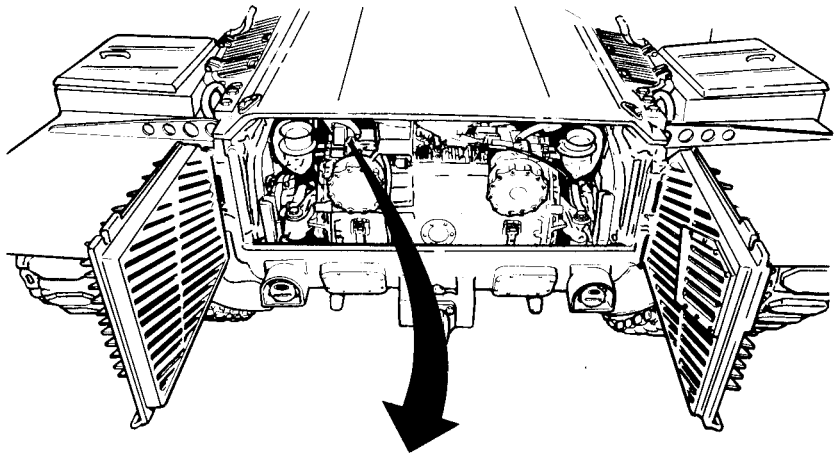
TRANSMISSION OIL TEMPERATURE TRANSMITTER REPLACEMENT (Sheet 1 of 2)

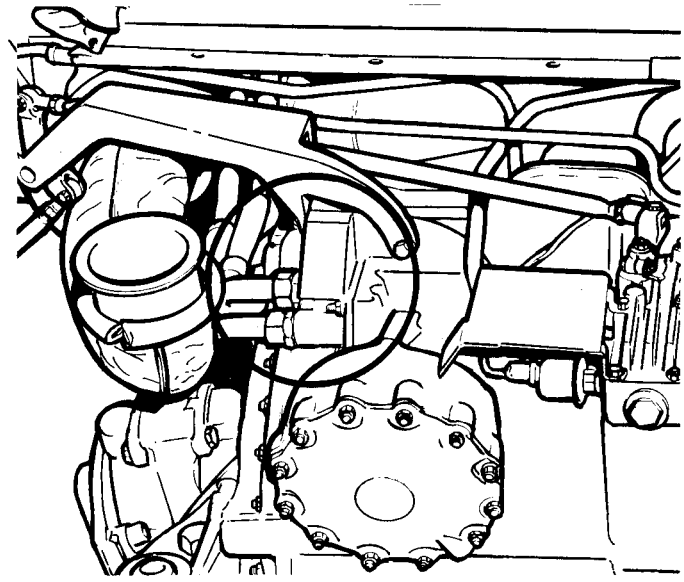
TOOLS: 15/16 in. combination box and open end wrench

SUPPLIES: Rags (Item 65, Appendix D)
Sealing compound (Item 20, Appendix D)

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Remove transmission shroud (page 9-2)





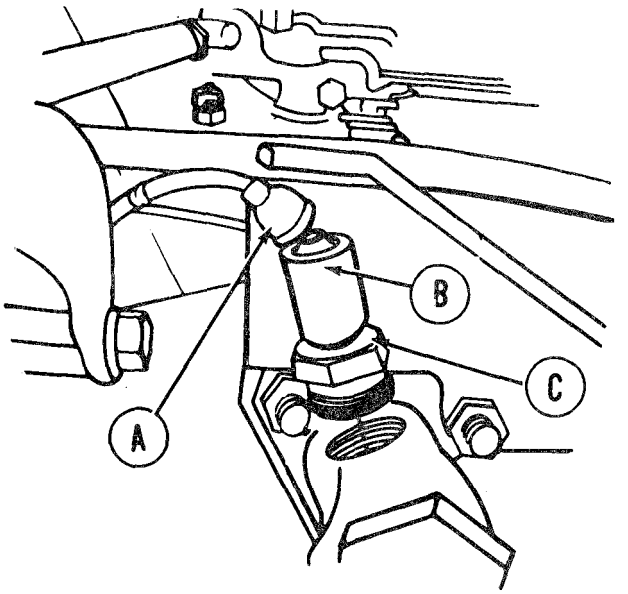
Go on to Sheet 2

TA249175

TRANSMISSION OIL TEMPERATURE TRANSMITTER REPLACEMENT (Sheet 2 of 2)

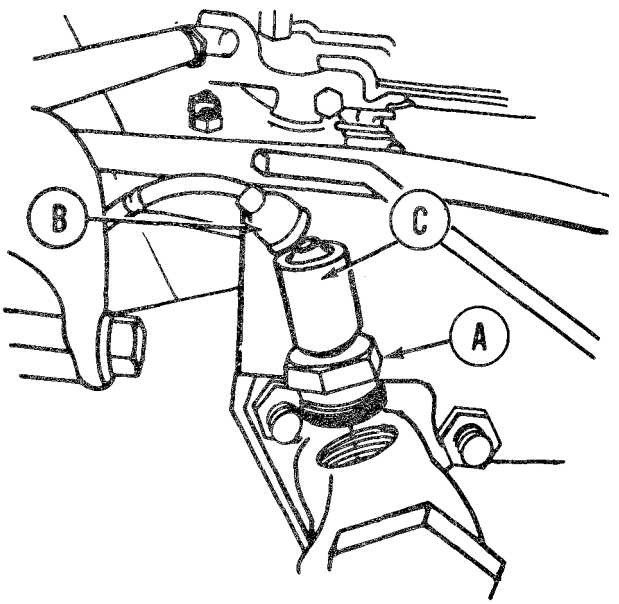
REMOVAL:

1. Place rags under transmitter.
2. Pull rubber insulated connector (A) from switch cap (B).
3. Using wrench, remove transmitter (C) from transmission.



INSTALLATION:

1. Lightly coat threads of new transmitter with sealing compound.



2. Using wrench, install new transmitter (A) into transmission.
3. Push rubber insulator connector (B) into switch cap (C).
4. Remove rags from under transmitter.
5. Start and run engine. Observe oil temperature indicator for normal oil temperature (TM 5-5420-202-10).
6. Stop engine (TM 5-5420-202-10).
7. Install transmission shroud (page 9-6).

End of Task

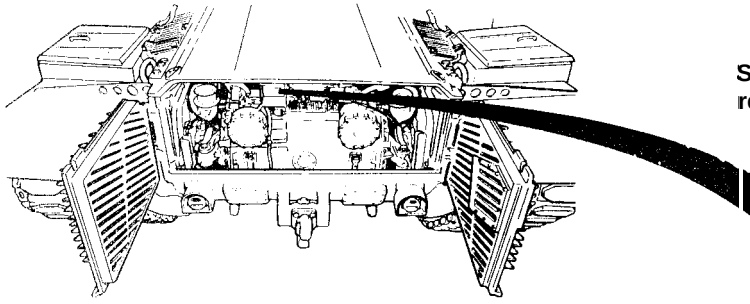
TA249176

NEUTRAL SHIFT SWITCH ASSEMBLY REPLACEMENT (Sheet 1 of 2)

TOOLS: 10 in. adjustable wrench
Flat-tip screwdriver 2 in. blade

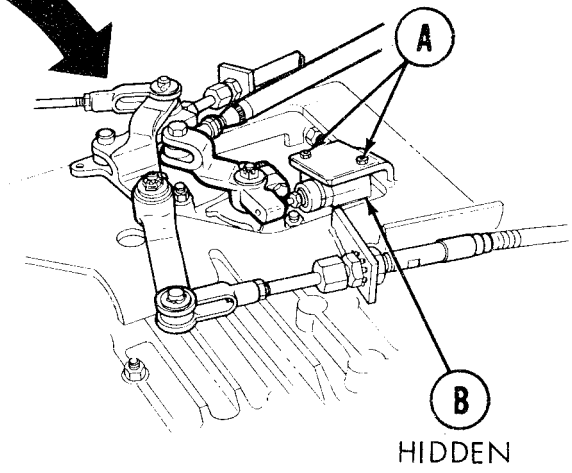
SUPPLIES: Silicone compound (Item 32, Appendix D)
Lockwashers (2 required)

PRELIMINARY PROCEDURES: Remove transmission shroud (page 9-2)



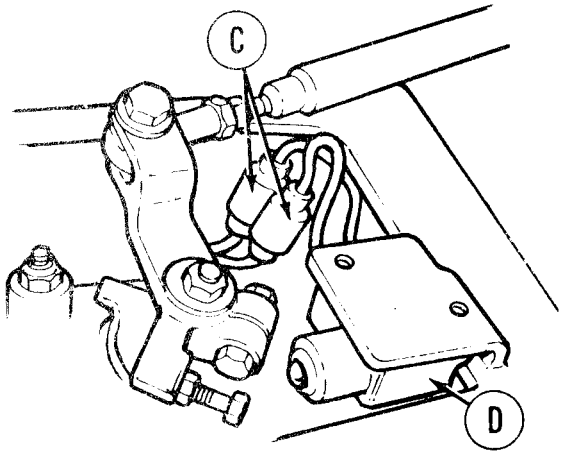
NOTE

Screws holding switch may be reversed.



REMOVAL:

1. Using wrench on nuts (A) and screwdriver on screws (B) (hidden), remove two screws, lockwasher, and nuts.



2. Disconnect two electrical connectors (C) from neutral shift switch (D).

3. Remove neutral shift switch (D).

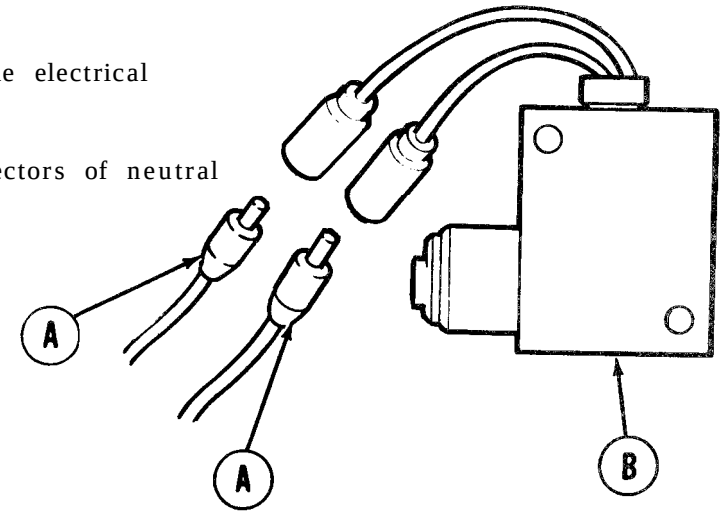
Go on to Sheet 2

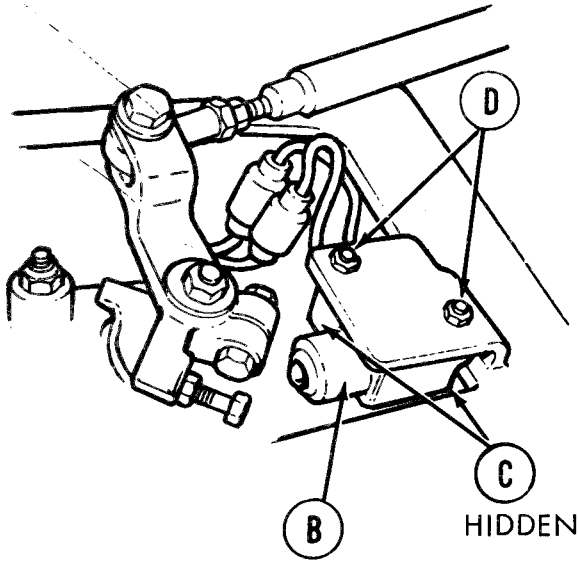
TA249177

NEUTRAL SHIFT SWITCH ASSEMBLY REPLACEMENT (SHEET 2 of 2)

INSTALLATION:

1. Apply silicone compound to two male electrical connectors (A).
2. Connect two connectors (A) to connectors of neutral shift switch (B).





3. Place neutral shift switch (B) in position on vehicle.
4. Using wrench and screwdriver, install two screws (C) (hidden), lockwasher, and nuts (D).

5. Attempt to start engine in all transmission lever positions. Engine should start only in neutral (N) and park (P) position. If not, perform adjustment procedure (page 11-81).
6. Install transmission shroud (page 9-6).

End of Task

TA249178

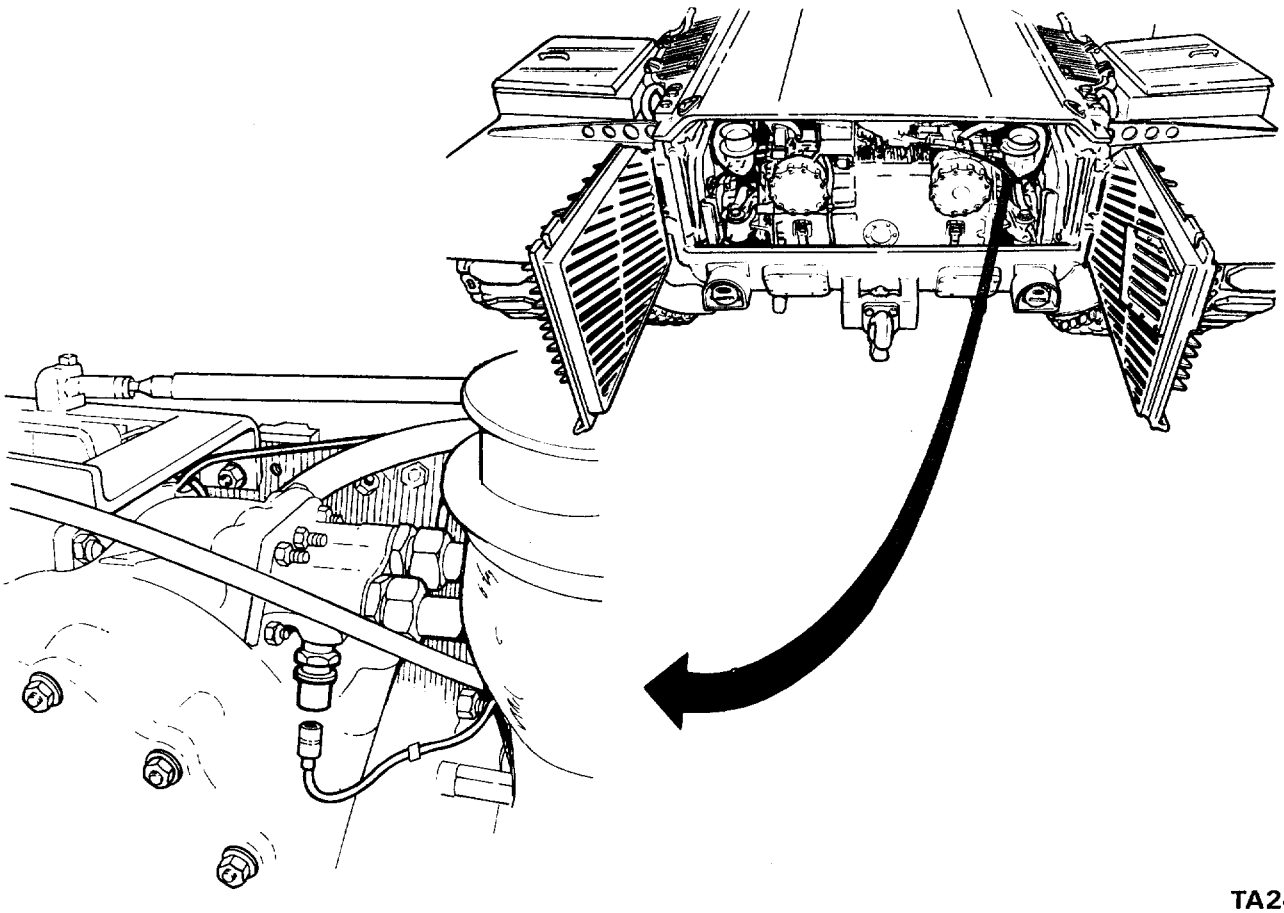
TRANSMISSION OIL HIGH TEMPERATURE SWITCH REPLACEMENT (Sheet 1 of 2)

TOOLS: 15/16 in. combination box and open end wrench

SUPPLIES: Rags (Item 65, Appendix D)
Sealing compound (Item 20, Appendix D)

REFERENCES: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Remove transmission shroud (page 9-2).



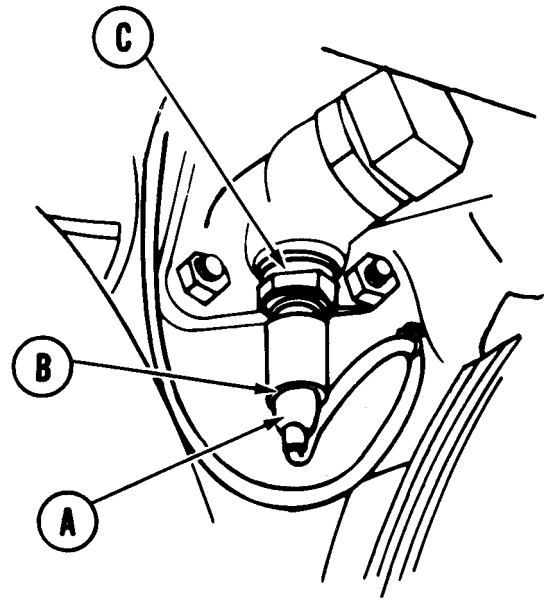
TA249179

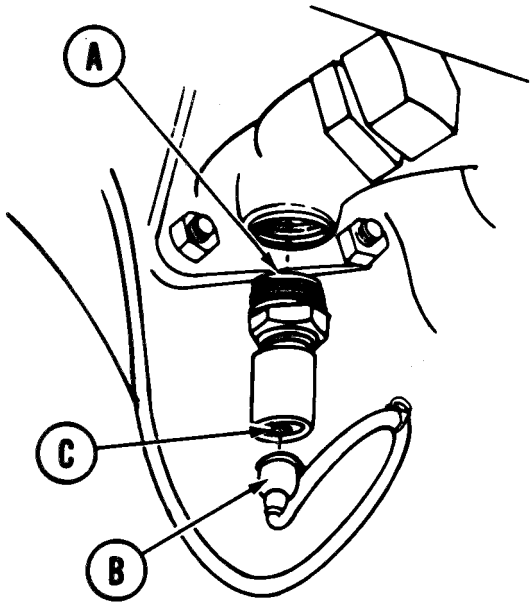
Go on to Sheet 2

TRANSMISSION OIL HIGH TEMPERATURE SWITCH REPLACEMENT (Sheet 2 of 2)

REMOVAL:

1. Place rags under switch.
2. Pull rubber insulated connector (A) from switch cap (B).
3. Using wrench, remove switch (C) from transmission.





INSTALLATION:

1. Using sealing compound, lightly coat threads of new switch
2. Using wrench, install new switch (A) into transmission.
3. Push rubber insulated connector (B) into switch cap (C).
4. Remove rags from under switch.
5. Start and run engine. Observe oil temperature indicator for normal oil temperature (TM 5-5420-202-10).
6. Shut down engine (TM 5-5420-202-10).
7. Install transmission shroud (page 9-6).

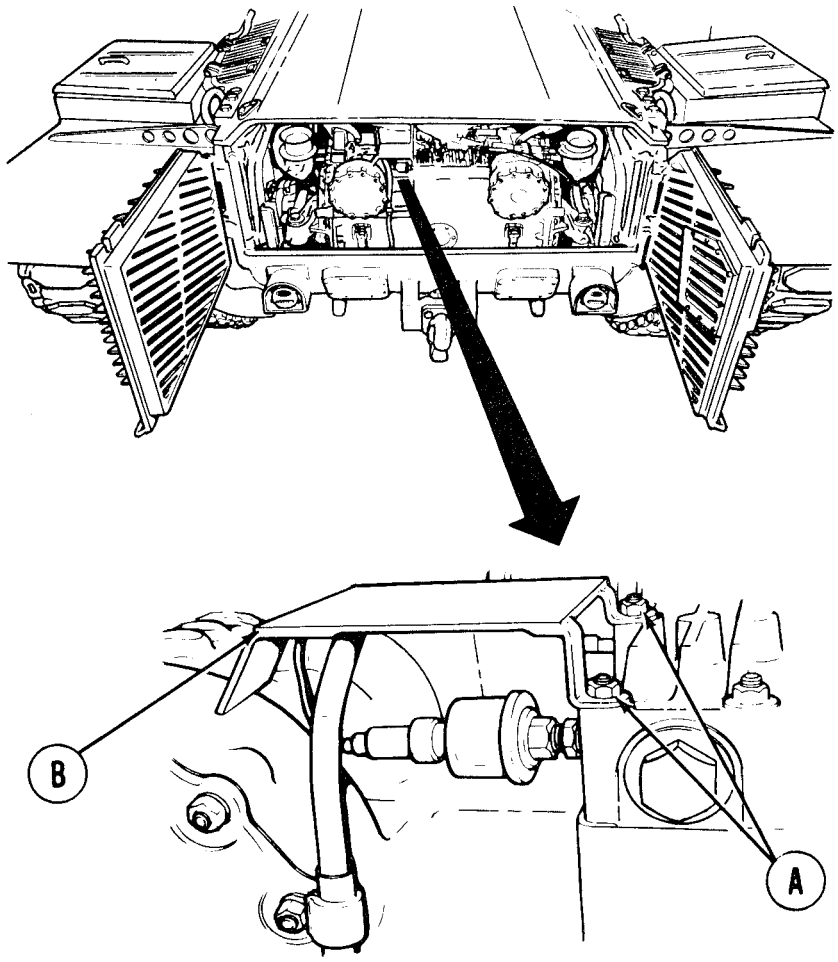
End of Task

TA249180

TRANSMISSION OIL PRESSURE TRANSMITTER GUARD PLATE REPLACEMENT (Sheet 1 of 2)

TOOLS: Ratchet with 1/2in. drive
9/16 in. socket with 1/2 in. drive

PRELIMINARY PROCEDURE: Remove transmission shroud (page 9-2)



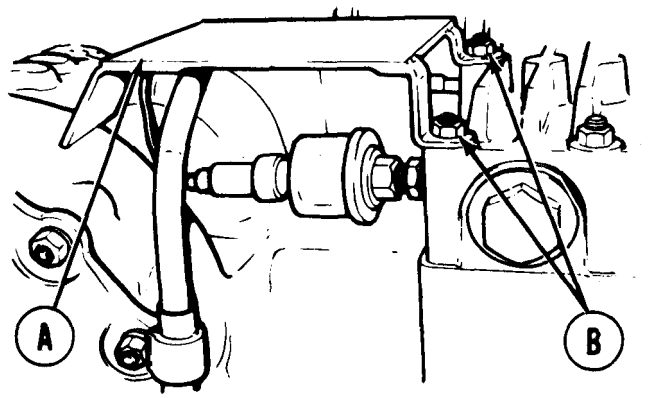
REMOVAL:

1. Using socket, remove two nuts and washers (A) holding oil pressure transmitter guard plate (B) to transmission.
2. Remove oil pressure transmitter guard plate (B) up and away from transmission.

Go on to Sheet 2

TA249181

TRANSMISSION OIL PRESSURE TRANSMITTER GUARD PLATE REPLACEMENT (Sheet 2 of 2)



INSTALLATION:

1. Position oil pressure transmitter guard plate (A) onto transmission.
2. Install two washers and nuts (B) to hold oil pressure transmitter guard plate (A) in place.
3. Using socket, tighten two nuts (B).
4. Install transmission shroud (page 9-6).

End of Task

TA249182

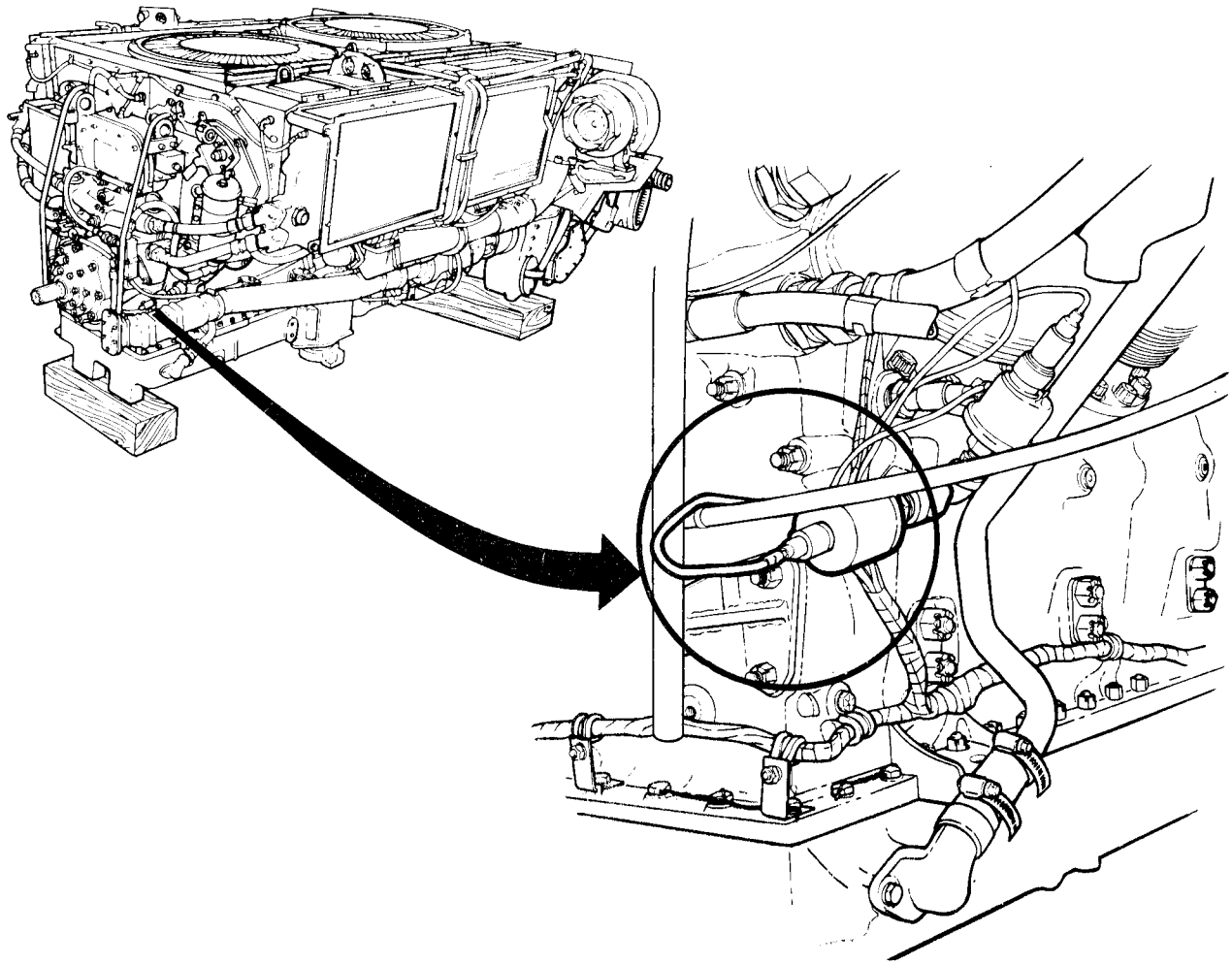
ENGINE OIL LOW PRESSURE SWITCH REPLACEMENT (Sheet 1 of 3)

TOOLS: 7/8 in. combination box and open end wrench
12 in. adjustable wrench (crescent)

SPECIAL TOOLS: Ground hop kit (Item 31, Chapter 3, Section I)

SUPPLIES: Rags (Item 65, Appendix D)
Sealing compound (Item 20, Appendix D)

PRELIMINARY PROCEDURES: Remove powerplant (page 5-2)
Remove engine oil high temperature thermostatic switch (page 10-220)



TA249183

Go on to Sheet 2

ENGINE OIL LOW PRESSURE SWITCH REPLACEMENT (Sheet 2 of 3)

REMOVAL:

Place rags under engine low oil pressure switch.

Pull rubber insulated connector (A) from switch cap (B).

3. Using 7/8 inch wrench to hold adapter (C), use adjustable wrench and remove switch (D) from adapter (C).

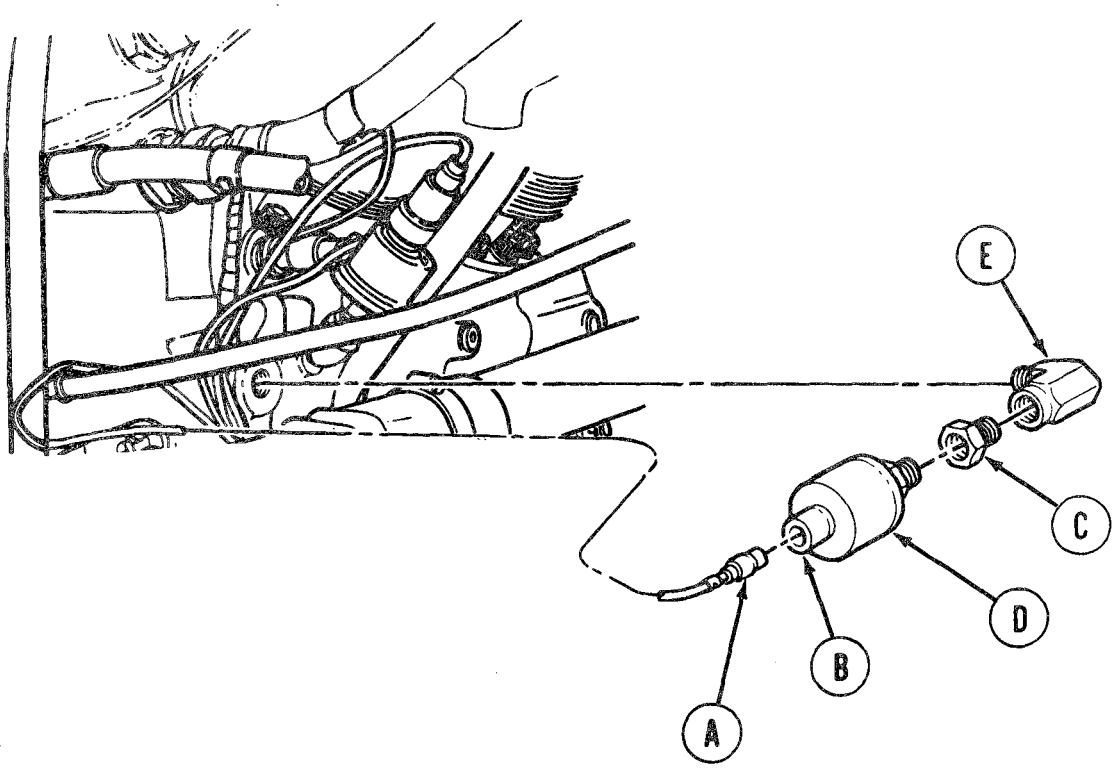
4 Using 7/8 inch wrench, remove adapter (C) from elbow (E).

5. Using adjustable wrench, remove elbow (E) from engine.

INSTALLATION:

NOTE

Prior to installation, lightly coat male threads of all components with sealing compound.

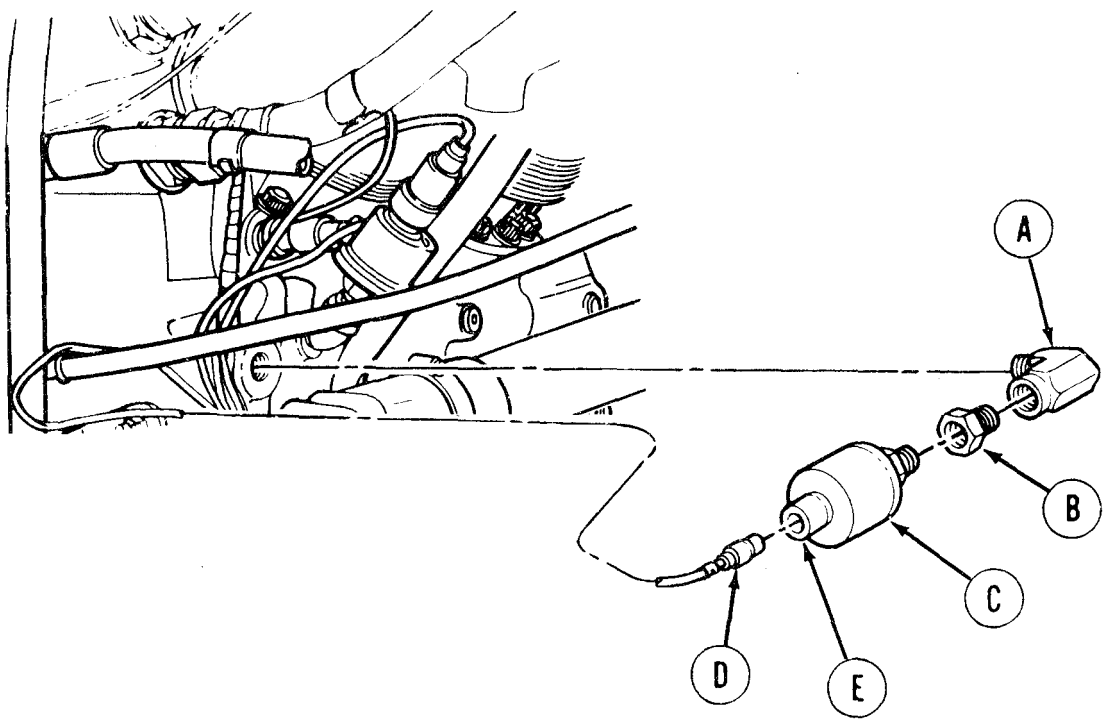


TA249184

Go on to Sheet 3

ENGINE OIL LOW PRESSURE SWITCH REPLACEMENT (Sheet 3 of 3)

1. Using adjustable wrench, install elbow (A) to engine.
2. Using 7/8 inch wrench, install adapter (B) to elbow (A).
3. Using 7/8 inch wrench, install new switch (C) into adapter (B).
4. Push rubber insulated connector (D) into switch cap (E).
5. Remove rags from under engine low oil pressure switch.
6. Install engine oil high temperature thermostatic switch (page 10-220).
7. Connect engine for powerplant ground hop (page 5-26).
8. Start and run engine. Observe low oil pressure indicator for normal oil pressure.
9. Stop engine. Disconnect engine from powerplant ground hop (page 5-40).
10. Install powerplant (page 5-14).



End of Task

TA249185

BATTERY JUMPER CABLE ASSEMBLY REPLACEMENT (Sheet 1 of 6)

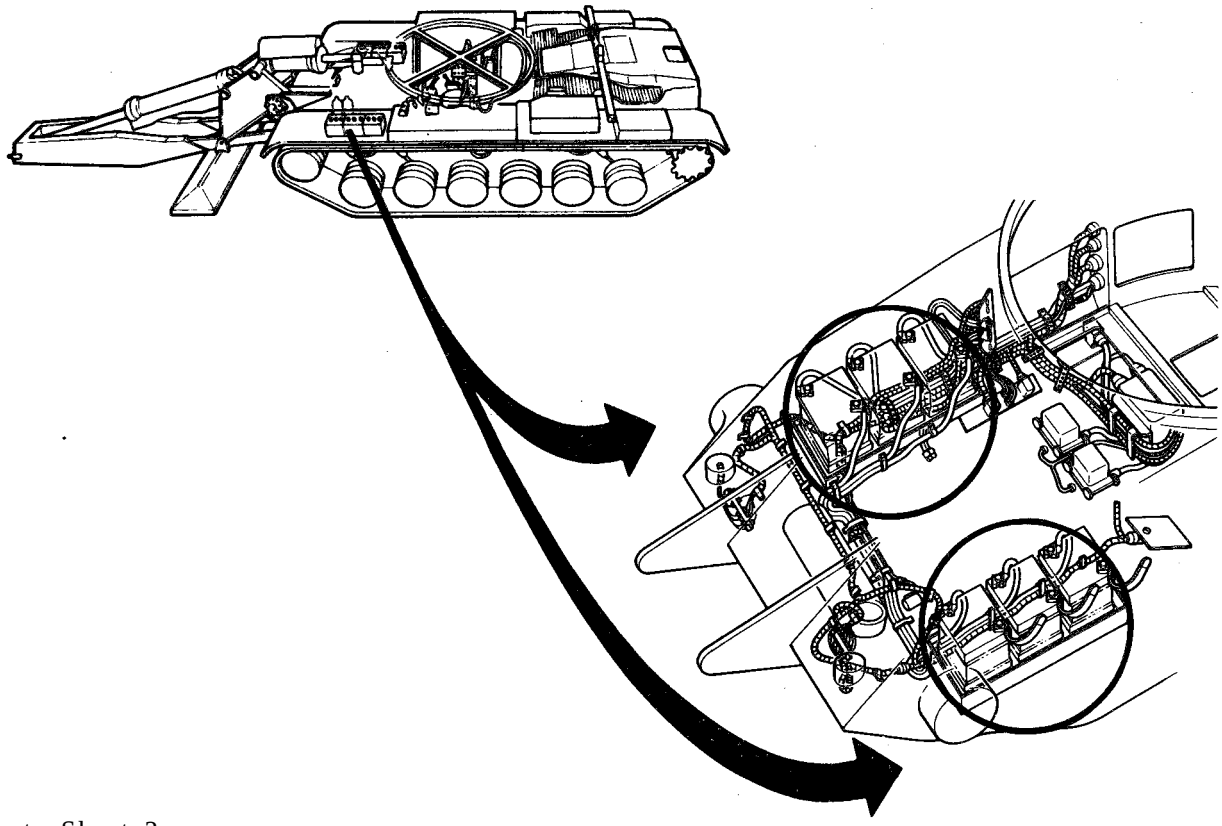
PROCEDURE INDEX

TOOLS: 9/16 in. combination box and open end wrench (2 required)
7/16 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive

SUPPLIES: Grease GAA (Item 37, Appendix D)
Rags (Item 65, Appendix D)
Steel wool (Item 56, Appendix D)

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Remove three battery ground straps (page 10-264)

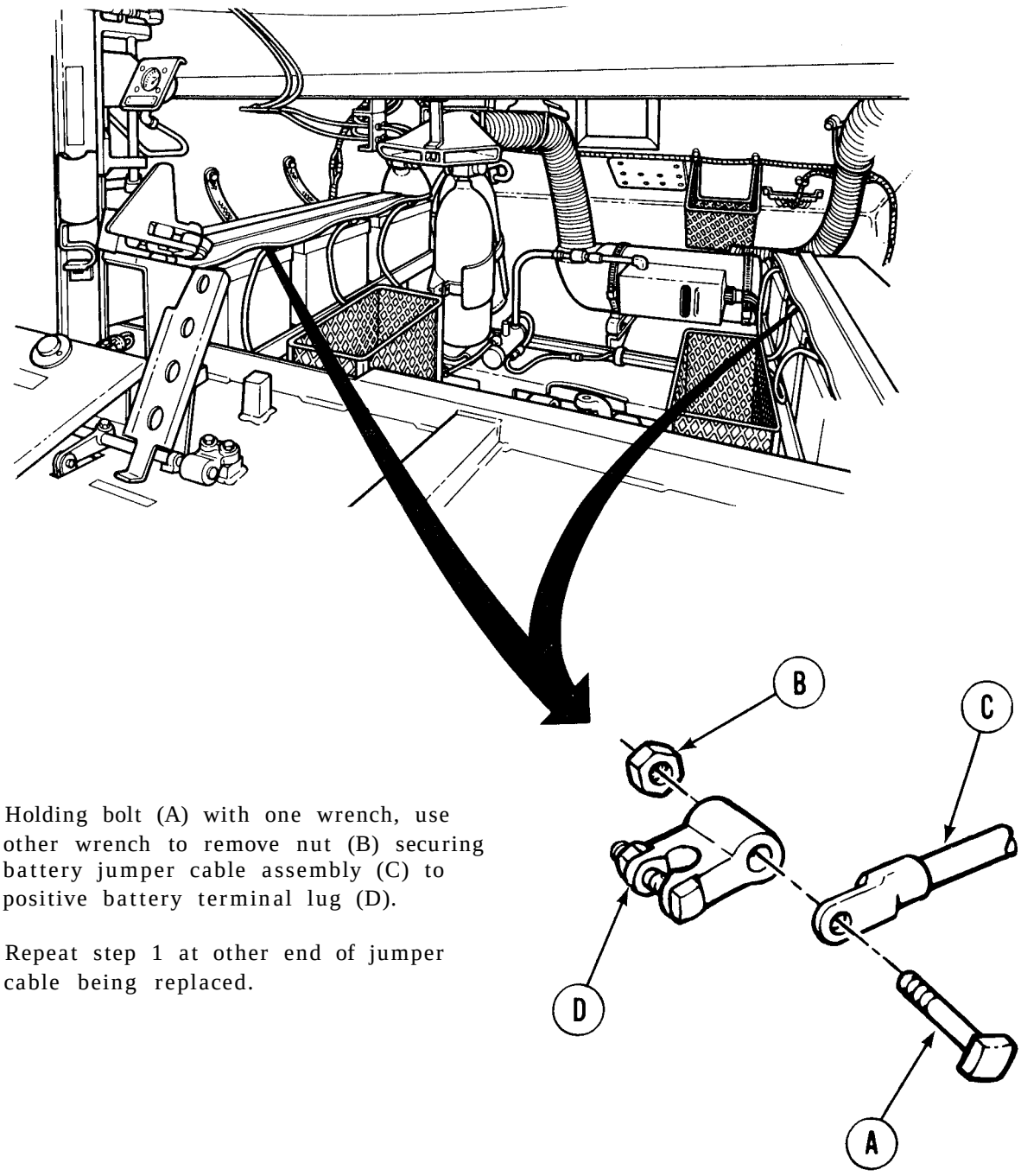


Go on to Sheet 2

TA249186

BATTERY JUMPER CABLE ASSEMBLY REPLACEMENT (Sheet 2 of 6)

REMOVAL:



1. Holding bolt (A) with one wrench, use other wrench to remove nut (B) securing battery jumper cable assembly (C) to positive battery terminal lug (D).

2. Repeat step 1 at other end of jumper cable being replaced.

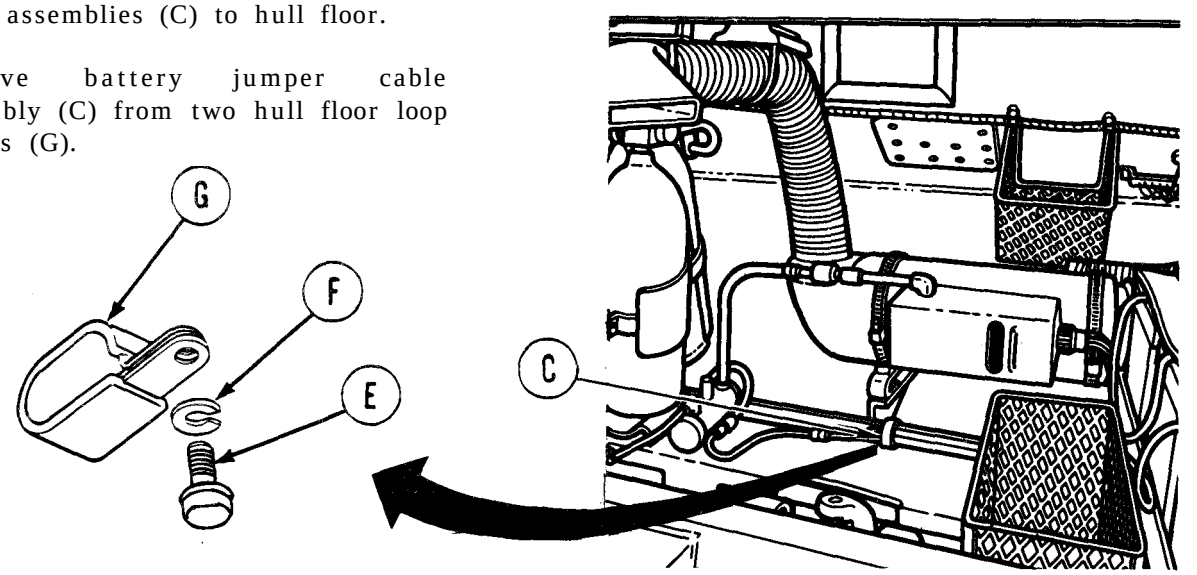
TA249187

Go on to Sheet 3

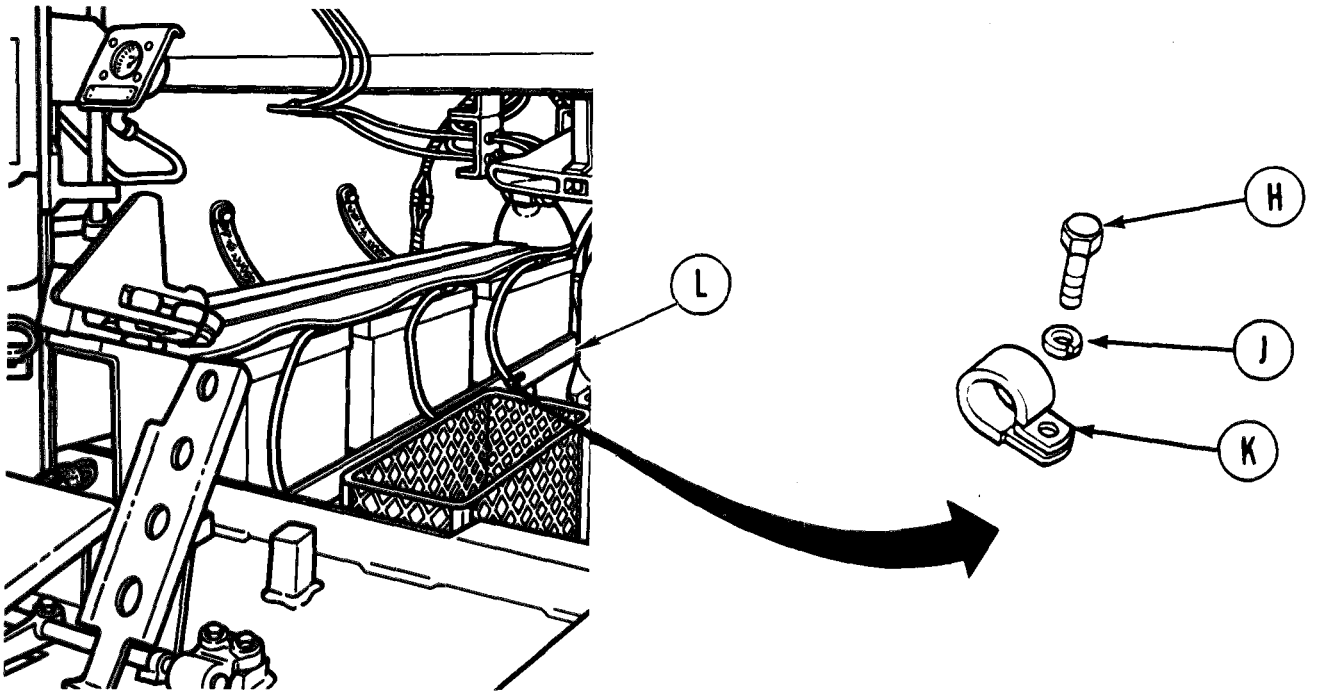
BATTERY JUMPER CABLE ASSEMBLY REPLACEMENT (Sheet 3 of 6)

3. Using socket, remove cap screws (E) and lockwashers (F) securing loop clamps (G) and three battery jumper cable assemblies (C) to hull floor.

4. Remove battery jumper cable assembly (C) from two hull floor loop clamps (G).



5. Using socket, remove cap screw (H) and lockwasher (J) from each loop clamp (K) securing battery jumper cable assembly to two battery supports (L).



Go on to Sheet 4

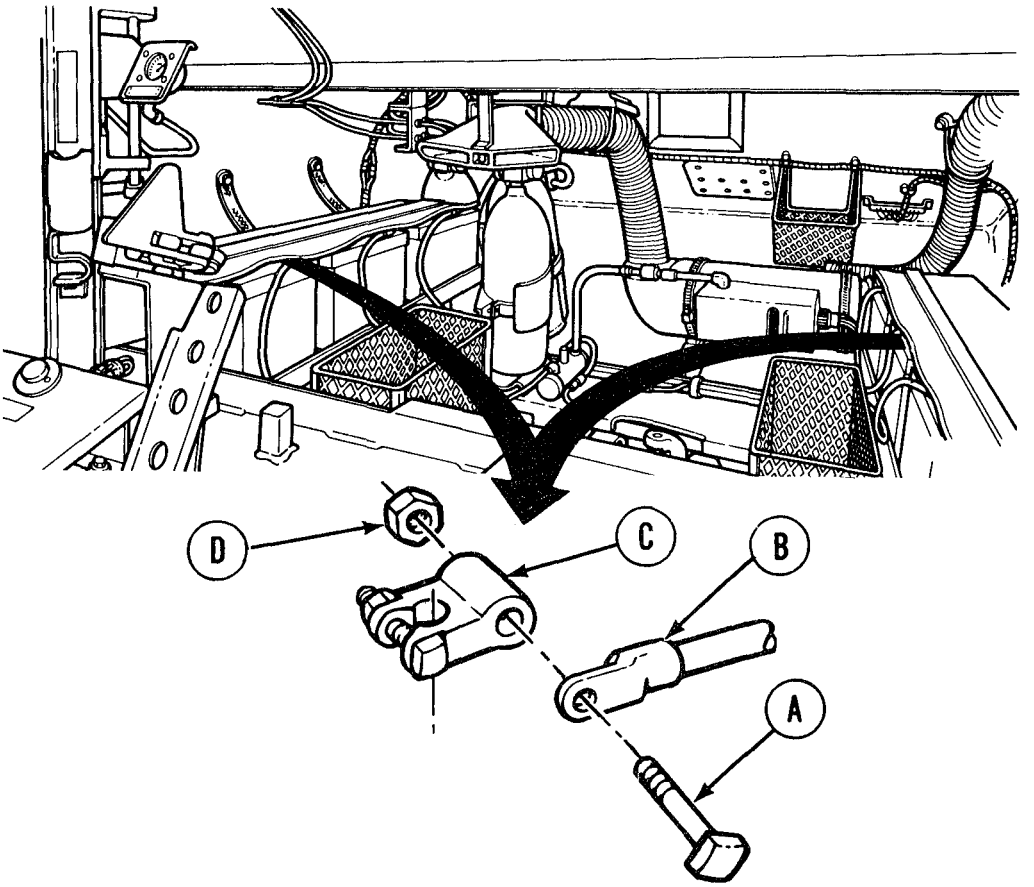
TA249188

BATTERY JUMPER CABLE ASSEMBLY REPLACEMENT (Sheet 4 of 6)

CLEANING AND INSPECTION:

1. Inspect contact points on positive battery terminal lugs and inspect battery jumper cable assembly for rust and corrosion.
2. Using steel wool, clean contact points until they shine.

INSTALLATION:



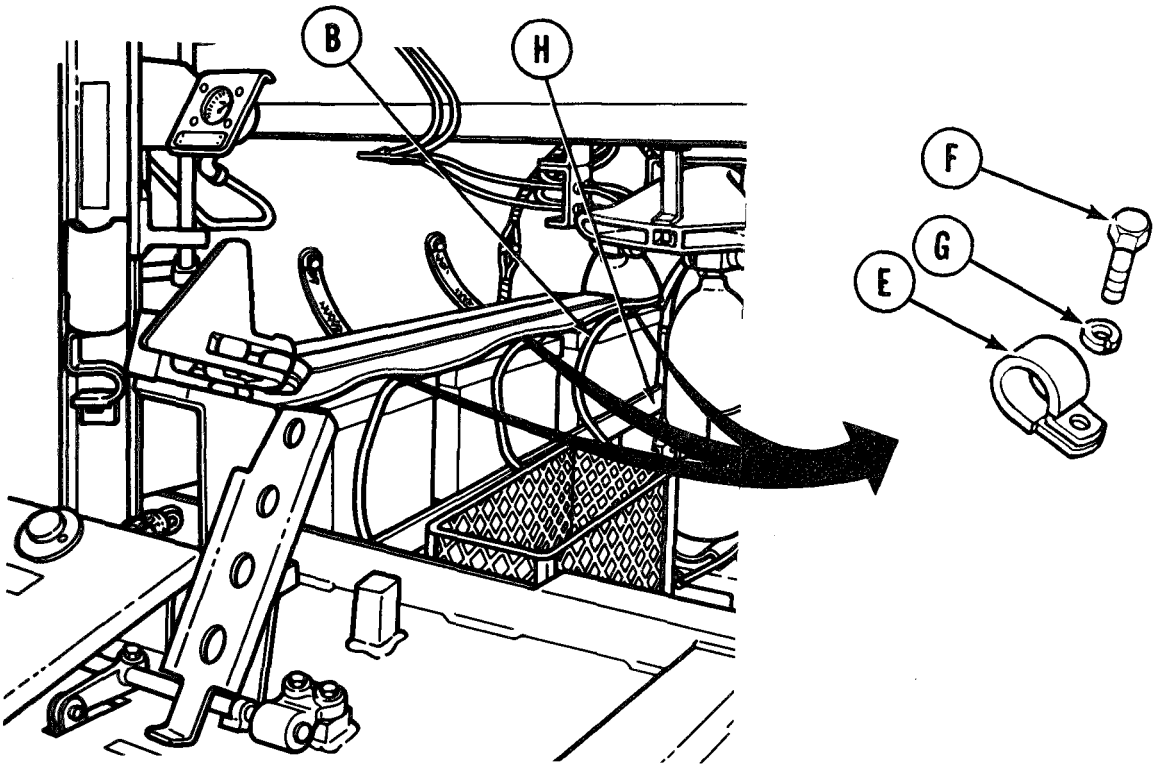
1. Place bolt (A) and battery jumper cable assembly contact point (B) in position on positive battery terminal lugs (C).
2. Holding bolt (A) with one wrench, use other wrench to install nut (D) securing battery jumper cable assembly (B) to positive battery terminal lugs (C).
3. Install both ends of battery jumper cable assembly (B) on two positive battery terminal lugs (C).
4. Apply a light coat of grease on two positive battey terminal lugs (C) to prevent corrosion.

Go on to Sheet 5

TA249189

BATTERY JUMPER CABLE ASSEMBLY REPLACEMENT (Sheet 5 of 6)

5. Place battery jumper cable assembly (B) in place in battery support loop clamp (E).



6. Place capscrews (F) and lockwashers (G) securing loop clamps (E) and battery jumper cable assemblies (B) to battery supports (H).

7. Using socket, install capscrews (F) and lockwashers (G) securing loop clamps (E) and battery jumper cable assemblies (B) to battery supports (H).

Go on to Sheet 6

TA249190

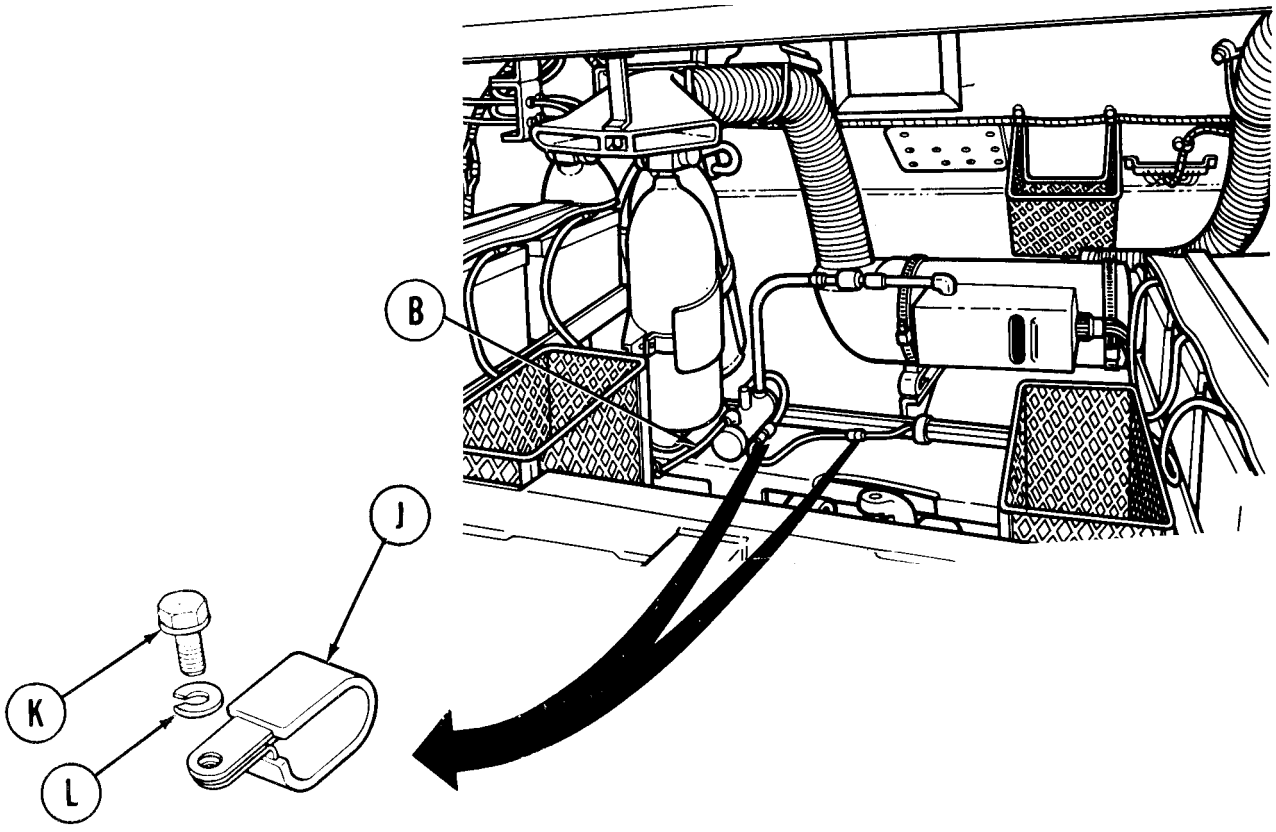
BATTERY JUMPER CABLE ASSEMBLY REPLACEMENT (Sheet 6 of 6)

8. Place battery jumper cable assembly (B) in position in two hull floor loop clamps (J).

9. Using socket, install two capscrews (K) and lockwashers (L) securing two loop clamps (J) and three battery jumper cable assemblies to hull floor.

10. Install three battery ground straps (page 10-266).

11. Check batteries for operation (TM 5-5420-202-10).



End of Task

TA249191

BATTERY TERMINAL LUG REPLACEMENT (Sheet 1 of 2)

TOOLS: 9/16 in. combination box and open end wrench (2 required)
1/2 in. combination box and open end wrench (2 required)

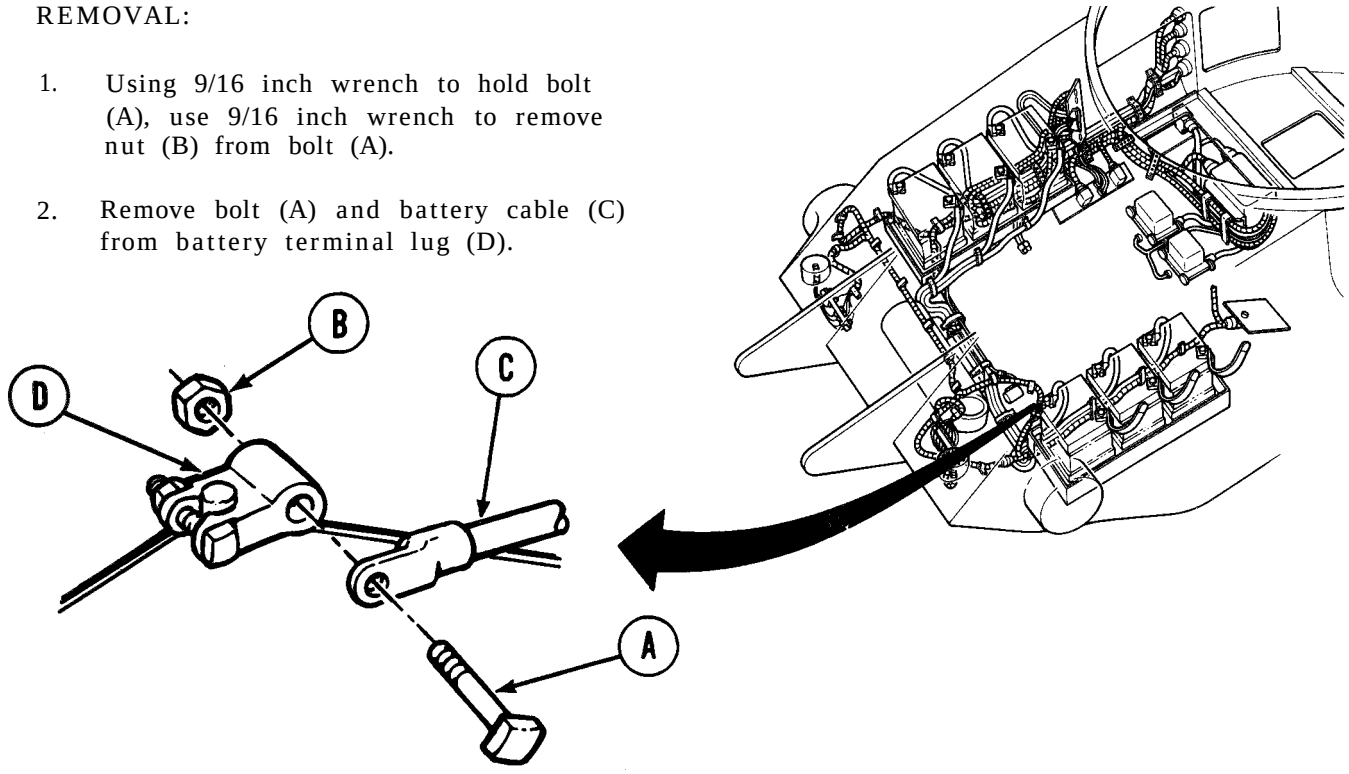
REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Turn master battery switch off (TM 5-5420-202-10)

REMOVAL:

1. Using 9/16 inch wrench to hold bolt (A), use 9/16 inch wrench to remove nut (B) from bolt (A).

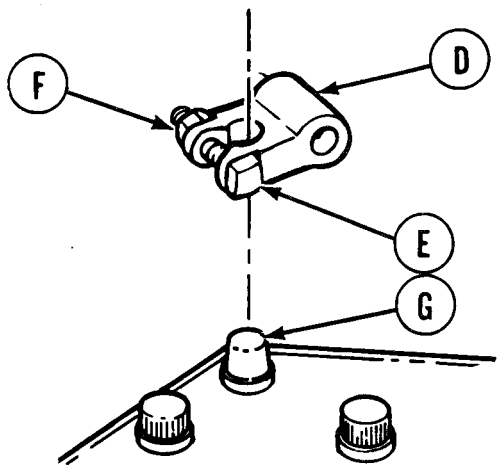
2. Remove bolt (A) and battery cable (C) from battery terminal lug (D).



3. Using 1/2 inch wrench to hold bolt (E), use 1/2 inch wrench to remove nut (F).

4. Remove bolt (E) from battery terminal lug (D).

5. Remove battery terminal lug (D) from battery terminal (G).



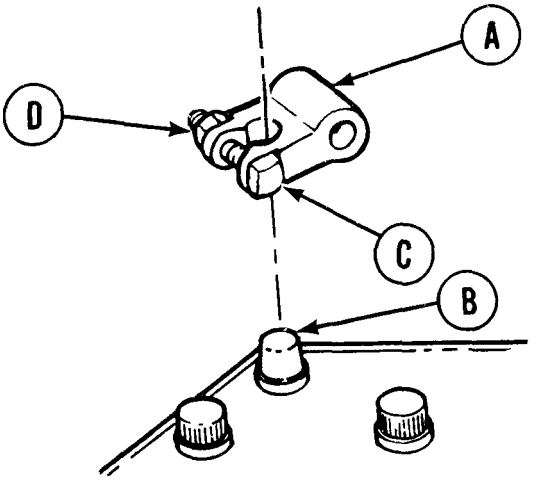
Go on to Sheet 2

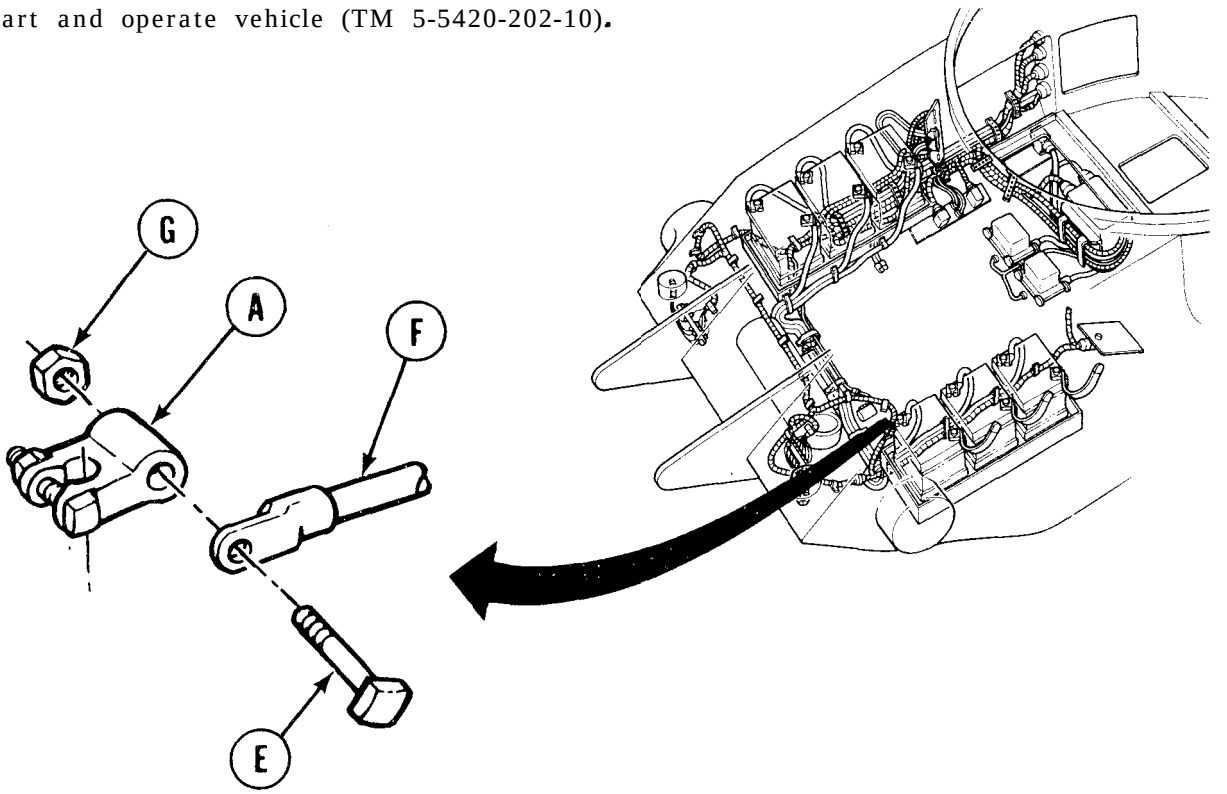
TA249192

BATTERY TERMINAL LUG REPLACEMENT (Sheet 2 of 2)

INSTALLATION:

1. Place battery terminal lug (A) in position on battery terminal (B).
2. Insert bolt (C) through battery terminal lug (A).
3. Holding bolt (C) with 1/2 inch wrench, use 1/2 inch wrench to install nut (D) securing bolt (C) on battery terminal lug (A).
4. Place bolt (E) and battery cable (F) in position on battery terminal lug (A).
5. Holding bolt (E) with 9/16 inch wrench, use 9/1 6 inch wrench to install nut (G) on bolt (E).
6. Apply a light coat of grease on battery terminal lugs (A) to prevent corrosion.
7. Start and operate vehicle (TM 5-5420-202-10).





End of Task

TA249193

BATTERY AND BATTERY COVER REPLACEMENT (Sheet 1 of 5)

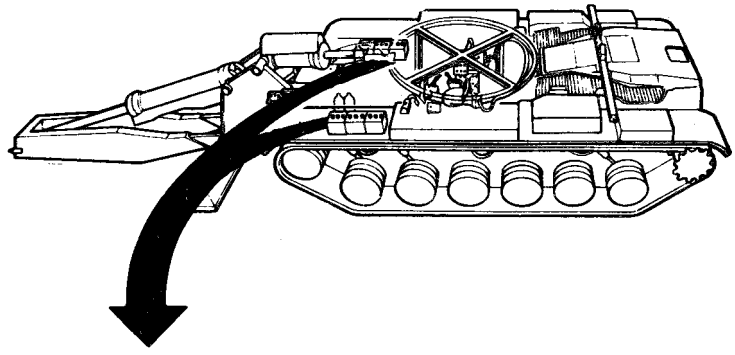
PROCEDURE INDEX

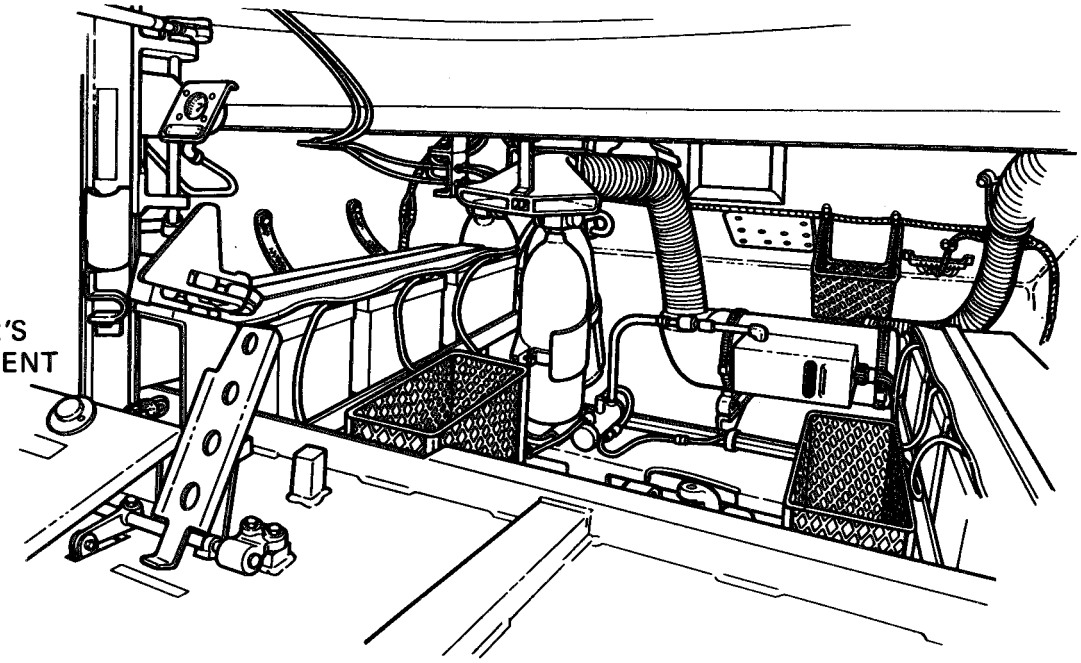
TOOLS: 9/16 in. combination box and open end wrench
1/2 in. combination box and open end wrench (2)
Wire brush

SUPPLIES:
Bicarbonate of soda
Rags (Item 65, Appendix D)
Grease (Item 37, Appendix D)
Lockwashers (4 required)

REFERENCE: TM 5-5420-202-20-10

PRELIMINARY PROCEDURE:
Turn MASTER BATTERY switch to OFF (TM 5-5420-202-10)

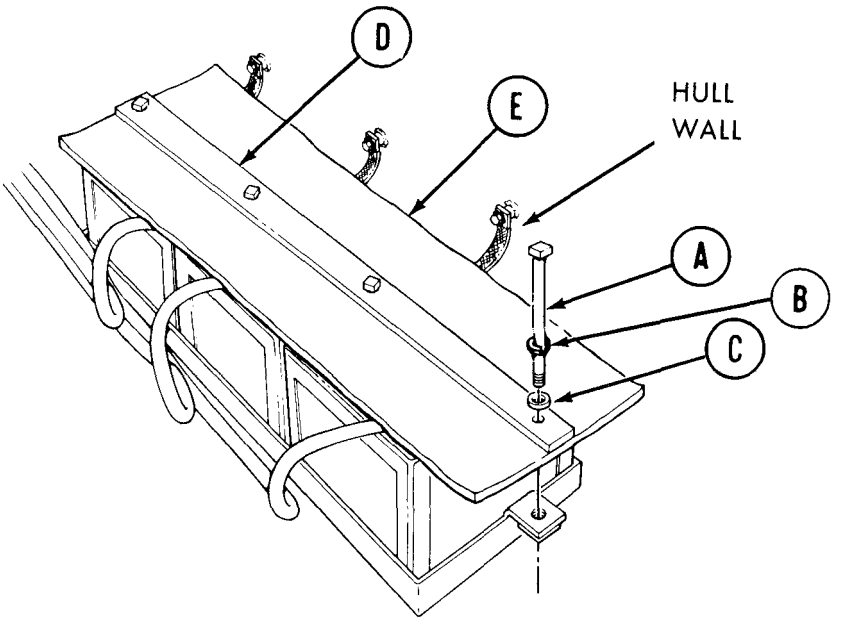




Go on to Sheet 2

TA249194

BATTERY AND BATTERY COVER REPLACEMENT (Sheet 2 of 5)



REMOVAL:

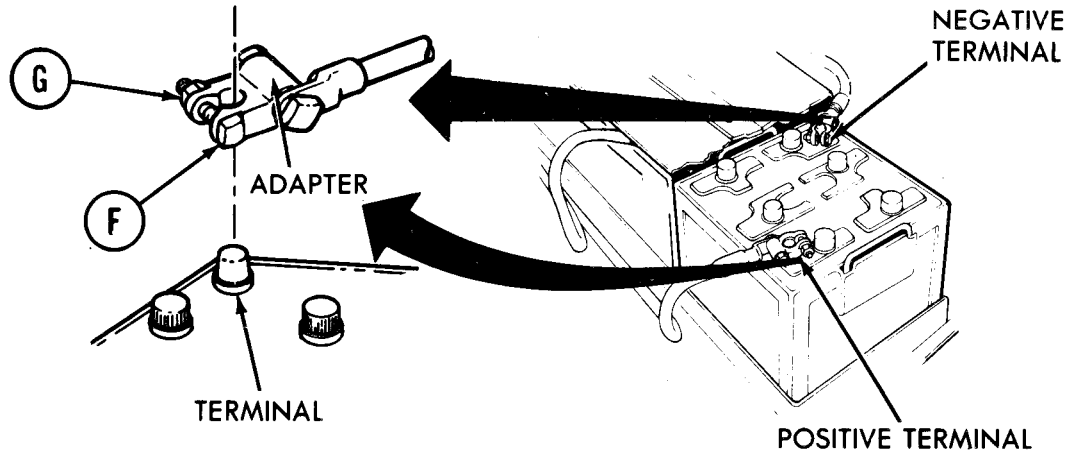
1. Using 9/16 inch wrench, remove four machine bolts (A), lockwashers (B), and flat washers (C) securing battery retaining strap (D) and rubber battery cover (E).

2. Remove battery remaining strap (D) and rubber battery cover (E).

TA249195

Go on to Sheet 3

BATTERY AND BATTERY COVER REPLACEMENT (Sheet 3 of 5)



WARNING

Do not let wrench handle touch hull metal while removing negative battery adapter. Arcing could occur and personnel could be burned.

3. Holding bolt (F) with 1/2 inch wrench, use other 1/2 inch wrench to loosen nut (G) securing bolt (F) to negative battery adapter.

CAUTION

Do not force negative battery adapter off terminal by prying or hammering.

4. Slip negative battery adapter off negative battery terminal.

5. Holding bolt (F) with 1/2 inch wrench, use other 1/2 inch wrench to loosen nut (G) securing bolt (F) to positive battery adapter.

CAUTION

Do not force positive battery adapter off terminal by prying or hammering.

6. Slip positive battery adapter off positive battery terminal.

7. Remove battery.

Go on to Sheet 4

TA249196

BATTERY AND BATTERY COVER REPLACEMENT (Sheet 4 of 5)

CLEANING AND INSPECTION:

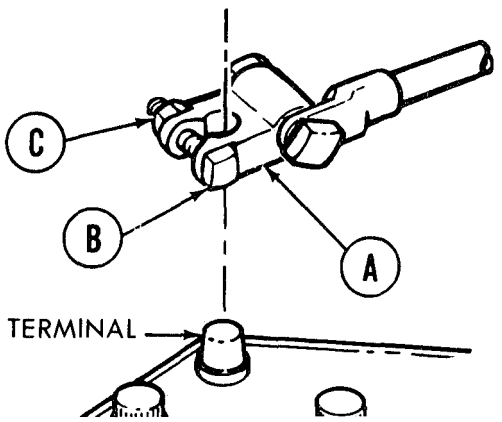
1. Inspect positive and negative adapters and battery terminals for rust and corrosion.
2. Clean positive and negative adapters and battery terminals with stiff brush and solution of water and bicarbonate of soda.
3. Flush cleaned surfaces with clean water.

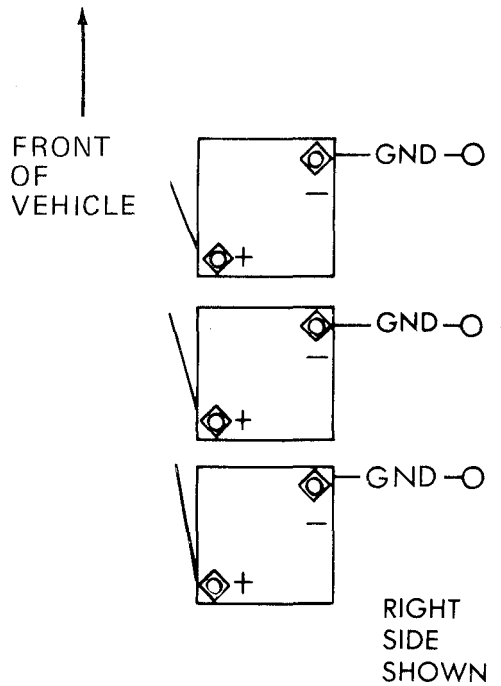
INSTALLATION:

CAUTION

Battery terminals must be positioned as shown.

1. Position battery on battery support.





WARNING

Do not let wrench handle touch hull metal while installing negative battery adapter (A). Arcing could occur and personnel could be burned.

CAUTION

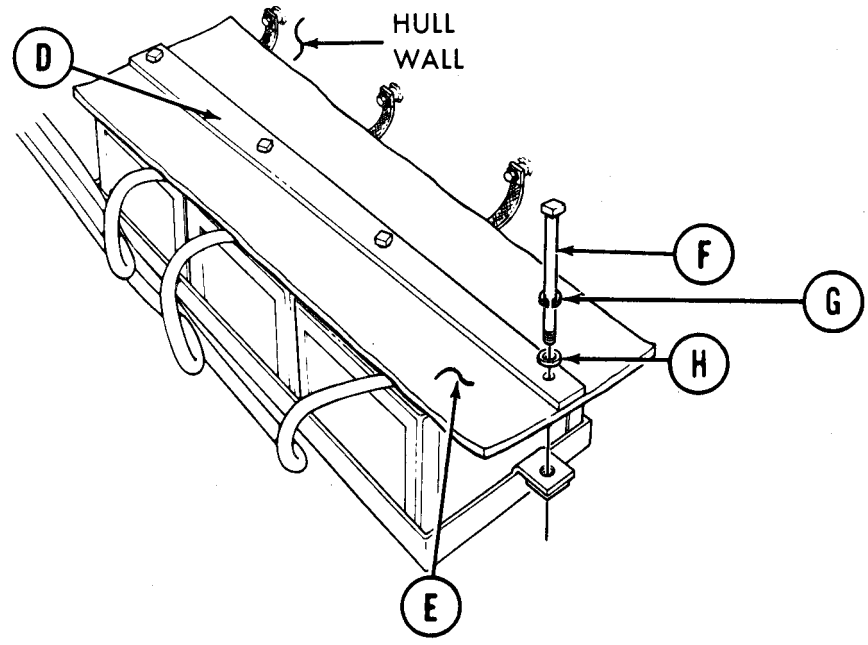
Do not force adapters (A) onto terminals by hammering.

2. Place negative battery adapter (A) in position on negative battery terminal.
3. Holding bolt (B) with one 1/2 inch wrench, use other 1/2 inch wrench to tighten nut (C) securing adapter (A) to negative battery terminal.
4. Place positive battery adapter (A) in position on positive battery terminal.
5. Holding bolt (B) with one 1/2 inch wrench, use other 1/2 inch wrench to tighten nut (C) securing adapter (A) to positive battery terminal.

Go on to Sheet 5

TA249197

BATTERY AND BATTERY COVER REPLACEMENT (Sheet 5 of 5)



6. Place battery retaining strap (D) and rubber battery cover (E) in position on batteries.

7. Using 9/16 inch wrench, install four machine bolts (F), lockwashers (G), and flat washers (H) securing battery retaining strap (D) and rubber battery cover (E).

8. Check batteries for operation (TM 5-5420-202-10).

End of Task

TA249198

BATTERY TESTING (Sheet 1 of 5)

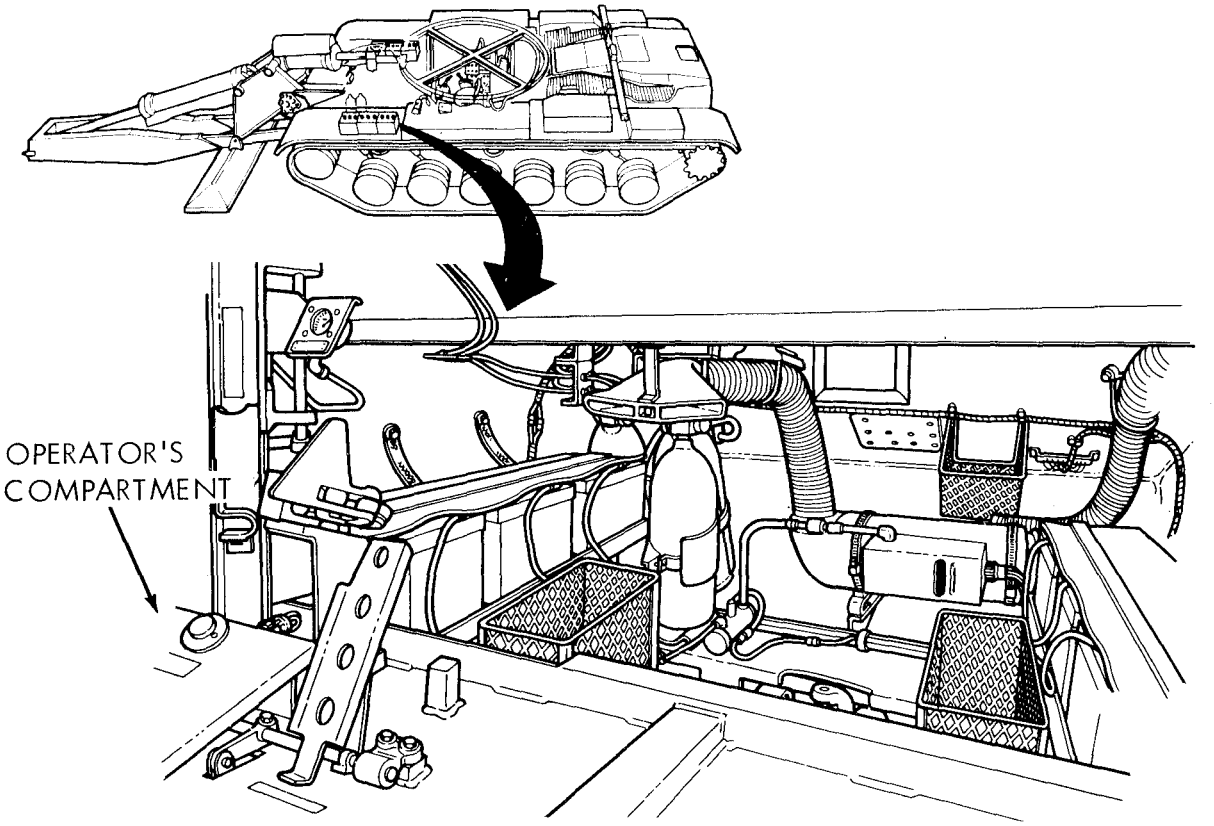
PROCEDURE INDEX

TOOLS: Hydrometer or antifreeze and battery tester

SUPPLIES: Pencil
Paper
Rags (Item 65, Appendix D)

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Turn MASTER BATTERY switch to OFF (TM 5-5420-202-10)
Remove rubber battery cover (page 10-254)



TA249199

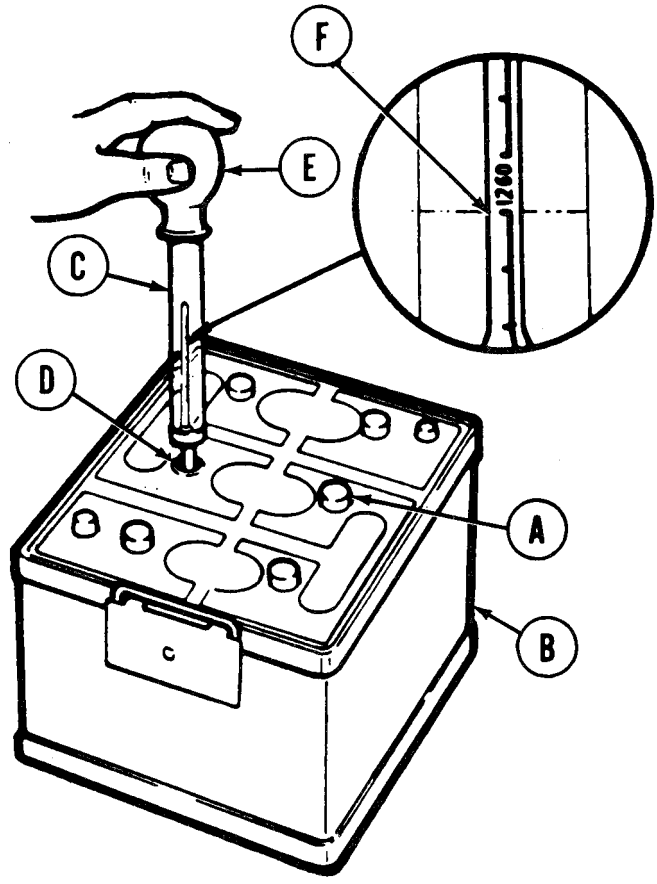
Go on to Sheet 2

BATTERY TESTING (Sheet 2 of 5)

Testing Using Hydrometer (Sheet 1 of 2)

WARNING

Acid fumes and copper sulphate particles will injure eyes and skin. Upon contact, immediately flush contacted area with water and obtain medical attention.



1. Remove six battery caps (A) from battery (B) to be tested.
2. Place hydrometer (C) through opening (D) into battery cell.
3. Squeeze rubber top (E) of hydrometer (C) and release slowly to suck in electrolyte from battery cell.
4. Suck in enough electrolyte to allow hydrometer float (F) to float freely and not touch top or bottom of glass tube.
5. Read the hydrometer (F) markings at eye level.
6. Using pencil and paper, write down temperature and specific gravity readings.
7. Repeat steps 2 through 6 above for each of five remaining battery cells.

Go on to Sheet 3

TA249200

BATTERY TESTING (Sheet 3 of 5)

Testing Using Hydrometer (Sheet 2 of 2)

8. Using correction chart (G), correct readings recorded in step 6 to 80°F.

   Example: Hydrometer shows 1.280 specific gravity. Electrolyte temperature is 0°F. Using correction chart (G), note that for electrolyte temperature of 0°F, 0.032 is to be subtracted from hydrometer reading. Therefore, corrected reading is: 1.280-0.032 = 1.248.

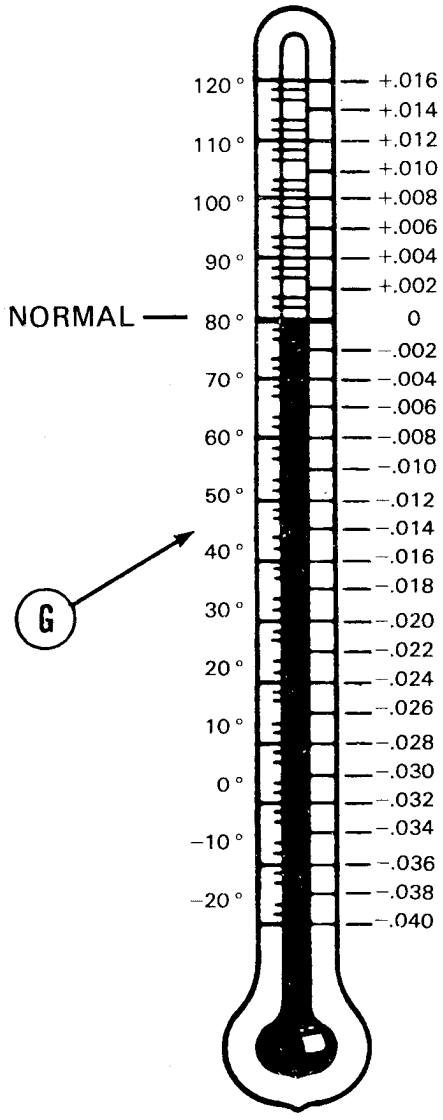
9. Using pencil and paper, add all six corrected readings together and divide by 6 to find the average reading for the battery.

10. If average reading for battery is below 1.225, charge battery (TM 5-5420-202-10).

11. If any two of six readings for battery are not within 0.025 of each other, replace battery (page 10-253).

12. Replace rubber battery cover (page 10-256).

13. Turn MASTER BATTERY switch to ON (TM 5-5420-202-10).



End of Task

TA249201

BATTERY TESTING (Sheet 4 of 5)

Testing Using Antifreeze and Battery Tester (Sheet 1 of 2)

WARNING

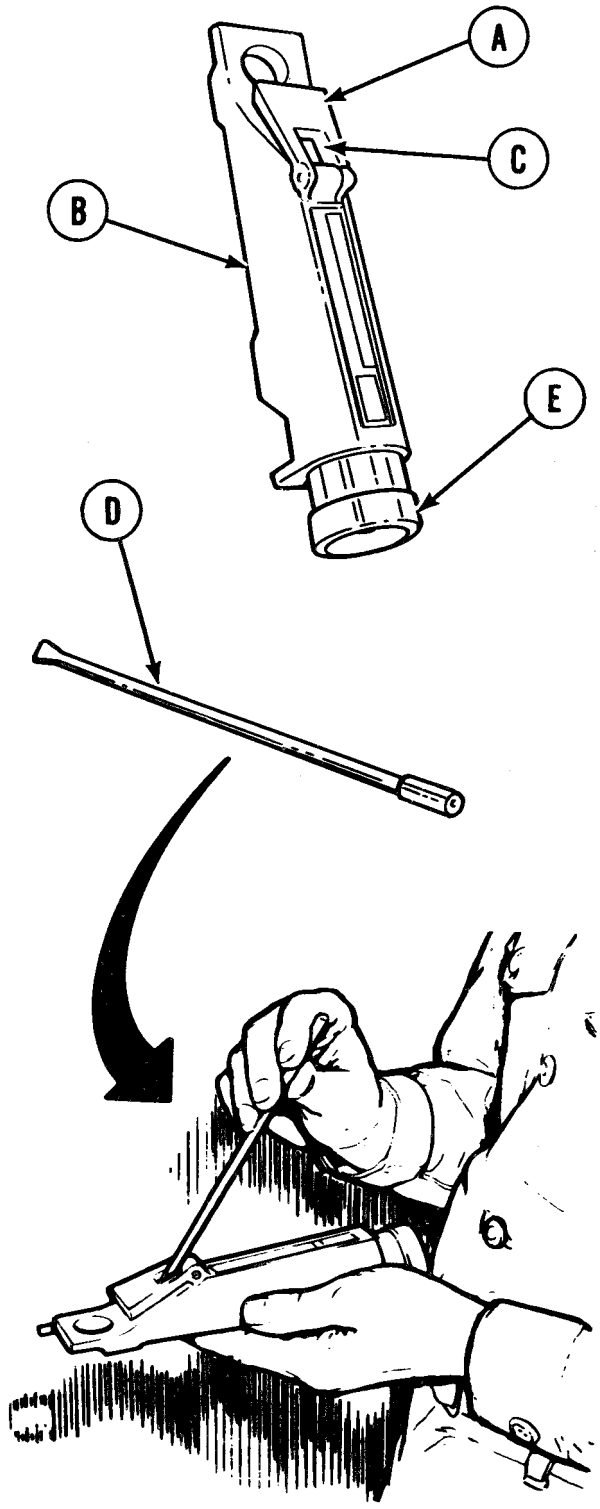
Acid fumes and copper sulphate particles will injure eyes and skin. Upon contact, immediately flush contacted area with water and obtain medical attention.

1. Open plastic cover (A) of antifreeze and battery tester (B).
2. Clean measuring window (C) and plastic cover (A) with clean soft cloth and dry thoroughly.
3. Remove rubber battery cover (page 10-254).

NOTE

Measuring surface (A and C) must be cleaned before each reading. Do not add water to battery before test.

4. Remove six battery caps from battery to be tested.
5. Using black dip stick (D), take sample of electrolyte from one battery cell.
6. Place a few drops of electrolyte on measuring window (C) through opening of cover (A).
7. Point tester (B) toward any bright light while looking through eye piece (E).



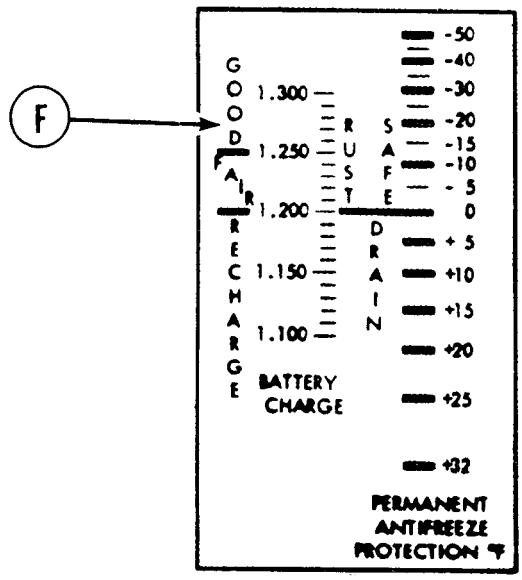
Go on to Sheet 5

TA249202

BATTERY TESTING (Sheet 5 of 5)

Testing Using Antifreeze and Battery Tester (Sheet 2 of 2)

8. Read specific gravity on left scale (F) at point where dividing line between light and dark (edge of shadow) crosses scale.



NOTE

If edge of shadow is not sharp, measuring surfaces were not sufficiently cleaned or dried. Clean measuring surfaces and make new test.

9. Using pencil and paper, write down reading.

10. Repeat steps 4 through 9 for remaining five battery cells.

11. Using pencil and paper, add all six readings together and divide by 6 to find the average reading for the battery.

12. If average reading for battery is below 1.225, charge battery (TM 5-5420-202-10).

13. If any two of six readings for battery are not within 0.025 of each other, replace battery (page 10-253).

14. Replace rubber battery cover (page 10-256).

End of Task

TA249203

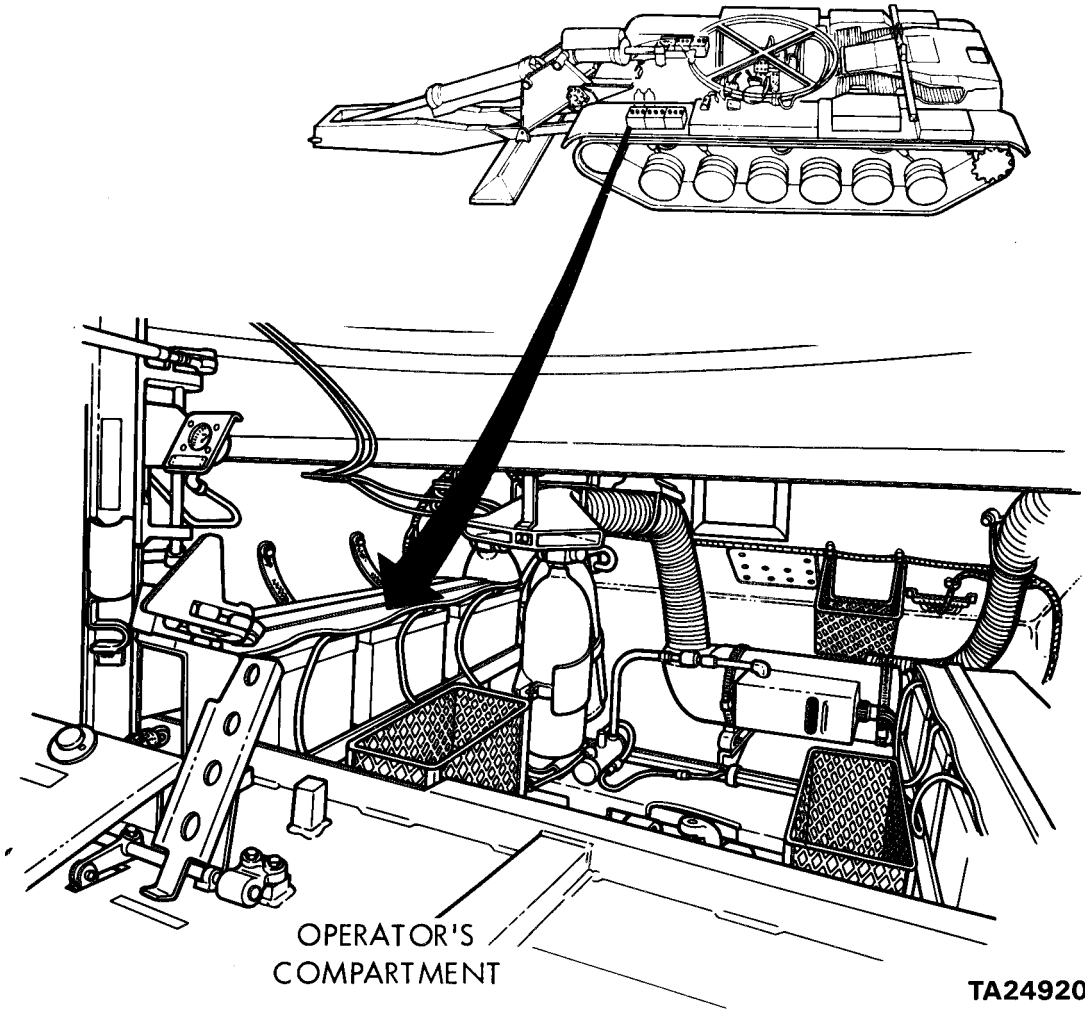
BATTERY GROUND STRAP REPLACEMENT (Sheet 1 of 5)

PROCEDURE INDEX

TOOLS 9/16 in. combination box and open end wrenches (2 required)

SUPPLIES: Grease (Item 37, Appendix D)
Rags (Item 65, Appendix D)
Steel wool (Item 56, Appendix D)
Lockwashers (7 required)

REFERENCE: TM 5-5420-202-10



Go on to Sheet 2

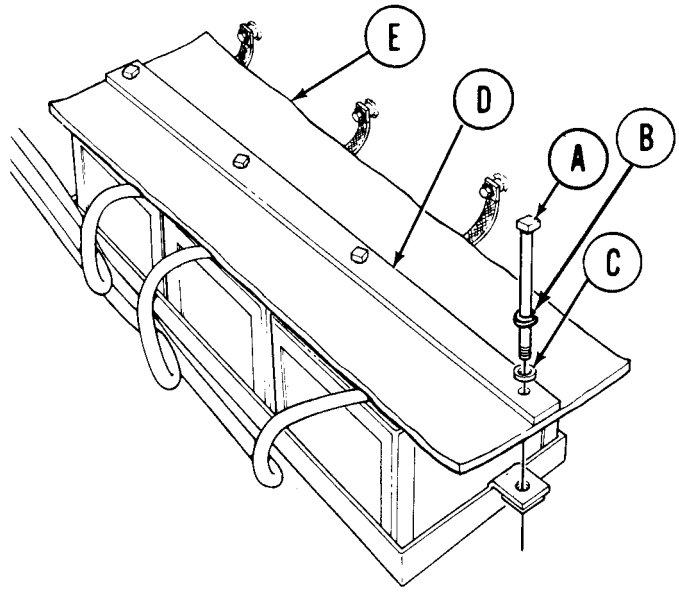
TA249204

BATTERY GROUND STRAP REPLACEMENT (Sheet 2 of 5)

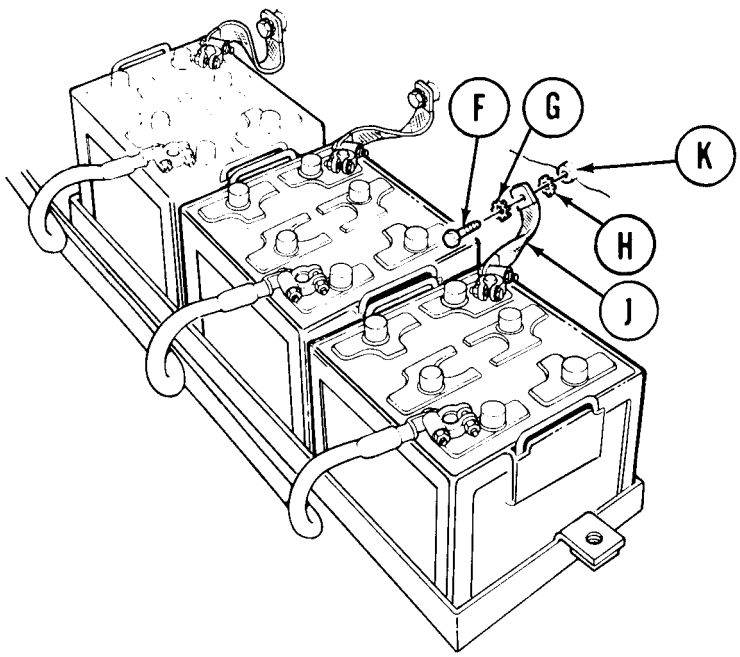
REMOVAL:

1. Using wrench, remove four machine bolts (A), lockwashers (B), and flat washers (C) securing battery retaining strap (D) and rubber battery cover (E).

2. Remove battery retaining strap (D) and rubber battery cover (E).



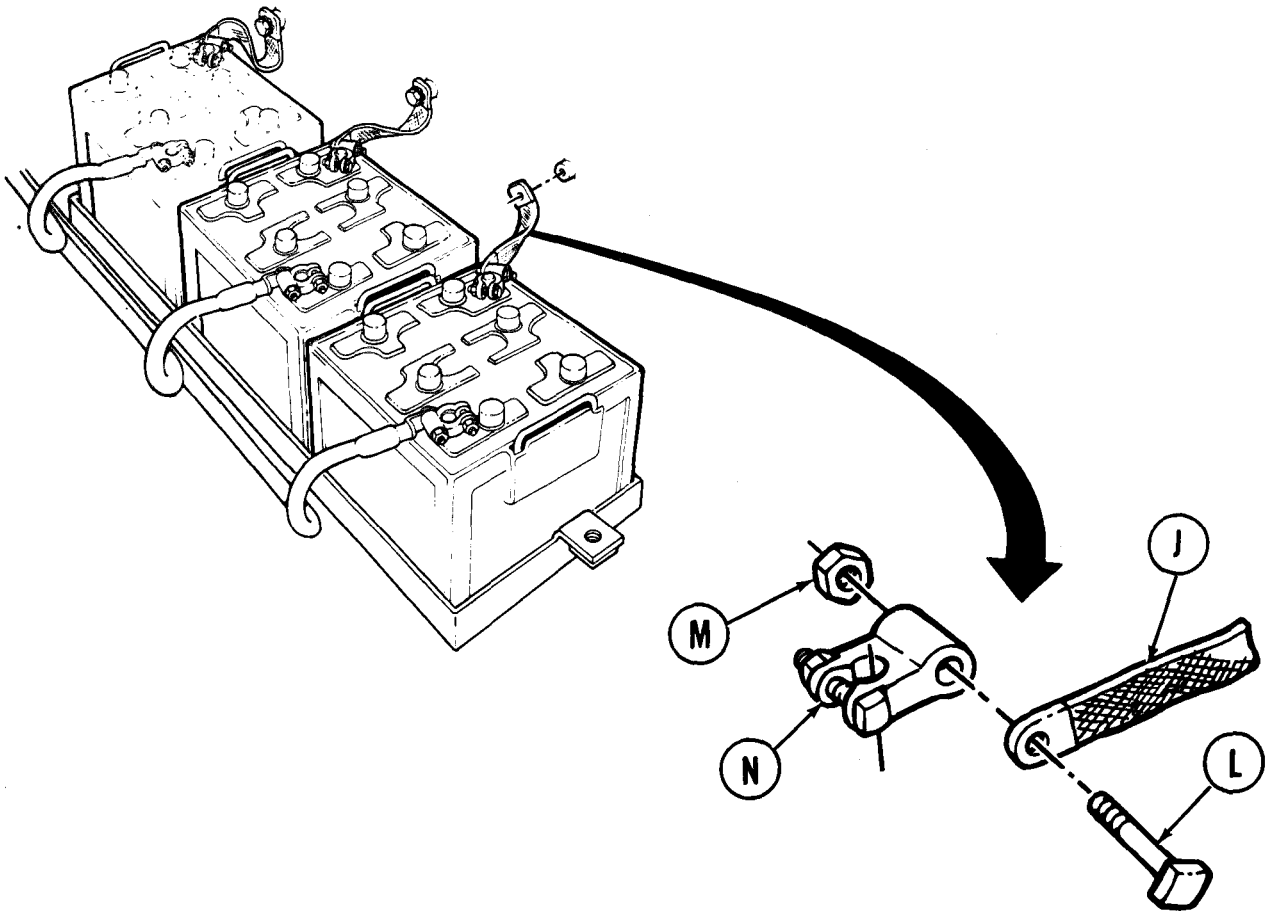
3. Using wrench, remove screw (F), lockwasher (G), and lockwasher (H) securing three battery ground strap (J) to hull wall (K).



Go on to Sheet 3

TA249205

BATTERY GROUND STRAP REPLACEMENT (Sheet 3 of 5)



4. Holding bolt (L) with one wrench, use other wrench to remove nut (M) securing battery ground strap (J) to negative battery terminal lug (N).

5. Remove battery ground strap (J).

CLEANING AND INSPECTION:

1. Inspect contact points on negative battery terminal lug, hull wall, and replacement, battery ground strap for rust and corrosion.

2. Using steel wool, clean contact points on negative battery terminal, hull wall, and replacement battery ground strap until they shine.

TA249206

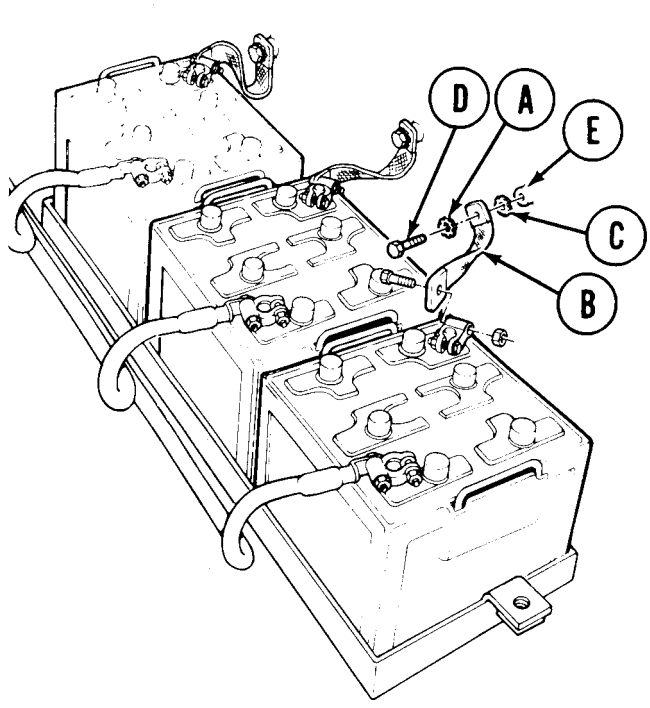
Go on to Sheet 4

BATTERY GROUND STRAP REPLACEMENT (Sheet 4 of 5)

INSTALLATION:

1. Place lockwasher (A), battery ground strap (B), and lockwasher (C) in position on cap screw (D).

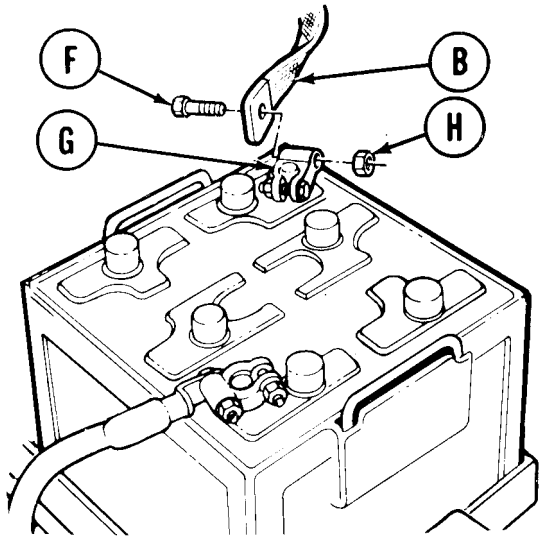
2. Using wrench, install cap screw (D) with lockwasher (A), battery ground strap (B), and lockwasher (C) in position on hull wall (E).



3. Place bolt (F) and other end of battery ground strap (B) in position on negative battery terminal lug (G).

4. Holding bolt (F) with one wrench, use other wrench to install nut (H) securing bolt (F) and battery ground strap (B) to negative battery terminal lug (G).

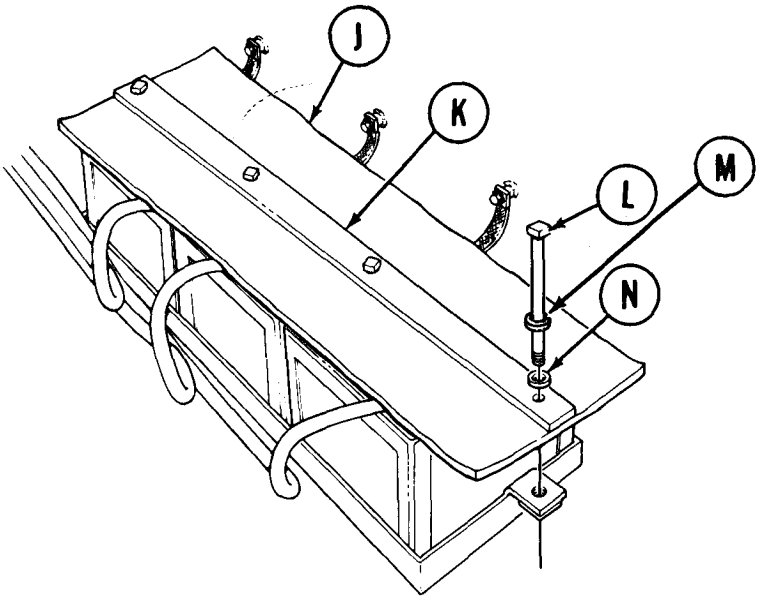
5. Add small amount of grease to negative battery terminal lug (G) to prevent corrosion.



Go on to Sheet 5

TA249207

BATTERY GROUND STRAP REPLACEMENT (Sheet 5 of 5)



6. Place rubber battery cover (J) and retaining strap (K) in position on batteries.

7. Using wrench, install four machine bolts (L), lockwashers (M), and flat washers (N) securing rubber battery cover (J) and retaining strap (K).

8. Check batteries for operation (TM 5-5420-202-10).

End of Task

TA249208

DISCONNECT BATTERY GROUND STRAPS (Sheet 1 of 1)

TOOLS: 9/16 in. socket with 1/2 in. drive
Ratchet
5 in. extension with 1/2 in. drive

SUPPLIES: Rag, wiping (Item 65, Appendix D)
Rubber gloves (Item 69, Appendix D)
Goggles)Item 70, Appendix D)

WARNING

Remove all jewelry such as rings, watches, dog tags, bracelets, etc. If jewelry or disonnected battery ground cable contacts battery terminal, a direct short can result, causing instant heating of jewelry and tools, severe injury to personnel, or damage to equipment.

WARNING

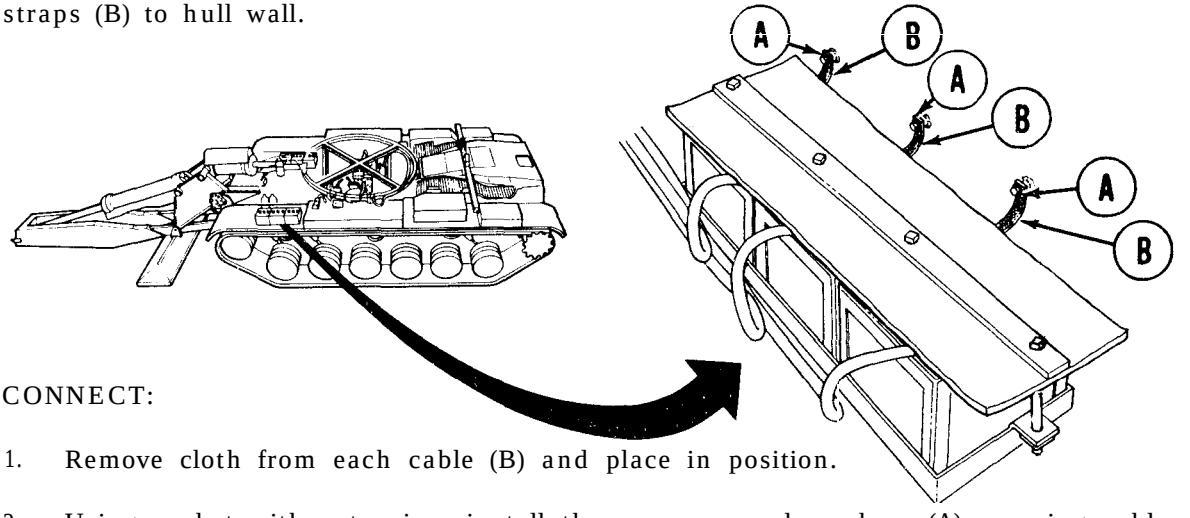
Battery acid (electrolyte) is extremely harmful. Always wear safety goggles and rubber gloves, and don't smoke while servicing batteries. Severe injury will result if acid contacts eyes or skin.

CAUTION

As each cable is removed, cover cable with rags to prevent contact with floor or battery box, which may cause arcing.

DISCONNECT:

Using socket with extension, remove three screws and six washers (A) securing three ground straps (B) to hull wall.



CONNECT:

1. Remove cloth from each cable (B) and place in position.
2. Using socket with extension, install three screws and washers (A) securing cables (B) to hull floor.

End of Task

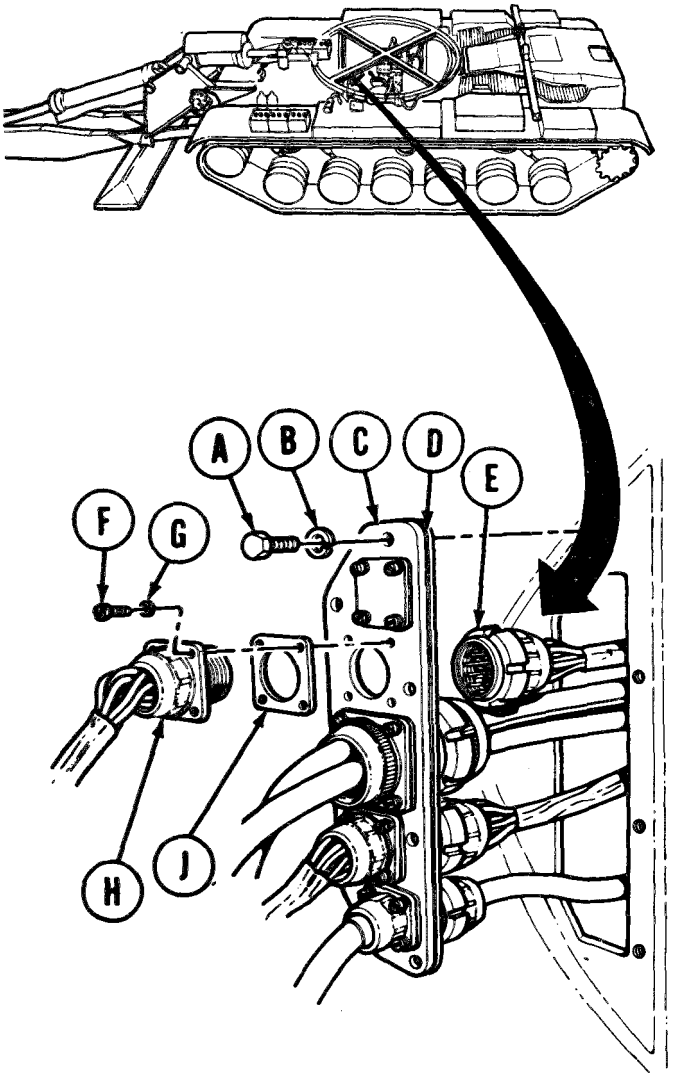
BULKHEAD CABLE DISCONNECT (Sheet 1 of 29

TOOLS: Spanner wrench
Flat-tip screwdriver
9/16 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive

SUPPLIES: Lockwashers (11 required)

PRELIMINARY PROCEDURES: Remove three ground straps from battery negative terminals (page 10-268)
Remove commander's seat (page 17-78)
Remove right bulkhead access cover (page 17-2)

QUADRANTS REMOVED FOR CLARITY



REMOVAL:

1. Using 9/16 inch socket remove seven screws (A) and lockwashers (B) securing connector cover plate (C) to bulkhead.

2. Pull connector plate cover (C) and its gasket (D) away from bulkhead. Harness assemblies inside bulkhead will come with cover plate (C) since they are attached to it.

NOTE

To remove either of the two middle connectors on the cover plate, you must first remove either the top or bottom connector, as required, to get a spanner wrench on the desired connector.

3. Using spanner wrench, disconnect and remove connector (E) at back side of cover plate (C).

4. Using flat-tip screwdriver, remove four screws (F) and lockwashers (G) securing corre spending connector (H) and gasket (J) at front side of cover plate (C).

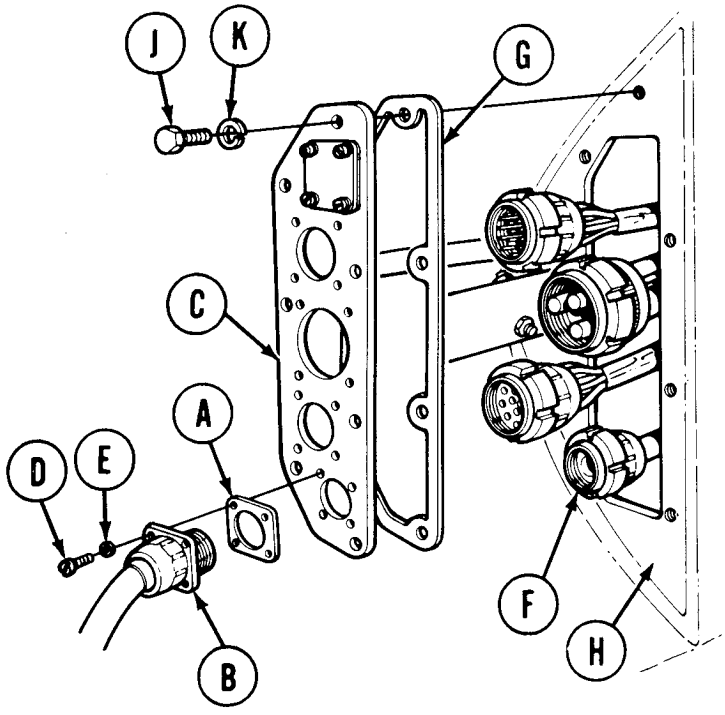
Go on to Sheet 2

TA249210

BULKHEAD CABLE DISCONNECT (Sheet 2 of 2)

NOTE

Bulkhead connectors are installed in consecutive order from either bottom to top or from top to bottom or the middle connectors must be installed first, then the top or bottom connectors. The instructions below are for installation of the bottom connector first. Installation procedures are the same for all the other connectors.



INSTALLATION:

1. Place gasket (A) on connector (B).
2. Make sure keyway inside connector (B) is at top. Place connector (B) and gasket (A) in position on cover plate (C).
3. Using flat-tip screwdriver, install four screws (D) and lockwashers (E) securing connector (B) and gasket (A) to cover plate (C).
4. Using fingers, install connector (F) on connector (B).
5. When connector (F) is finger tight, use spanner wrench to finish tightening.
6. Install succeeding connectors in consecutive order in same manner.
7. After all connectors are installed, place cover plate (C) and gasket (G) in position on bulkhead (H).
8. Using 9/16 inch socket, install seven screws (J) and lockwashers (K) to secure cover plate (C) to bulkhead (H).
9. Install right bulkhead access cover (page 17-3).
10. Install commander's seat (page 17-79).
11. Connect three ground straps at batteries (page 10-268).

TA249211

End of Task

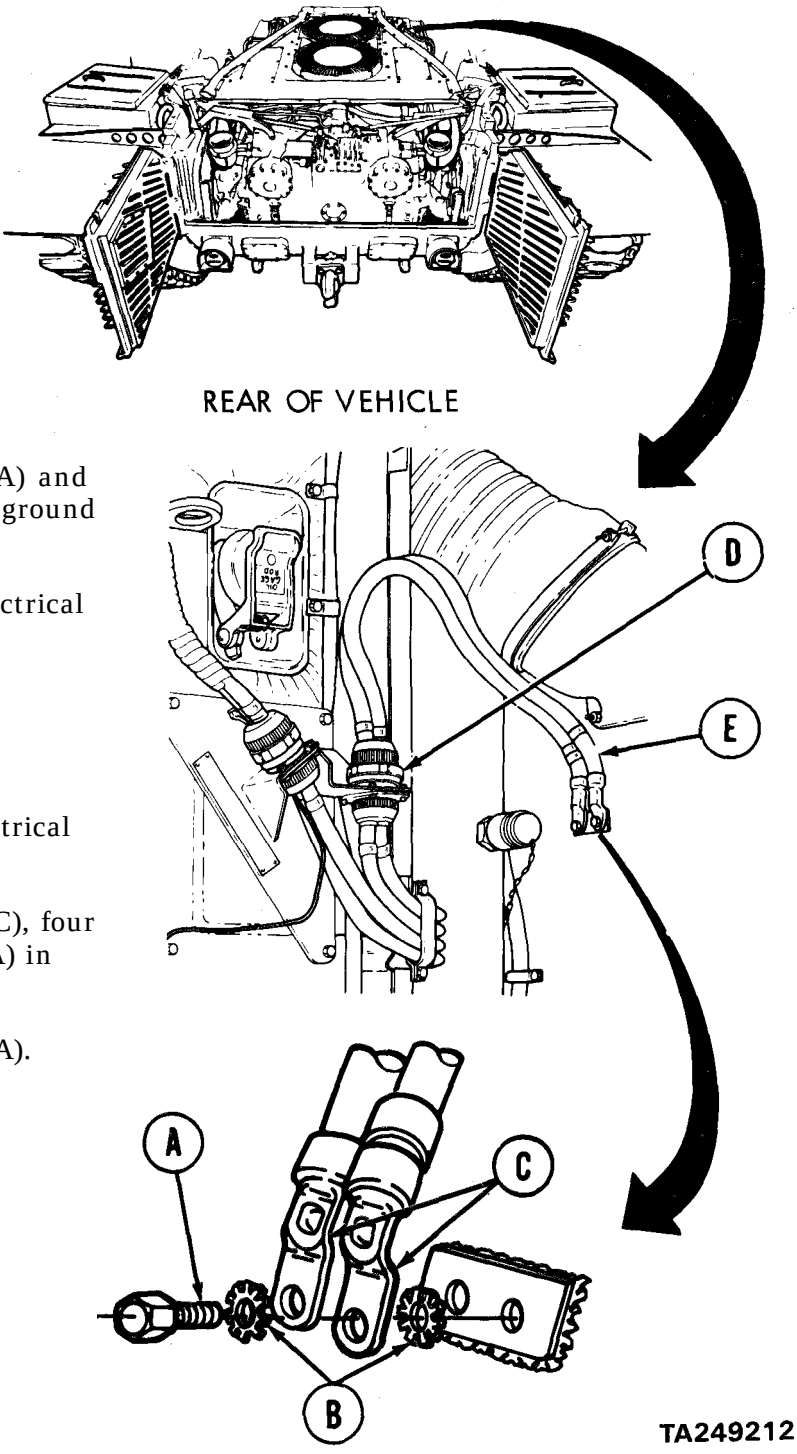
RIGHT SIDE ENGINE DISCONNECT GROUND LEAD ASSEMBLY REPLACEMENT (Sheet 1 of 1)

TOOLS: 9/16 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
Spanner wrench

SUPPLIES: Lockwashers (4 required)

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Open top right engine grille doors (TM 5-5420-202-10)



REMOVAL:

1. Using socket, remove two screws (A) and four lockwashers (B) securing two ground lead terminals (C) to hull wall.
2. Using spanner wrench, remove electrical connector (D) from engine.
3. Remove ground lead assembly (E).

INSTALLATION:

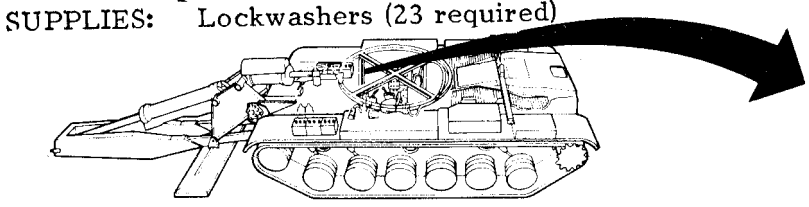
1. Using spanner wrench, install electrical connector (D) to engine.
2. Place two ground lead terminals (C), four lockwashers (B), and two screws (A) in position on hull wall.
3. Using socket, tighten two screws (A).
4. Close top right engine grille doors (TM 5-5420-202-10).

End of Task

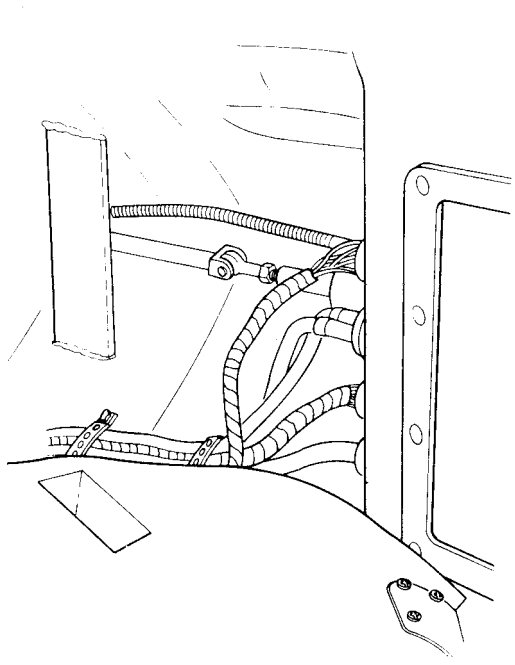
RECEPTACLE MOUNTING PLATE AND GASKET REPLACEMENT (Sheet 1 of 2)

TOOLS: Flat-tip screwdriver
9/16 in. socket with 1/2in. drive
Ratchet with 1/2 in. drive
5 in. extension with 1/2 in. drive
Spanner wrench

SUPPLIES: Lockwashers (23 required)

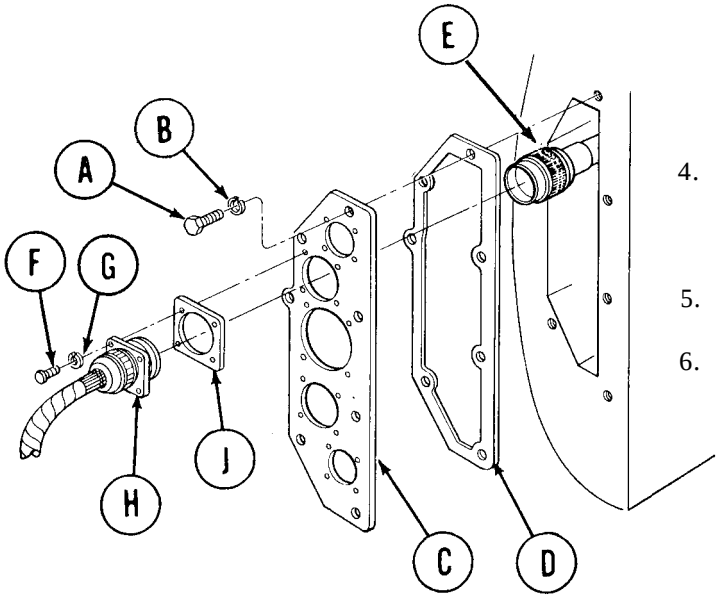


QUADRANTS REMOVED FOR CLARITY



REMOVAL:

1. Using socket with extension, remove seven screws (A) and lockwashers (B) securing mounting plate (C) and gasket (D) to bulkhead.
2. Pull mounting plate (C) away from bulkhead.
3. Using spanner wrench, disconnect four connectors (E).



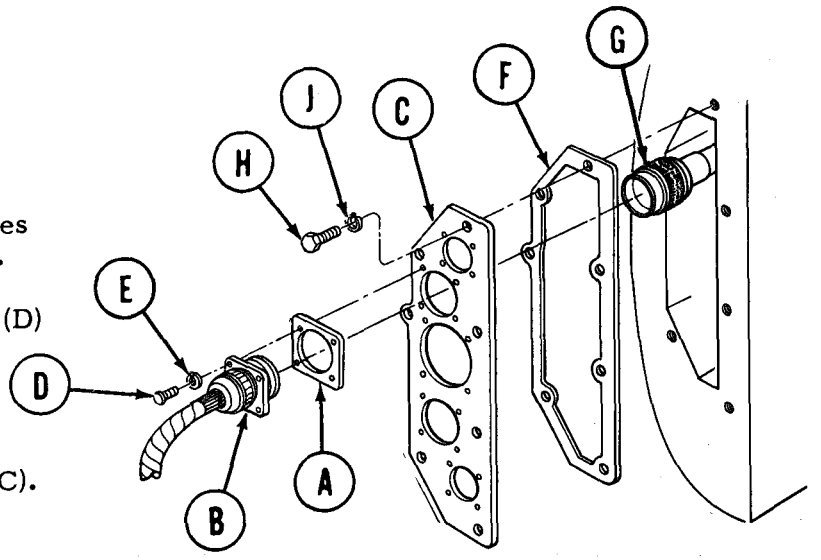
4. Using screwdriver, remove 16 screws (F) and lockwashers (G) securing four receptacles (H) and gaskets (J) to mounting plate (C).
5. Remove four receptacles (H) and gaskets (J).
6. Remove gasket (D) from mounting plate (C).

Go on to Sheet 2

TA249213

RECEPTACLE MOUNTING PLATE AND GASKET REPLACEMENT (Sheet 2 of 2)

INSTALLATION:



1. Place four gaskets (A) and receptacles (B) in position on mounting plate (C).
2. Using screwdriver, install 16 screws (D) and lockwashers (E) securing four receptacles (B) and gaskets (A) to mounting plate (C).
3. Place gasket (F) on mounting plate (C).
4. Using spanner wrench, connect four connectors (G).
5. Position mounting plate (C) and gasket (F) to bulkhead.
6. Using socket and extension, install seven screws (H) and lockwashers (J) attaching mounting plate (C) and gasket (F) to bulkhead.

End of Task

TA249214

ENGINE STARTER WIRING HARNESSES REPLACEMENT (Sheet 1 of 7)

PROCEDURE INDEX

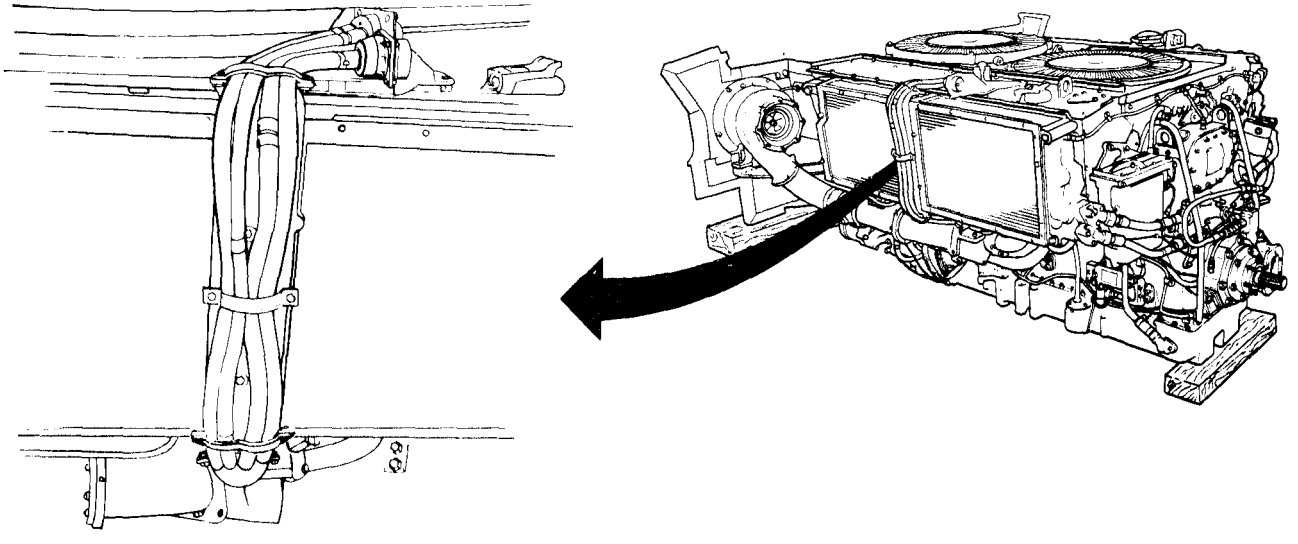
TOOLS: Ratchet with 1/2 in. drive
5 in. extension with 1/2 in. drive
7/16 in. socket with 1/2 in. drive
3/4 in. combination box and open end wrench
3/8 in. combination box and open end wrench
Diagonal pliers
Flat-tip screwdriver
1/2 in. socket with 1/2 in. drive
7/16 in. combination box and open end wrench

SPECIAL TOOLS: Ground hop kit (Item 31, Chapter 3, Section I)

SUPPLIES: Glyptol (Item 39, Appendix D)
Rags (Item 65, Appendix D)
Cable ties (as required)
Lockwashers (10 required)

REFERENCES: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Remove powerplant (page 5-2)
Remove engine shroud (page 9-30)



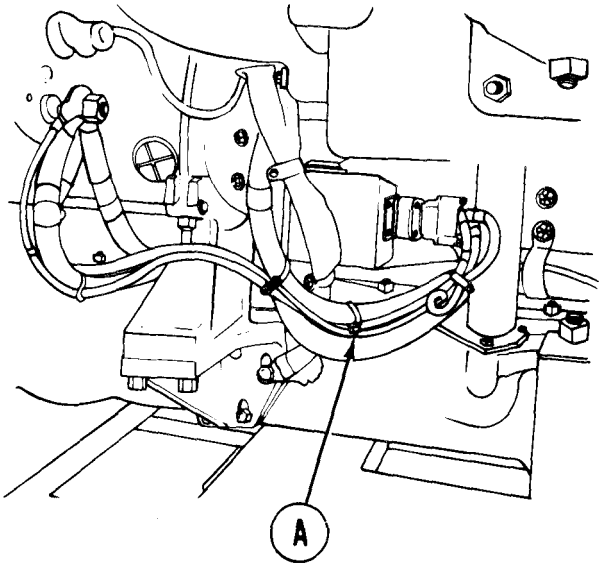
Go on to Sheet 2

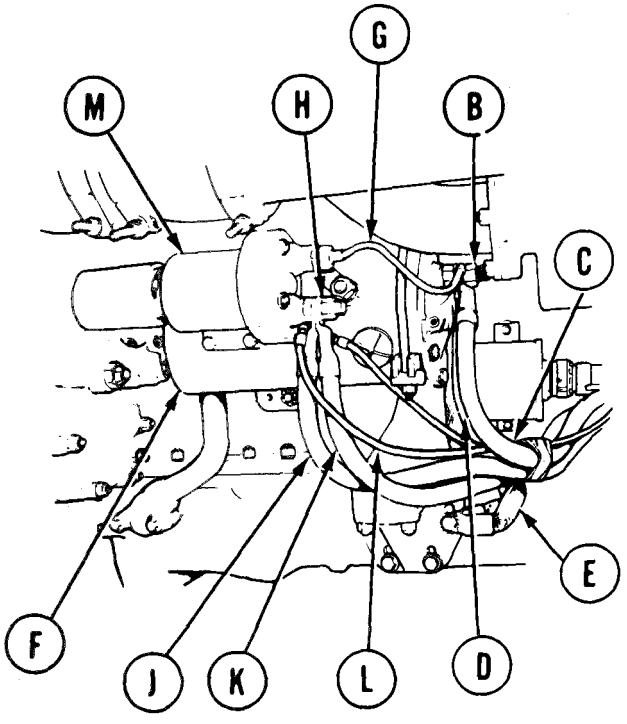
TA249215

ENGINE STARTER WIRING HARNESSES REPLACEMENT (Sheet 2 of 7)

REMOVAL:

1. Using diagonal pliers, cut all cable ties (A).

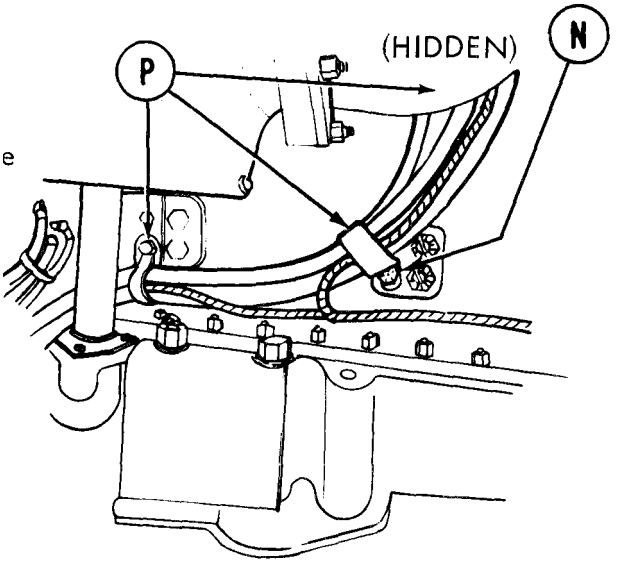




2. Using 3/4 inch wrench, remove nut and lockwasher (B). Remove heavy cables (C) and (D) and ground strap (E) from starter (F). Do not remove small cable (G).

3. Using 3/4 inch wrench, remove nut and lockwasher (H). Remove heavy cables (J) and (K) and light cable (L) from solenoid relay (M).

4. Using 1/2 inch socket and extension, remove screws (N) from cable three clamps (P). Remove e cable clamps.

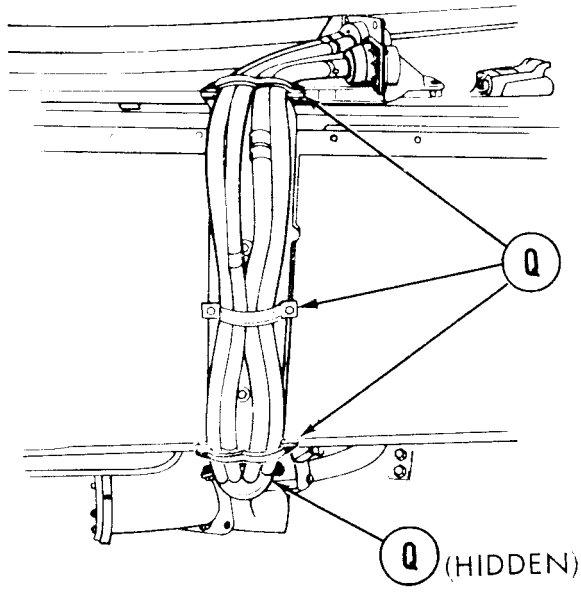


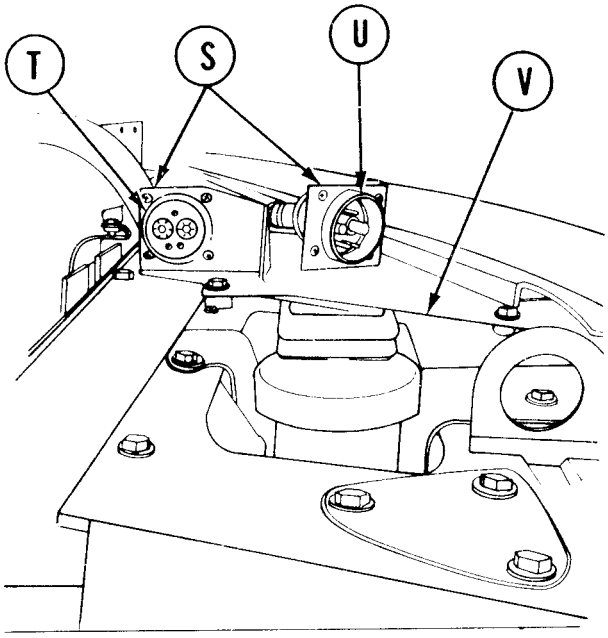
TA249216

Go on to Sheet 3

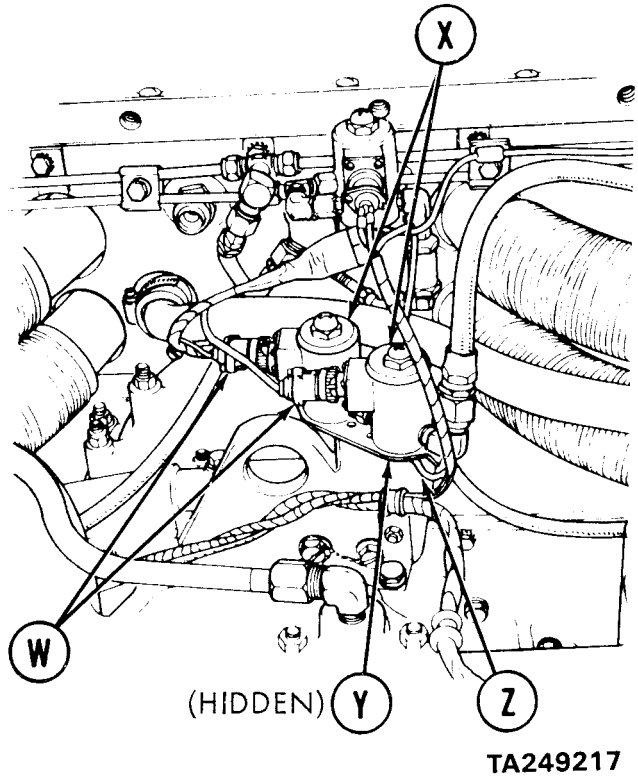
ENGINE STARTER WIRING HARNESSES REPLACEMENT (Sheet 3 of 7)

5. Using 7/16 inch socket, remove eight screws and four clamps (Q).





6. Using screwdriver and 3/8 inch wrench, remove eight screws, lockwashers, and nuts (S). Remove electrical connectors (T) and (U) from connector bracket (V).



TA249217

7. Disconnect electrical connectors (W) from engine smoke generator solenoid (X).

8. Using 7/16 inch wrench to hold screw and 7/16 inch socket on nut, remove nut and screw (Y) and remove ground wire (Z) from bracket.

9. Remove cables from engine.

Go on to Sheet 4

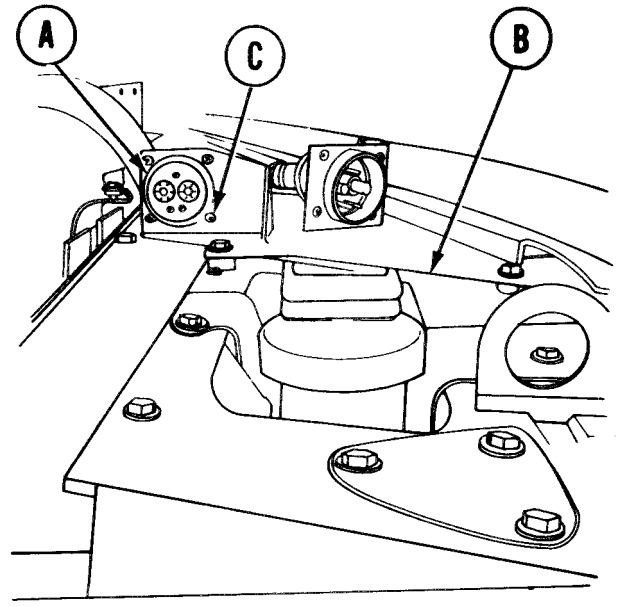
ENGINE STARTER WIRING HARNESSES REPLACEMENT (Sheet 4 of 7)

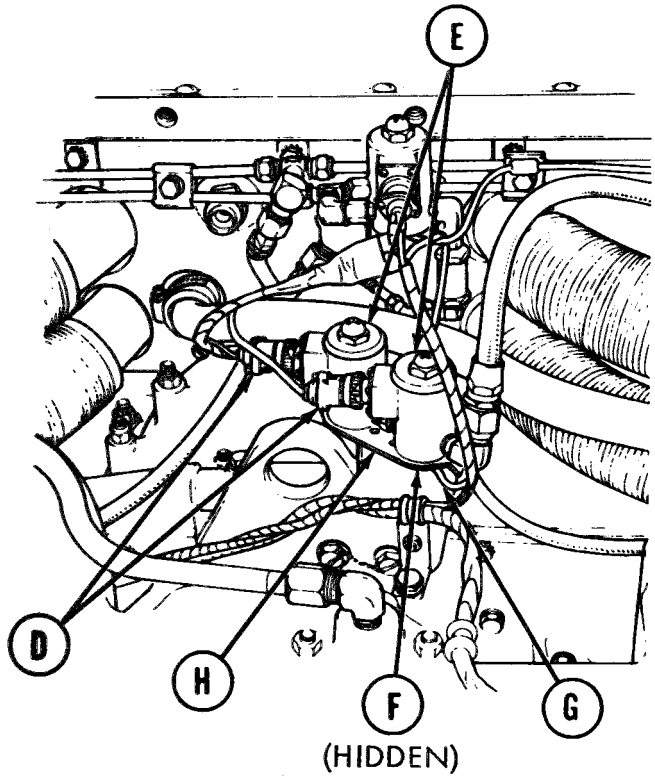
INSTALLATION:

NOTE

Note polarization. Two small holes goon bottom.

1. Using flat-tip screwdriver and 3/8 inch wrench, secure female connector (A) to bracket (B) using four screws, lockwashers, and nuts (C).

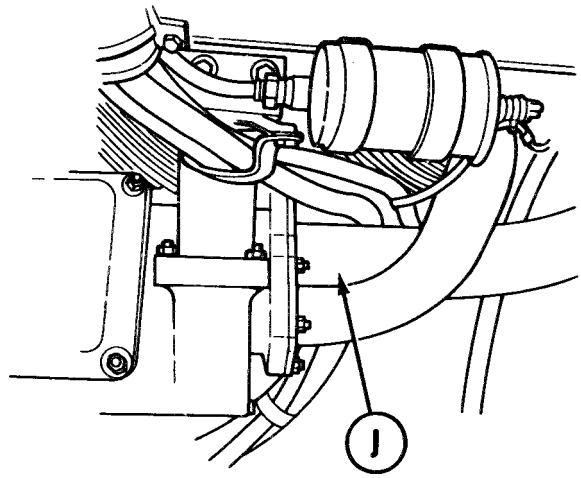




2. Manually connect electrical connectors (D) to engine smoke generator solenoids (E).

3. Using 7/16 inch wrench and 7/16 inch socket, install nut and screw (F) to secure ground wire (G) to bracket (H).

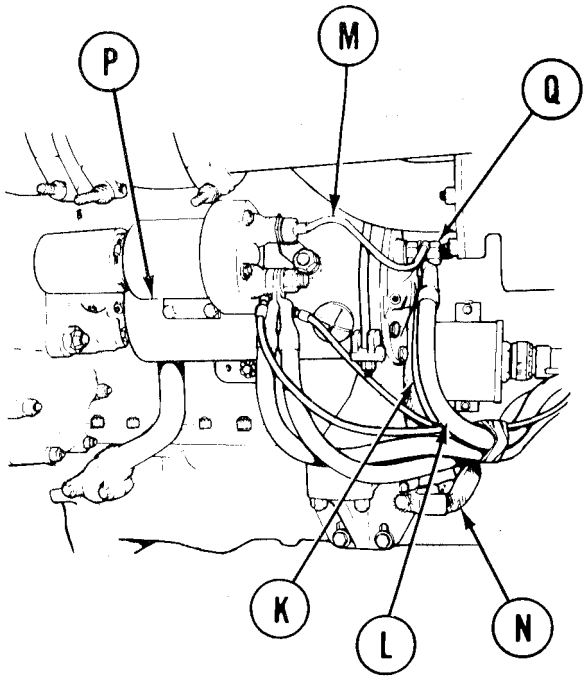
4. Feed female connector cables between exhaust manifold (J) and engine.



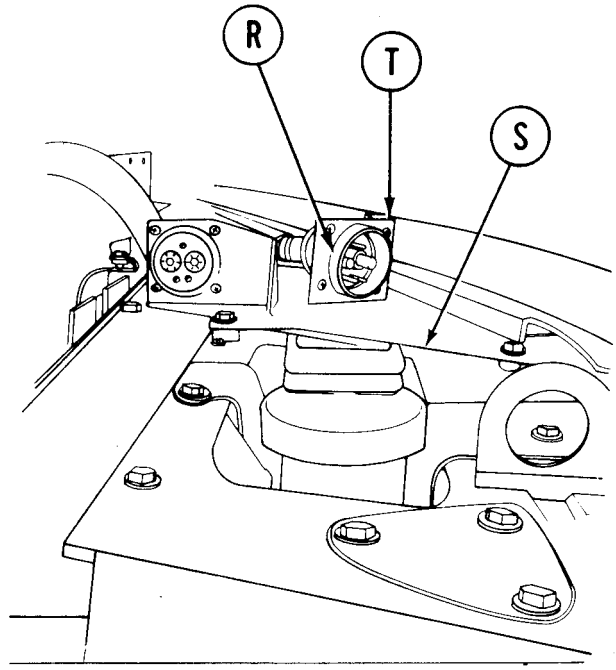
Go on to Sheet 5

TA249218

ENGINE STARTER WIRING HARNESSES REPLACEMENT (Sheet 5 of 7)



5. Using 3/4 inch wrench, secure female connector cables (K) and (L), light cable (M), and ground cables (N) to starter (P) with nut and lockwasher (Q).



NOTE

Note polarization. Single male prong goes on top.

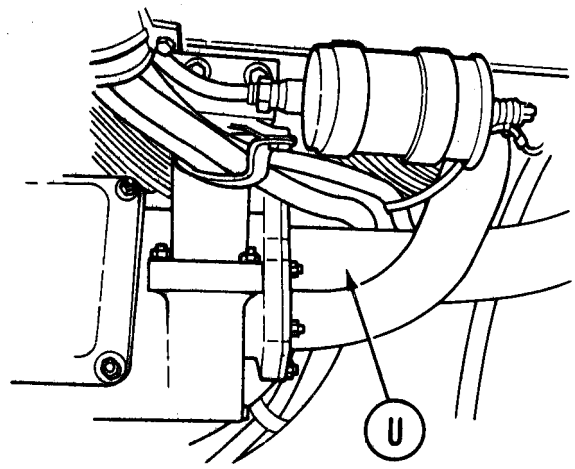
6. Using flat-tip screwdriver and 3/8 inch box, secure male connector (R) to bracket (S) using four screws, lockwashers, and nuts (T).

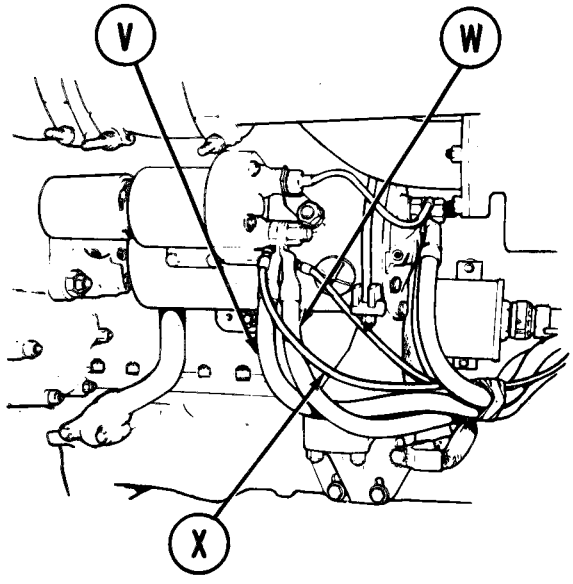
Go on to Sheet 6

TA249219

ENGINE STARTER WIRING HARNESSES REPLACEMENT (Sheet 6 of 7)

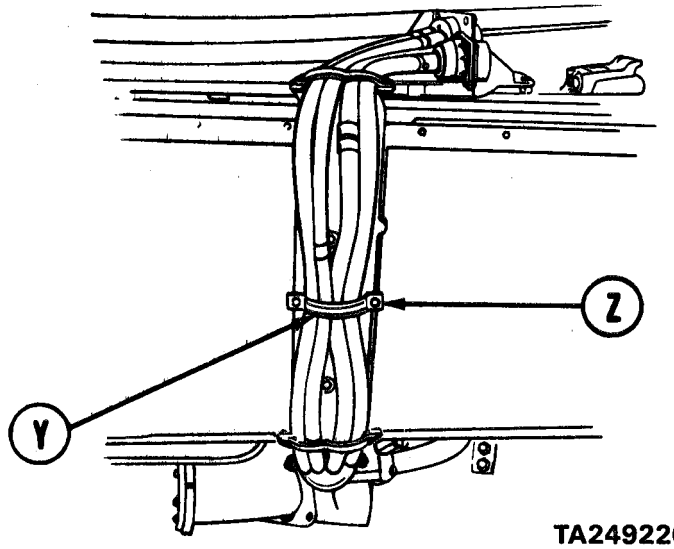
5. Feed male connector cables between exhaust manifold (U) and engine.





6. Using 3/4 inch wrench, secure male connector cables (V) and (W) and light cable (X) with lockwasher and nut.

7. Using 7/16 inch socket, secure cables with four clamps (Y) and eight lockwashers and screws (Z).

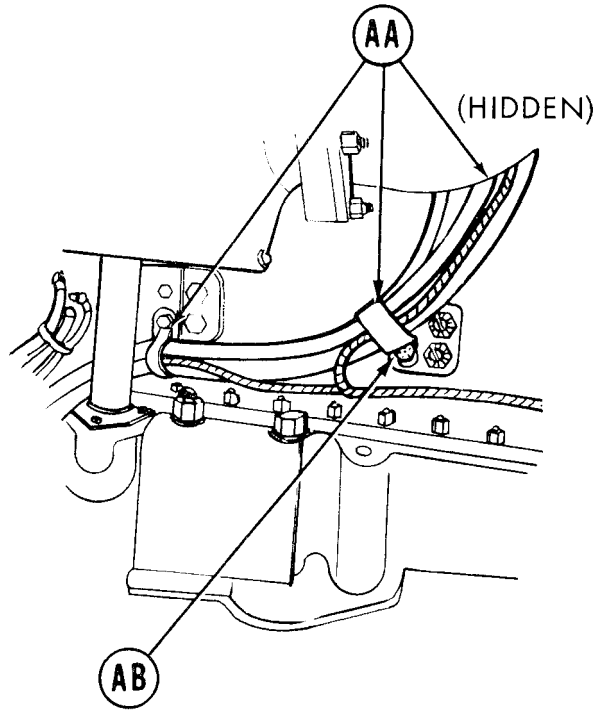


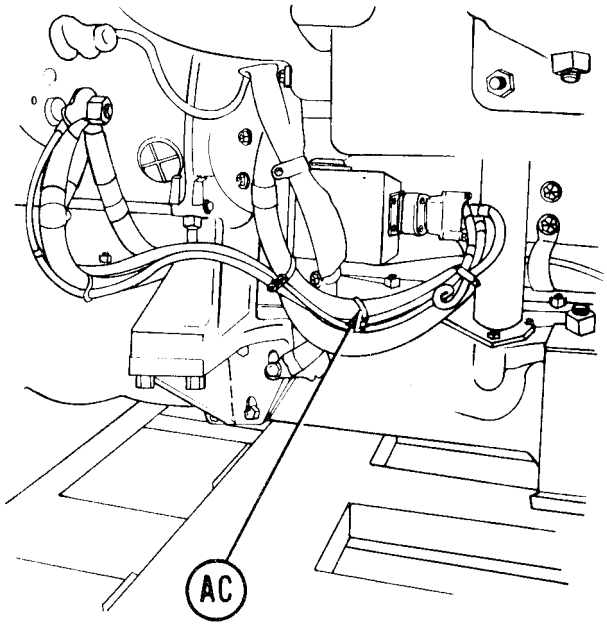
TA249220

Go on to Sheet 7

ENGINE STARTER WIRING HARNESSES REPLACEMENT (Sheet 7 of 7)

8. Using 1/2 inch socket and extension, secure cable clamps (AA) with screws (AB).
9. Secure cables with cable ties (AC).
10. Connect powerplant for ground hop (page 5-26).
11. Start engine (TM 5-5420-202-10).
12. Stop engine (TM 5-5420-202-10).





13. Coat all exposed terminal fittings with glyptol.
14. Disconnect powerplant from test set-up (page 5-26).
15. Install engine shroud (page 9-6).
16. Install powerplant (page 5-14).

End of Task

TA249221

TRANSMISSION WIRING HARNESS REPLACEMENT (Sheet 1 of 4)

PROCEDURE INDEX

TOOLS: 3/4 in. combination box and open end wrench
7/16 in. combination box and open end wrench (2 required)
Slip-joint pliers
9/16 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
Flat-tip screwdriver
Spanner wrench

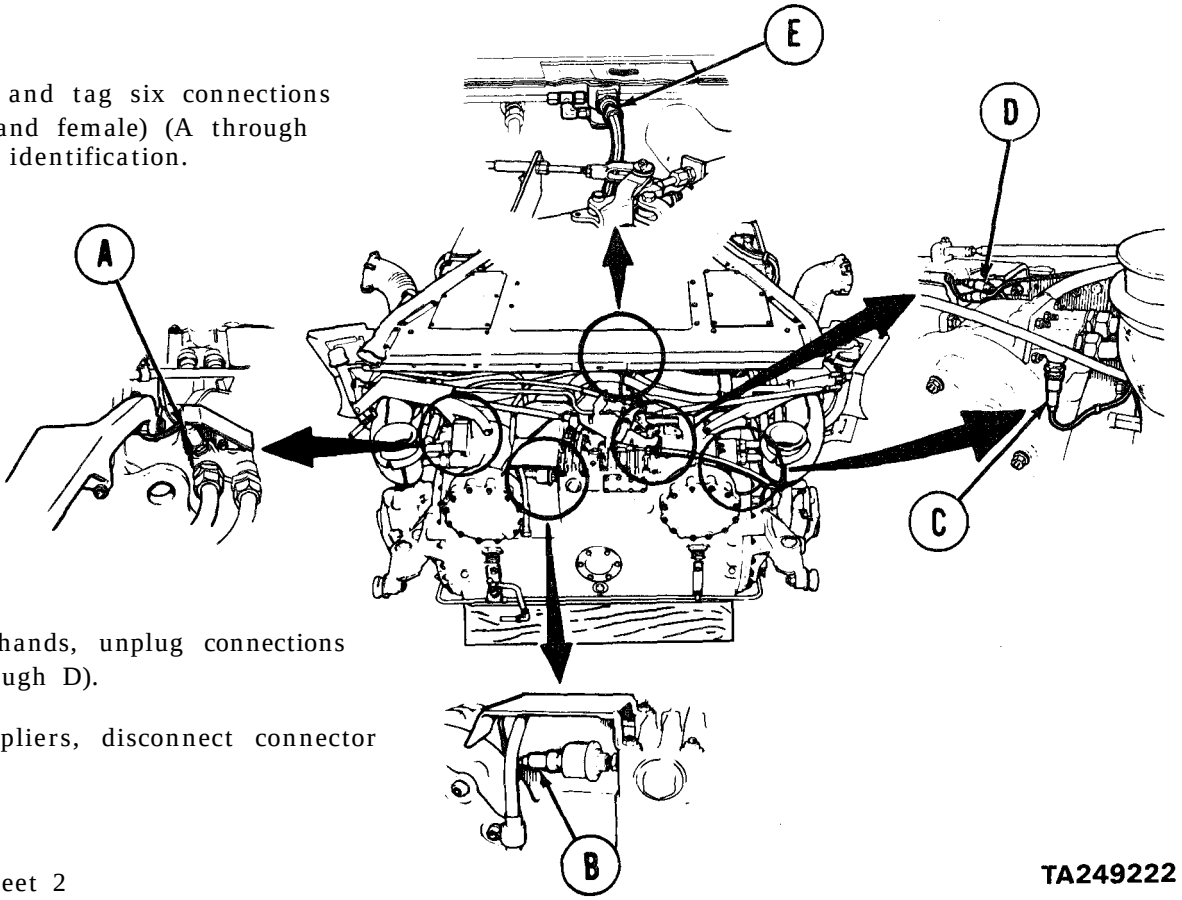
SUPPLIES: Identification tags
Grommet

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Remove powerplant (page 5-2)

REMOVAL:

1. Locate and tag six connections (male and female) (A through E) for identification.



2. Using hands, unplug connections (A through D).

3. Using pliers, disconnect connector (E).

Go on to Sheet 2

TA249222

TRANSMISSION WIRING HARNESS REPLACEMENT (Sheet 2 of 4)

4. Using 3/4-inch wrench, remove six nuts (F) and clamps (G) securing wiring harness to transmission.

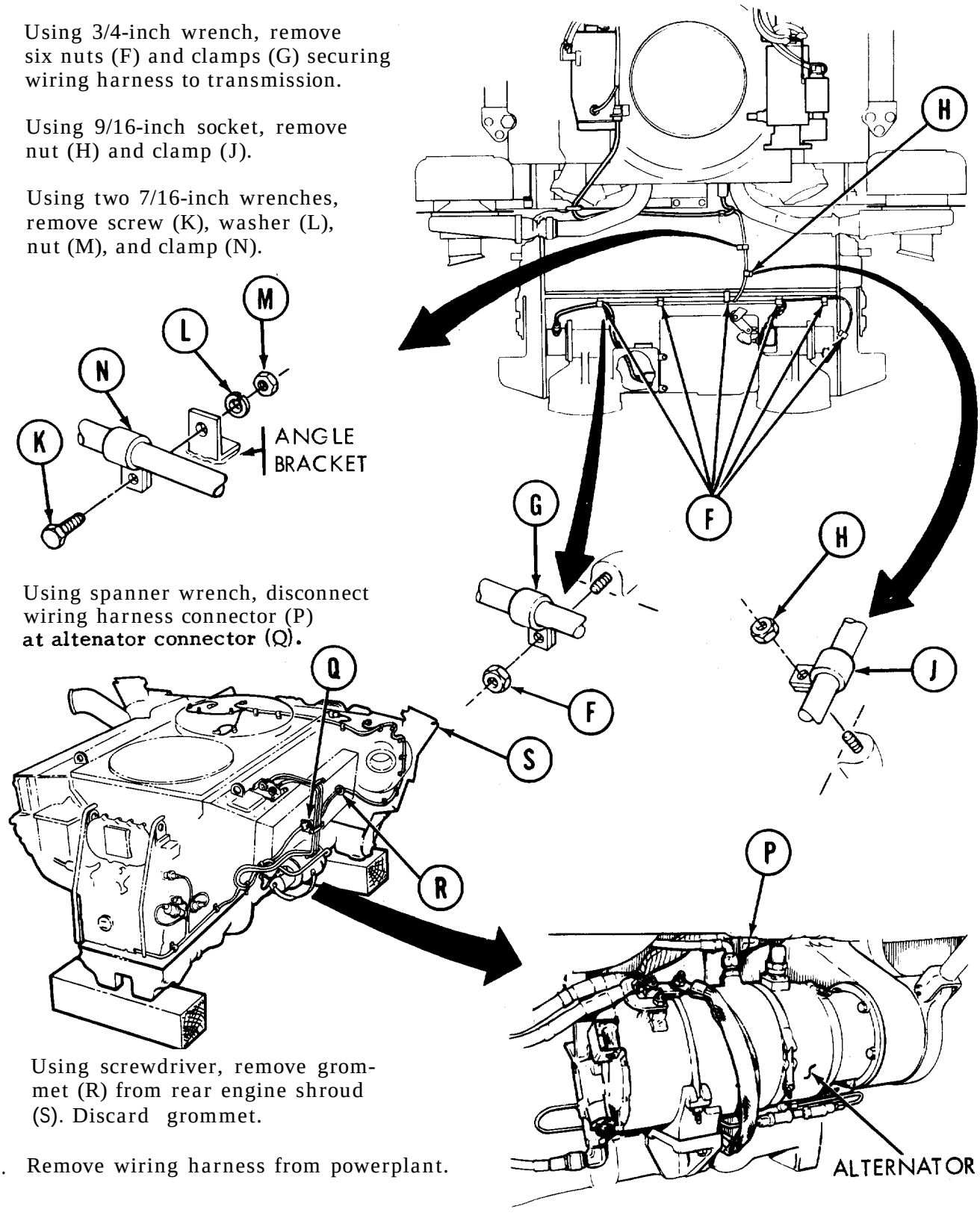
5. Using 9/16-inch socket, remove nut (H) and clamp (J).

6. Using two 7/16-inch wrenches, remove screw (K), washer (L), nut (M), and clamp (N).

7. Using spanner wrench, disconnect wiring harness connector (P) at altenator connector (Q).

8. Using screwdriver, remove grommet (R) from rear engine shroud (S). Discard grommet.

9. Remove wiring harness from powerplant.



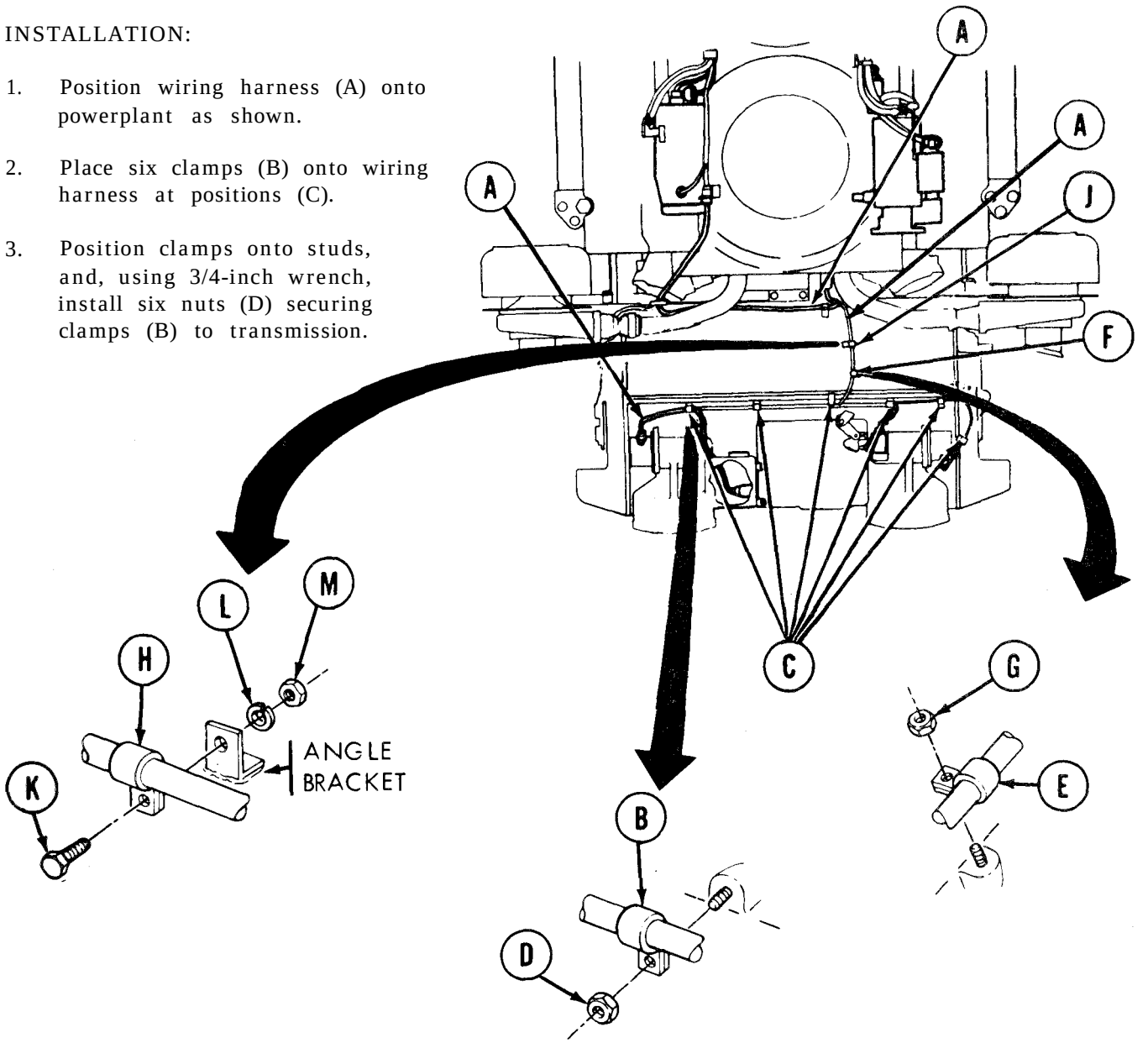
TA249223

Go on to Sheet 3

TRANSMISSION WIRING HARNESS REPLACEMENT (Sheet 3 of 4)

INSTALLATION:

1. Position wiring harness (A) onto powerplant as shown.
2. Place six clamps (B) onto wiring harness at positions (C).
3. Position clamps onto studs, and, using 3/4-inch wrench, install six nuts (D) securing clamps (B) to transmission.



4. Place clamp (E) onto wiring harness at position (F).
5. Position clamp onto stud and, using 9/16-inch socket, install nut (G) securing clamp (E) to transmission.
6. Place clamp (H) onto wiring harness at position (J).
7. Position clamp onto bracket, and, using two 7/16-inch wrenches, install screw (K), washer (L), and nut (M) securing clamp (H) to bracket.

TA249224

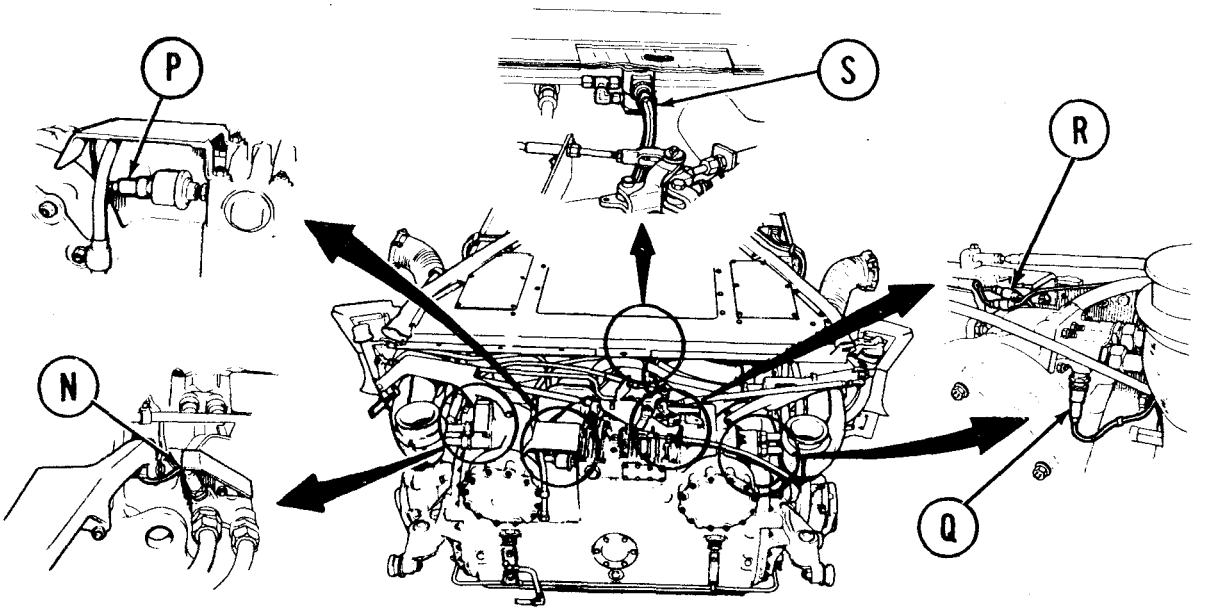
Go on to Sheet 4

TRANSMISSION WIRING HARNESS REPLACEMENT (Sheet 4 of 4)

8. Using hands, connect four leads (N through R) to their mating connections according to tags.

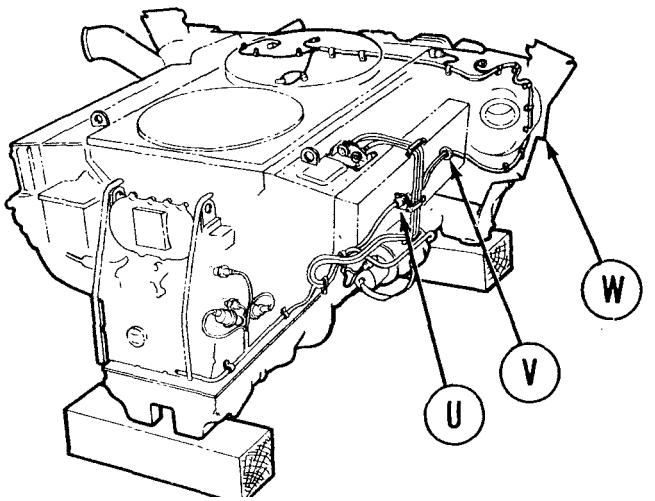
9. Using pliers, connect lead (S) to its mating connection according to tags.

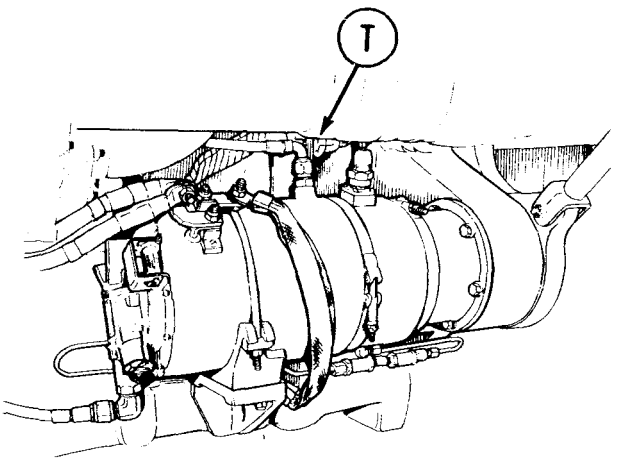
10. Remove all tags.



11. Using spanner wrench, connect wiring harness connector (T) to alternator harness (U).

12. Using hands, install new grommet (V) into rear engine shourd (W).





13. Install power plant (page 5-14).

14. Perform operational check (TM 5-5420-202-10).

End of Task

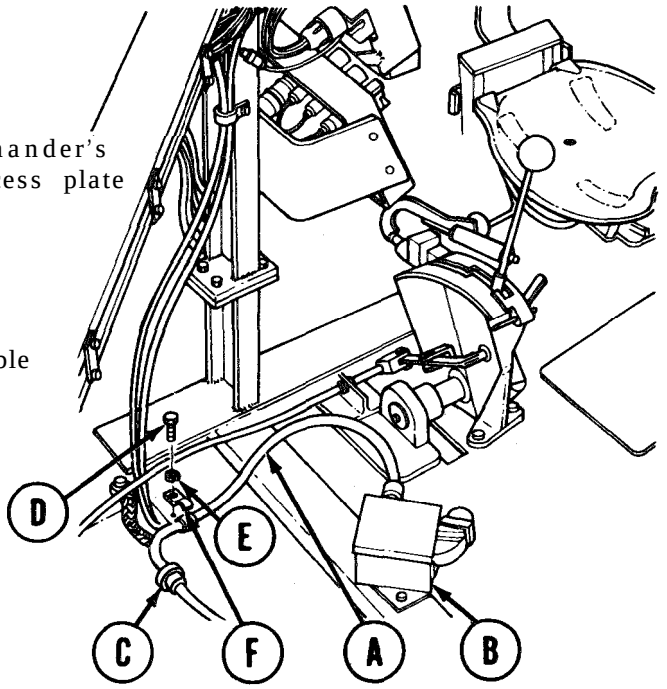
TA249225

INTERCONNECTING BOX CABLE ASSEMBLY REPLACEMENT (Sheet 1 of 1)

TOOLS: 9/16 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
Spanner wrench

SUPPLIES: Lockwasher

PRELIMINARY PROCEDURE: Remove commander's seat floor access plate (page 17-9)



REMOVAL:

1. Using spanner wrench, remove ends of cable assembly (A) from interconnecting box (B) and connector (C).
2. Using socket, remove screw (D) and lockwasher (E) securing loop clamp (F) to floor plate.
3. Remove cable assembly (A).

INSTALLATION

1. Position cable assembly (A) along hull floor.
2. Using spanner wrench connect cable assembly (A) to interconnecting box (B) and connector (C).
3. Using socket, install screw (D) and lockwasher (E) securing loop clamp (F) to hull floor.
4. Install commander's seat floor access plate (page 17-9).

End of Task

TA249226

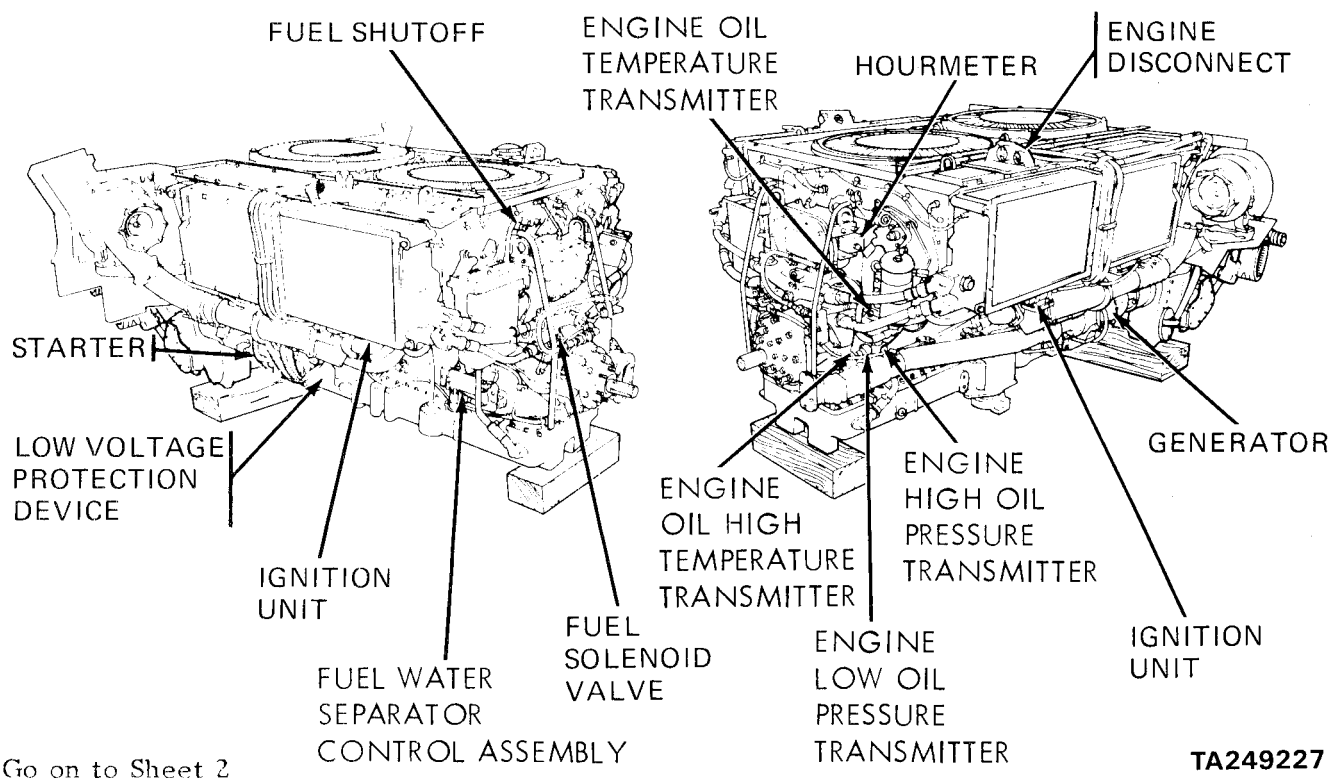
ENGINE WIRING HARNESS REPLACEMENT (Sheet 1 of 12)

PROCEDURE INDEX

TOOLS:
- Spanner wrench
- 3/8 in. combination box and open end wrench
- 3/4 in. combination box and open end wrench
- 7/8 in. combination box and open end wrench
- 2 in. extension with 1/2 in. drive
- Ratchet with 1/2 in. drive
- 7/16 in. socket with 1/2 in. drive
- 1/2 in. socket with 1/2 in. drive
- Cross-tip screwdriver
- Flat-tip screwdriver
- Slip joint pliers
- Diagonal cutting pliers
- Adjustable wrench
- 9/16 in. combination box and open end wrench

SUPPLIES:
- Lockwashers (33 required)
- Silicone compound (Item 32, Appendix D)
- Cable ties (as required)

PRELIMINARY PROCEDURE: Remove powerplant (page 5-2)

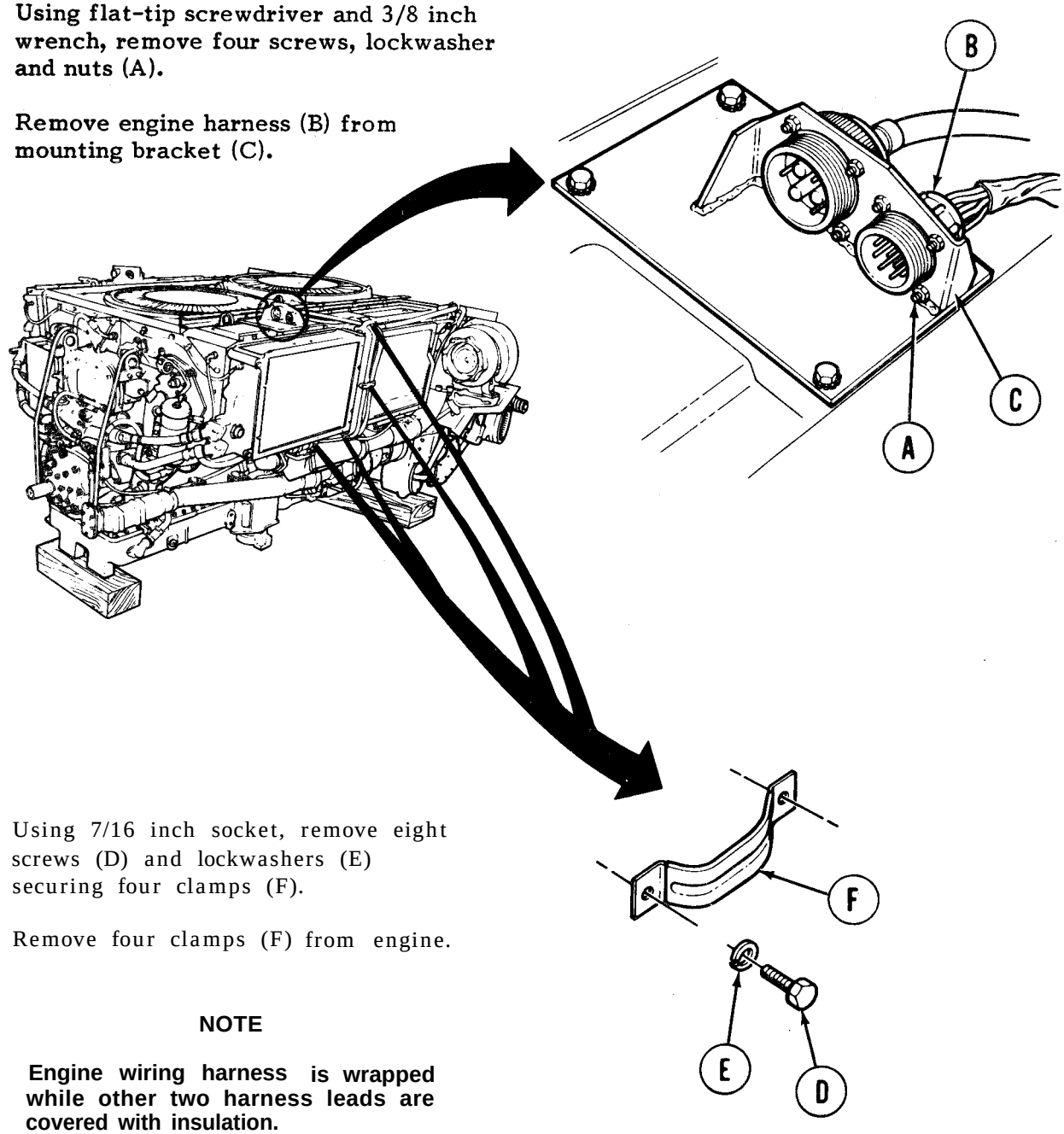


Go on to Sheet 2

ENGINE WIRING HARNESS REPLACEMENT (Sheet 2 of 12)

REMOVAL:

1. **Using flat-tip screwdriver and 3/8 inch wrench, remove four screws, lockwasher and nuts (A).**
2. **Remove engine harness (B) from mounting bracket (C).**



3. Using 7/16 inch socket, remove eight screws (D) and lockwashers (E) securing four clamps (F).
4. Remove four clamps (F) from engine.

NOTE

Engine wiring harness is wrapped while other two harness leads are covered with insulation.

5. Separate and remove engine wiring harness (B) from top of engine.

Go on to Sheet 3

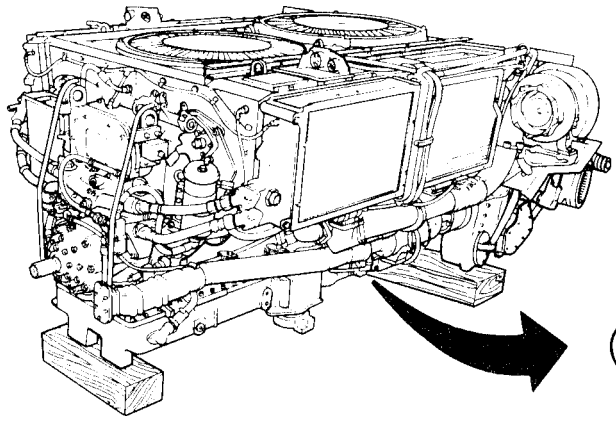
TA249228

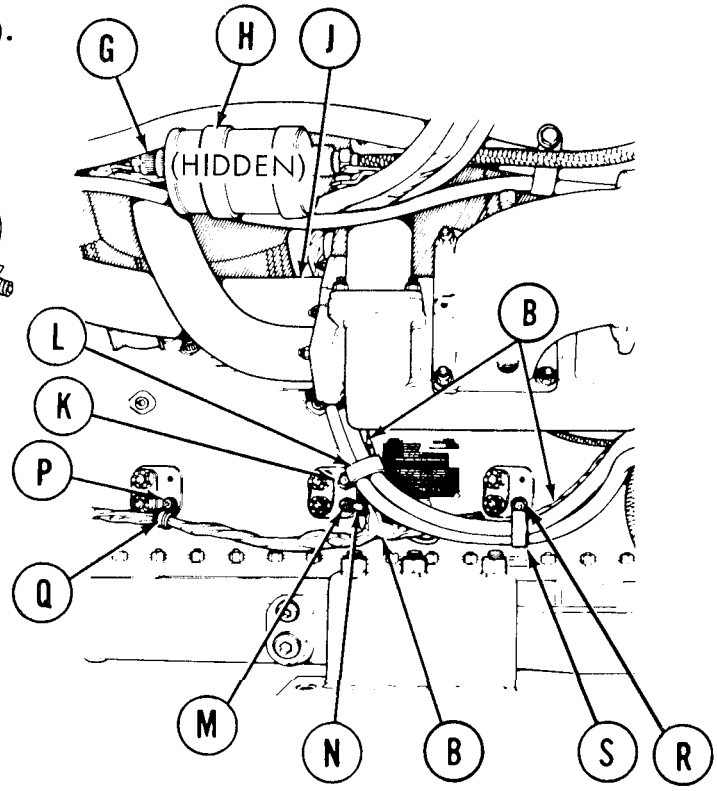
ENGINE WIRING HARNESS REPLACEMENT (Sheet 3 of 12)

6. Using slip joint pliers and hands to loosen, disconnect electrical lead (CKT 86/GND) (G) from ignition unit (H).

7. Using 1/2 inch socket, remove nut and lockwasher (J) securing clamp (hidden).

8. Remove clamp from wiring harness (B).





9. Using 1/2 inch socket, remove screw and lockwasher (K).

10. Remove clamp (L) from electrical wiring harness (B).

11. Using 1/2 inch socket, remove screw and lockwasher (M) securing ground lead (N).

12. Using 1/2 inch socket, remove screw and lockwasher (P).

13. Remove clamp (Q) from wiring harness (B).

14. Using 1/2 inch socket, remove screw and lockwasher (R).

15. Remove clamp (S) from engine wiring harness (B).

Go on to Sheet 4

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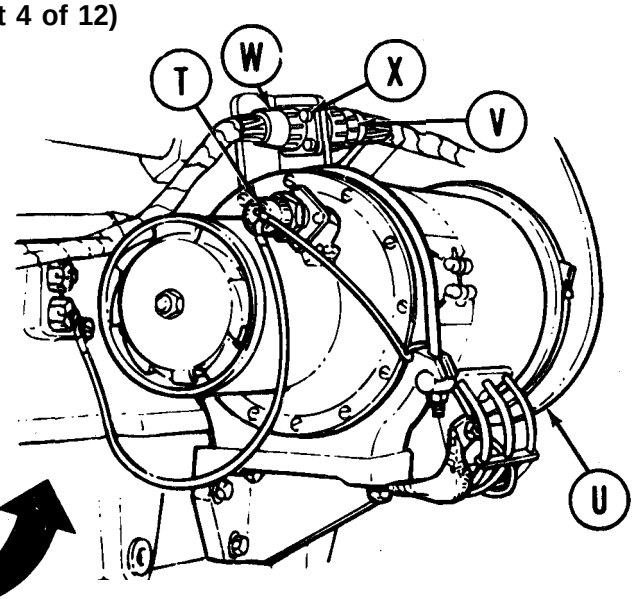
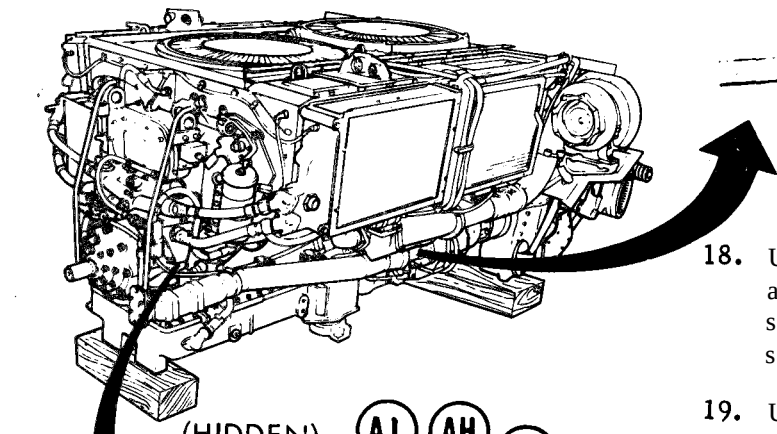
ENGINE WIRING HARNESS REPLACEMENT (Sheet 4 of 12)

16. Using spanner wrench, disconnect electrical connector (T) from generator (U).

17. Using spanner wrench, disconnect electrical connector (V) from electrical connector (W).

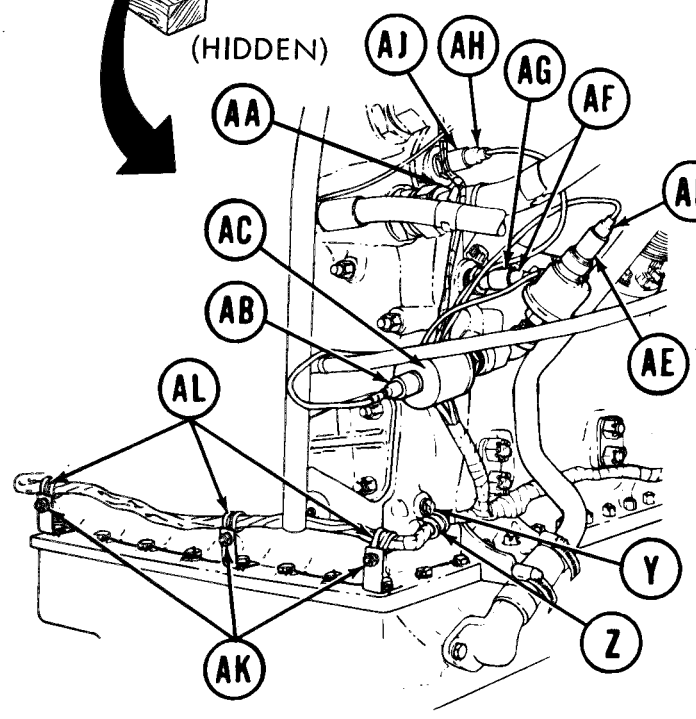




18. Using cross-tip screwdriver and adjustable wrench, remove four screws, lockwashers, and nuts (X) securing electrical connector (W).

19. Using 1/2 inch socket, remove screw and lockwasher (Y).

20. Remove clamp (Z).



21. Using 1/2 inch socket with extension, remove nut (AA) securing clamp (hidden).

22. Remove clamp.

23. Disconnect electrical connector (AB) from engine oil pressure switch (AC).

24. Disconnect electrical connector (AD) from engine high oil pressure transmitter (AE).

25. Disconnect electrical connector (AF) from engine oil high temperature thermostatic switch (AG).

26. Disconnect electrical connector (AH) from engine oil temperature transmitter (AJ).

27. Using 7/16 inch socket and 3/8 inch wrench, remove three screws, lockwashers and nuts (AK).

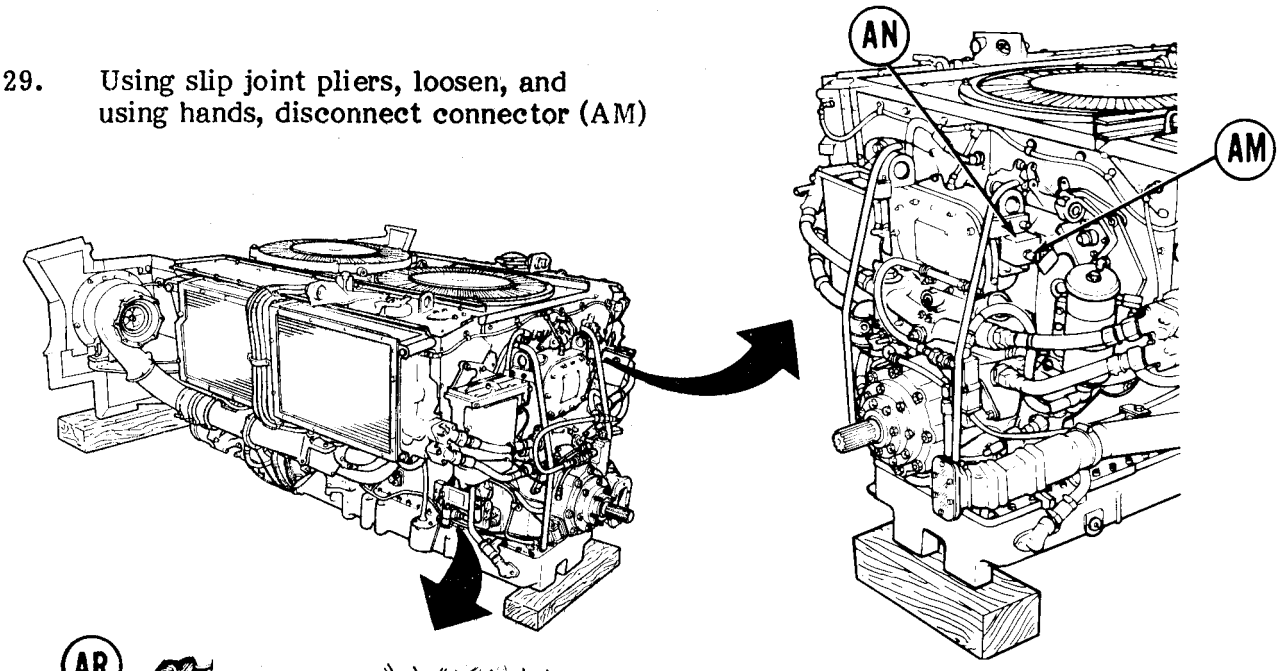
28. Remove three clamps (AL).

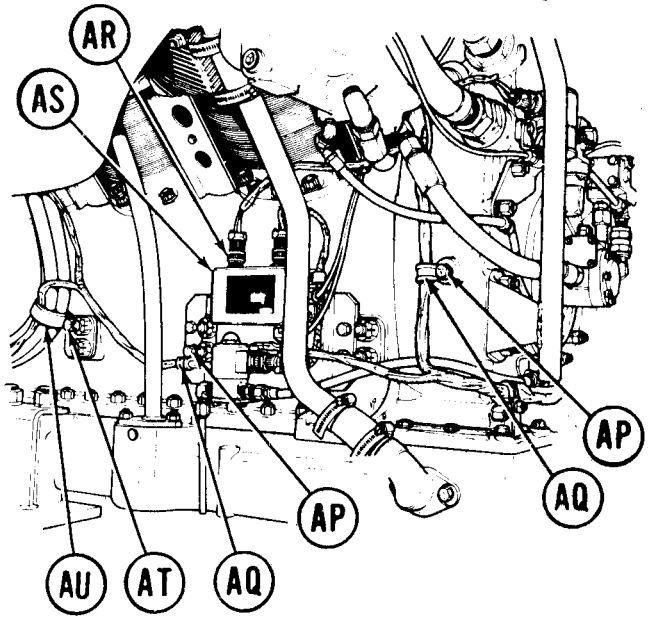
Go on to Sheet 5

TA249230

ENGINE WIRING HARNESS REPLACEMENT (Sheet 5 of 12)

29. Using slip joint pliers, loosen, and using hands, disconnect connector (AM)





30. Using 1/2 inch socket with extension, remove two screws and lockwashers (AP).

31. Remove two clamps (AC).

32. Using slip joint pliers, loosen, and using hands, disconnect connector (AR) from fuel- water separator control (AS).

331 Using 1/2 inch socket with extension, remove screw and lockwashers (AT) securing clamp (AU).

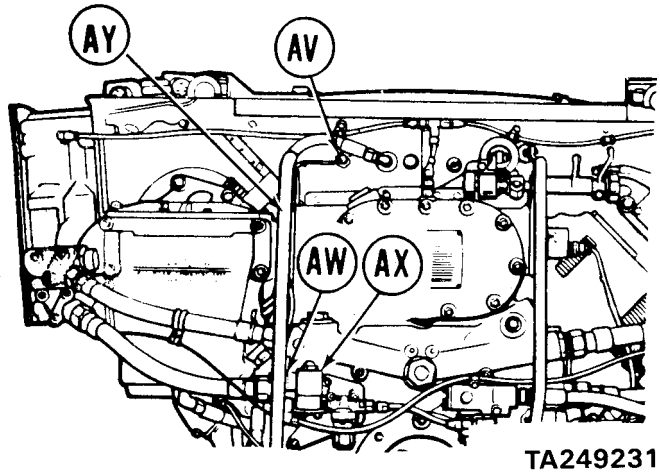
34. Remove clamp (AU).

35. Using 7/8 inch wrench disconnect electrical lead (AV) from front of engine.

36. Using slip joint pliers, loosen, and using hands, disconnect electrical connector (AW) from solenoid valve (AX).

37. Using 9/16 inch wrench, remove nut (AY). securing clamp (hidden).

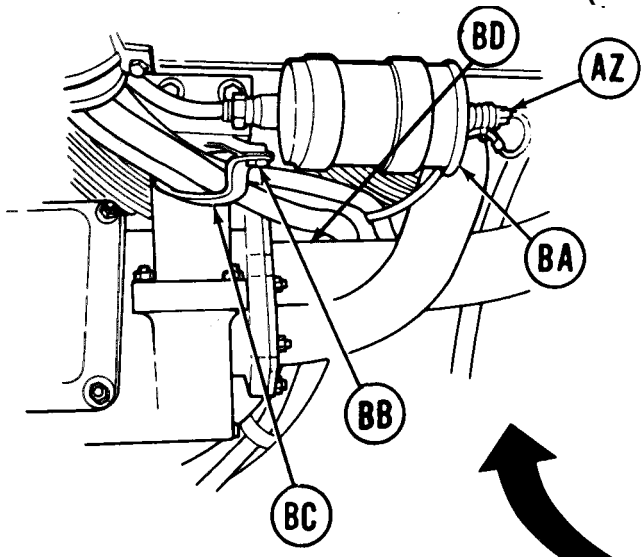
38. Remove clamp.



TA249231

Go on to Sheet 6

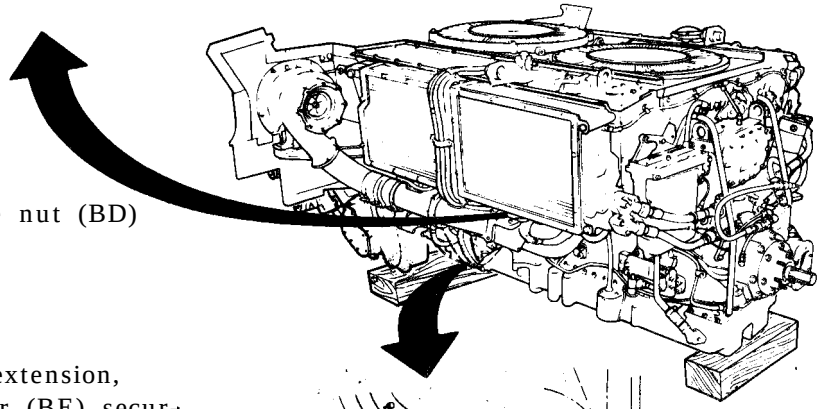
ENGINE WIRING HARNESS REPLACEMENT (Sheet 6 of 12)



39. Using slip joint pliers, remove electrical connector (AZ) from ignition unit (BA).

40. Using 7/16 inch socket, remove two screws and lockwashers (BB) securing clamp (BC).

41. Remove clamp.



42. Using 1/2 inch socket, remove nut (BD) securing clamp (hidden).

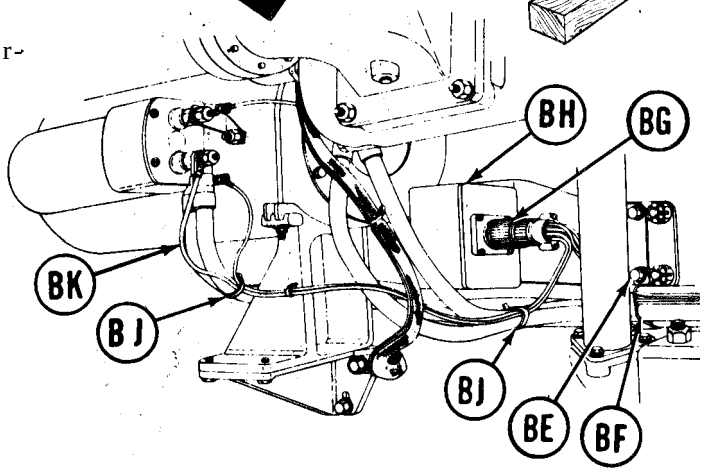
43. Remove clamp.

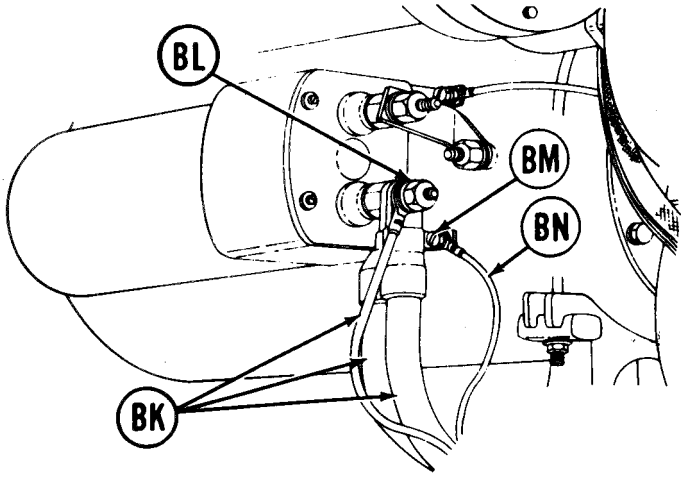
44. Using 1/2 inch socket with extension, remove screw and lockwasher (BE) securing clamp (BF).

45. Remove clamp (BF).

46. Using spanner wrench, disconnect electrical connector (BG) from low voltage protection relay (BH).

47. Using cutting pliers, cut and remove two plastic straps (BJ) from cables (BK).





48. Using 3/4 inch wrench, remove nut and lockwasher (BL).

49. Remove three cables (BK).

50. Using flat-tip screwdriver, remove screw (BM).

51. Remove electrical cable (BN).

52. Remove engine wiring harness from engine.

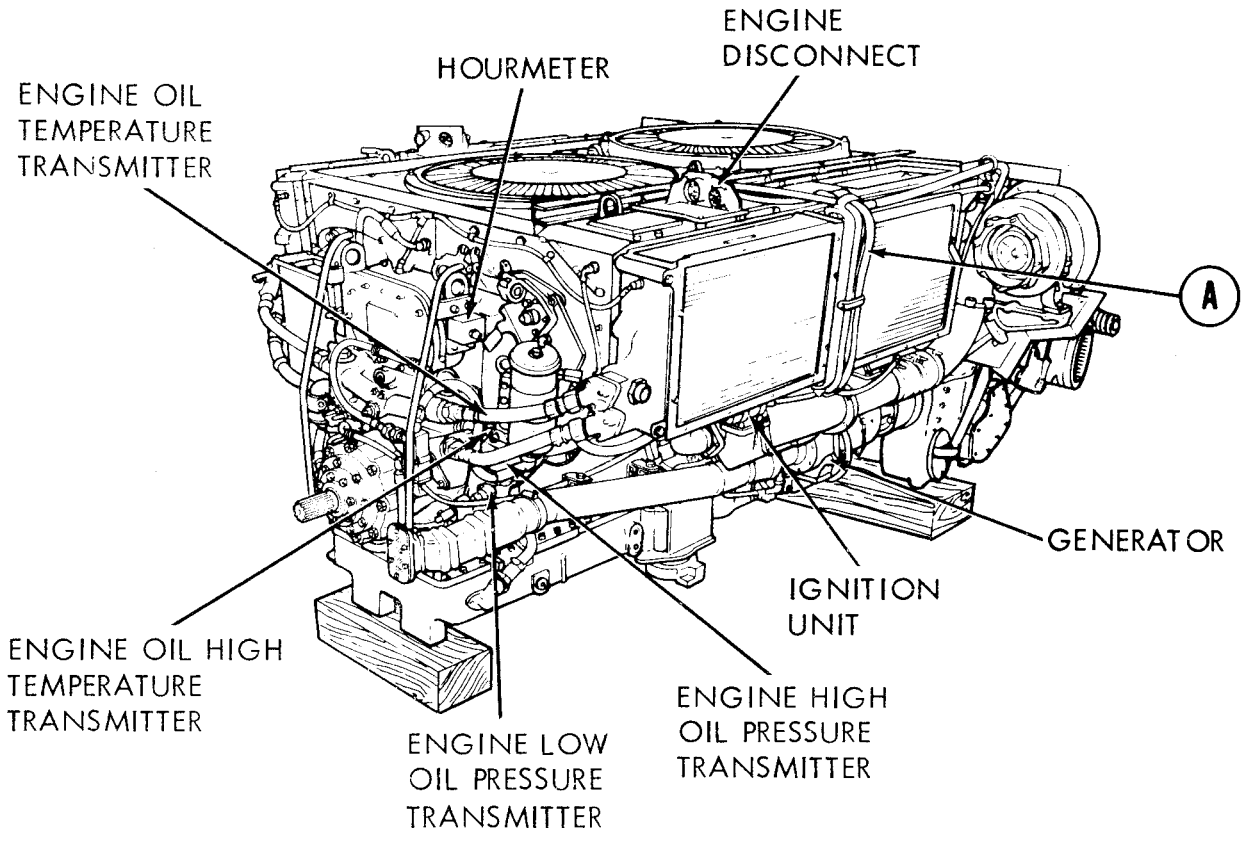
Go on to Sheet 7

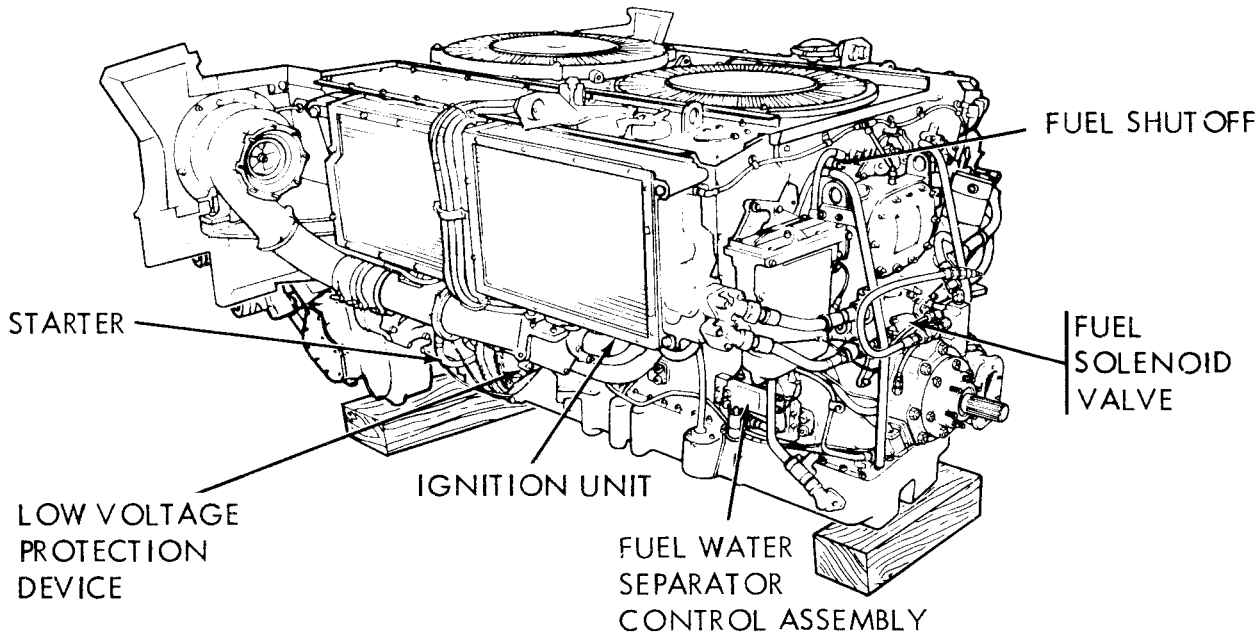
TA249232

ENGINE WIRING HARNESS REPLACEMENT (Sheet 7 of 12)

INSTALLATION:

1. Place engine wiring harness (A) in position on engine.

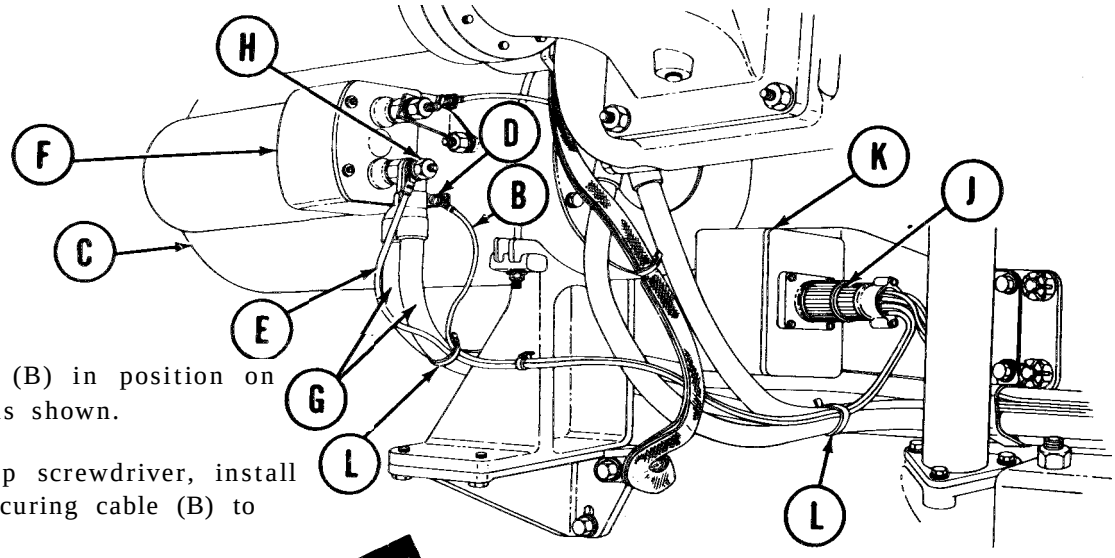




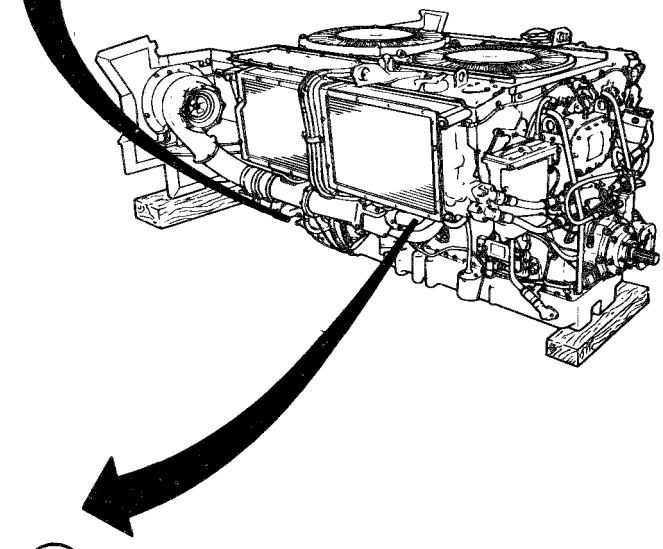
Go on to Sheet 8

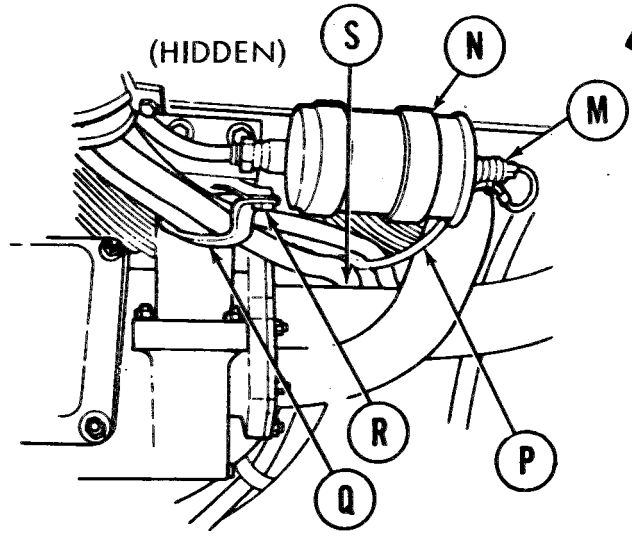
TA249233

ENGINE WIRING HARNESS REPLACEMENT (Sheet 8 of 12)



2. Place cable (B) in position on starter (C) as shown.
3. Using flat-tip screwdriver, install screw (D) securing cable (B) to starter (C).
4. Place cable (E) in position on starter solenoid (F).
5. Place two other cables (G) on starter solenoid (F).
6. Using 3/4 inch wrench, install nut and lockwasher (H).
7. Using spanner wrench, connect connector (J) to low voltage protection device (K).
8. Install two new cable ties (L) around cables (B, E and G).





9. Place connector (M) to ignition unit (N).
10. Place cable (P) and clamp (Q) in position.
11. Using 7/16 inch socket, install two screws and lockwashers (R) securing cable (P) and clamp (Q).
12. Place clamp (S) (hidden) in position over cables.
13. Using 1/2 inch socket, install nut securing cables and clamp (S).

Go on to Sheet 9

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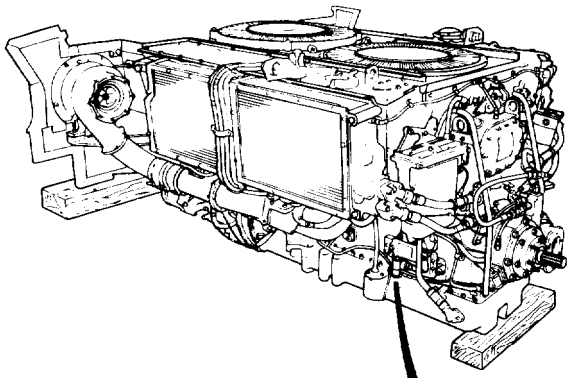
ENGINE WIRING HARNESS REPLACEMENT (Sheet 9 of 12)

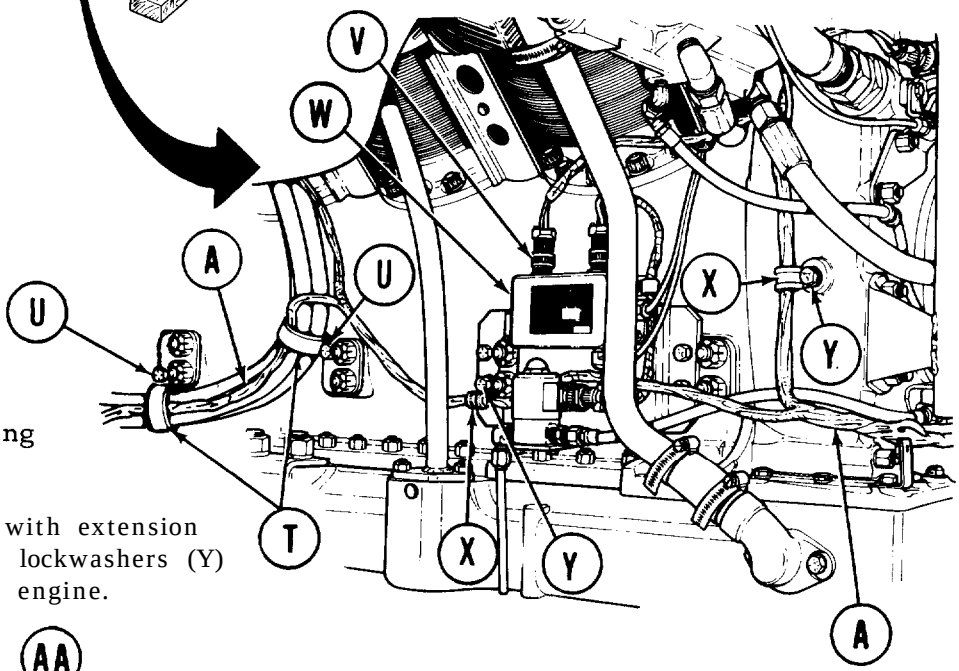


14. Place wiring harness (A) in position.

15. Place two clamps (T) in position around wiring harness (A).

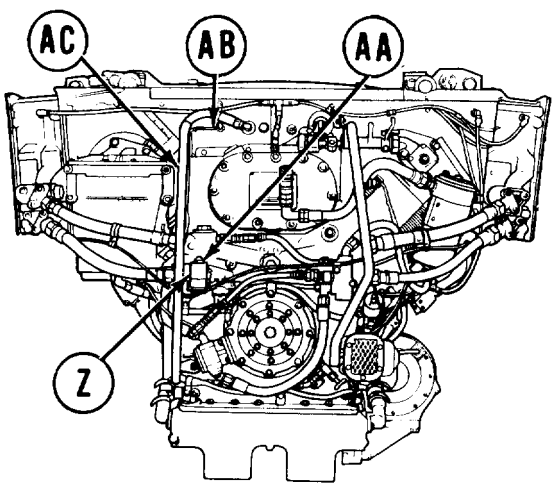
16. Using 1/2 inch socket with extension, install two screws and lockwashers (U) securing two clamps (T) to engine.

17. Using slip joint pliers, install connector (V) to fuel-water separator control (W).



18. Place two clamps (X) in position around wiring harness (A).

19. Using 1/2 inch socket with extension install two screws and lockwashers (Y) securing clamps (X) to engine.



20. Using slip joint pliers, install connector (Z) to fuel solenoid valve (AA).

21. Using 7/8 inch wrench install fuel shutoff lead (AB) to front of engine.

22. Place clamp (AC) (hidden) in position on cable.

Using 9/16 inch wrench, install nut securing cable and clamp (AC).

Go on to Sheet 10

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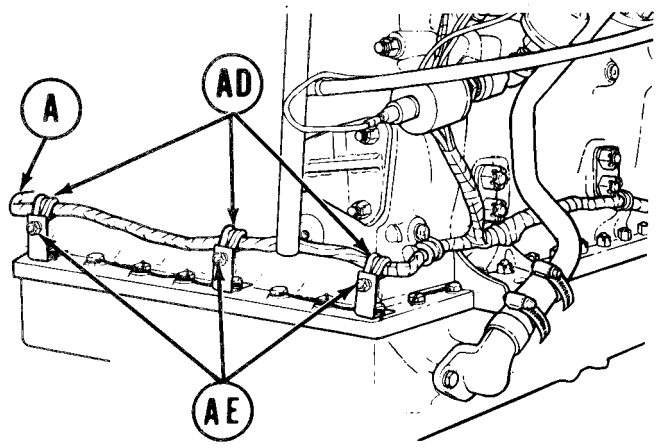
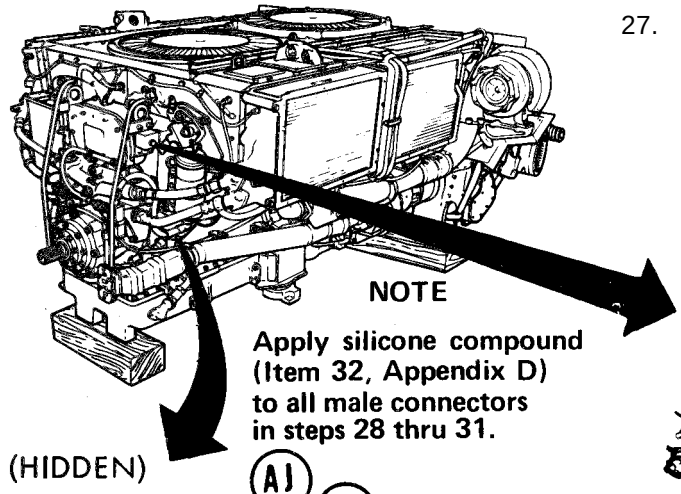
ENGINE WIRING HARNESS REPLACEMENT (Sheet 10 of 72)

24. Place wiring harness (A) in position along bottom of engine.

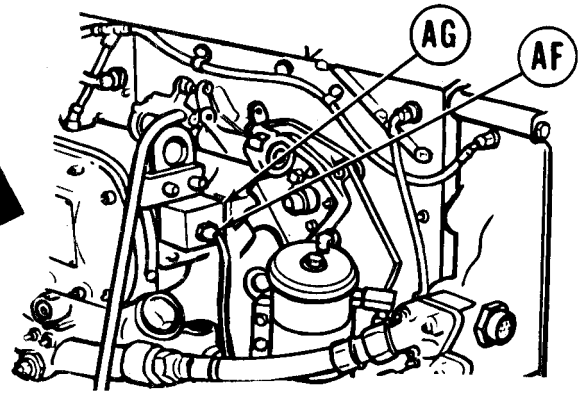
25. Place three clamps (AD) in position around wiring harness (A).

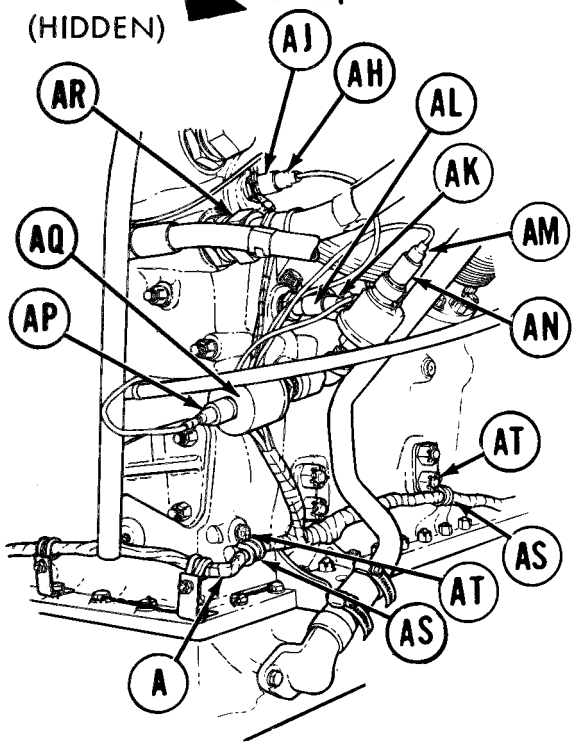
26. Using 7/16 inch socket and wrench, install three screws, lockwashers and nuts (AE) securing three clamps (AD) and wiring harness to engine





27. Using slip joint pliers, install connector (AF) to hour meter (AG).





28. Connect electrical lead (AH) (CKT 33) to engine oil temperature transmitter (AJ).

29. Connect electrical lead (AK) (CKT 509L) to engine oil high temperature thermostatic switch (AL).

30. Connect electrical lead (AM) (CKT 36) to engine high oil pressure transmitter (AN).

31. Connect electrical lead (AP) (CKT 509L) to engine low oil pressure switch (AQ).

32. Place clamp (AR) (hidden) in position on wiring harness (A).

33. Using 1/2 inch socket with extension, install nut securing wiring harness (A) and clamp (AR).

34. Place two clamps (AS) in position on wiring harness (A).

35. Using 1/2 inch socket, install two screws and lockwashers (AT).

Go **on** to Sheet 11

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ENGINE WIRING HARNESS REPLACEMENT (Sheet 11 of 12)

36. Place wiring harness (A) in position

37. Place clamp (AU) and clamp (AV) which is hidden, in position around wiring harness (A).

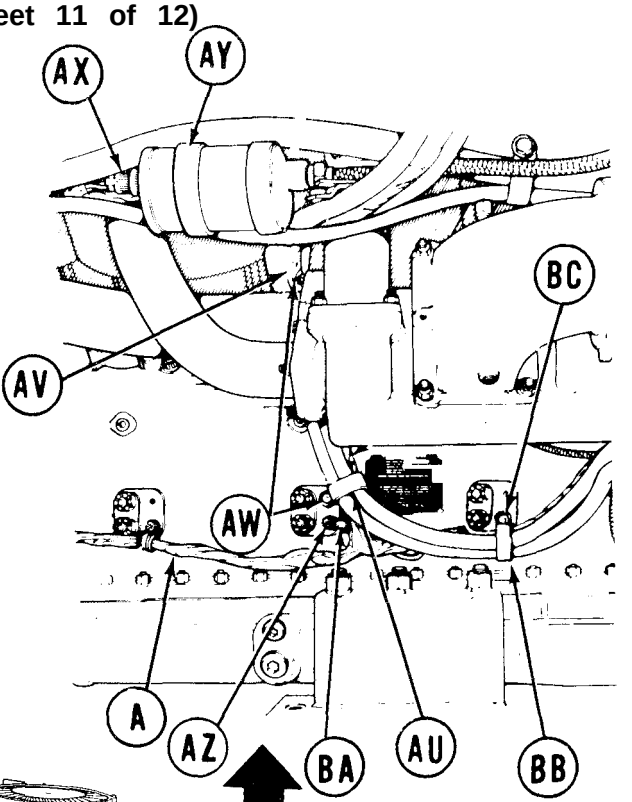
38. Using 1/2 inch socket with extension, install two screws and lockwashers (AW) securing two clamps (AU and AV).

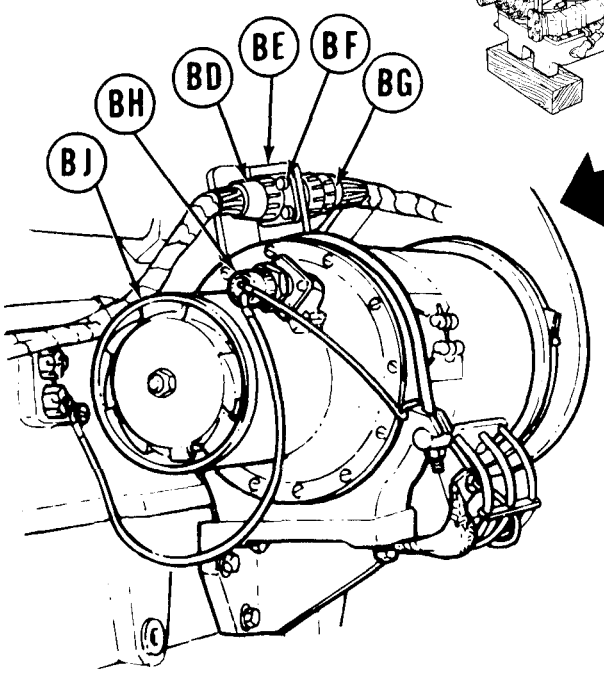
39. Using slip joint pliers, install connector (AX) to ignition unit (AY).

40. Using 1/2 inch socket with extension, install screw and lockwasher (AZ) securing ground strap (BA) to engine.

41. Place clamp (BB) in position around wiring harness (A).

42. Using 1/2 inch socket with extension, install screw and lockwasher (BC) securing clamp (BB).





43. Position connector (BD) in bracket (BE).

44. Using cross-tip screwdriver and adjustable wrench, install four screws, lockwashers, and nuts (BF).

45.

46.

Go on to Sheet 12

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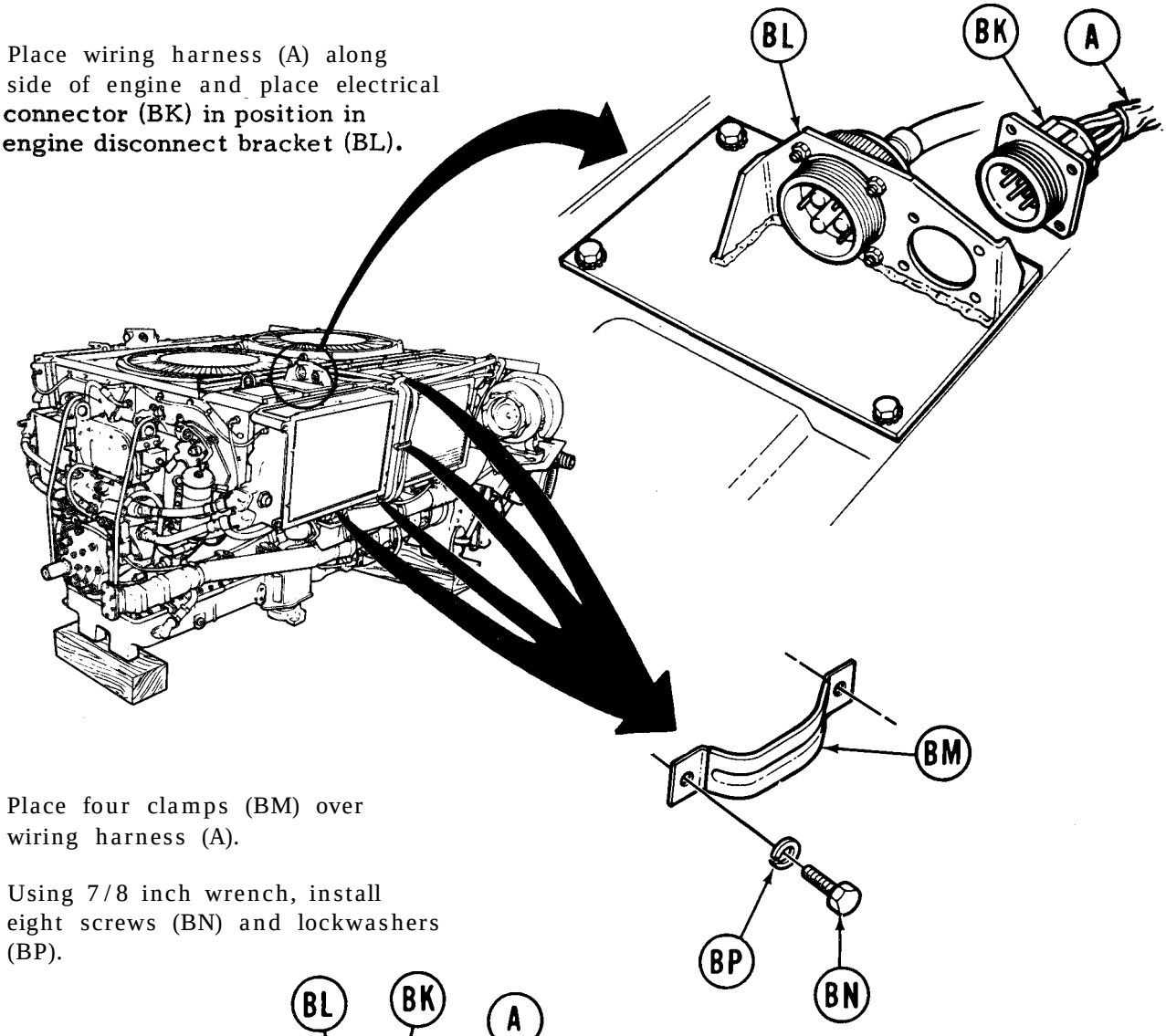
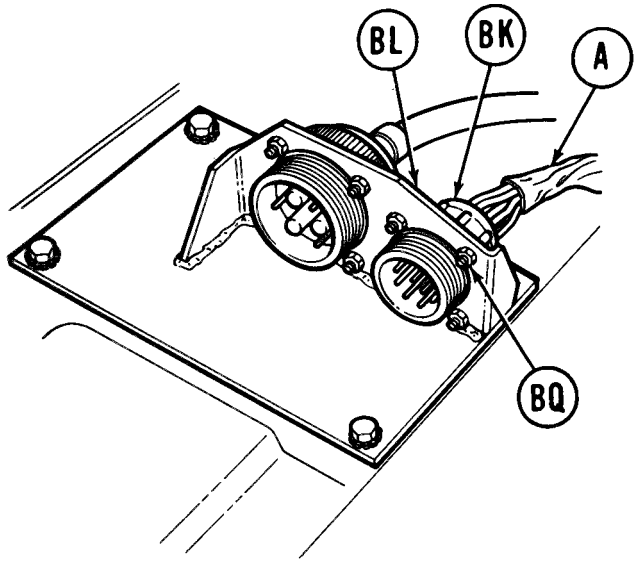
ENGINE WIRING HARNESS REPLACEMENT (Sheet 12 of 12)

47. Place wiring harness (A) along side of engine and place electrical connector (BK) in position in engine disconnect bracket (BL).



48. Place four clamps (BM) over wiring harness (A).

49. Using 7/8 inch wrench, install eight screws (BN) and lockwashers (BP).



50. Make sure wiring harness (A) and electrical connector (BK) are in position in engine disconnect mounting bracket (BL).

51. Using screwdriver and 3/8 inch wrench, install four screws, lockwashers and nuts (BQ).

52. Install powerplant (page 5-14).

End of Task

TA249238

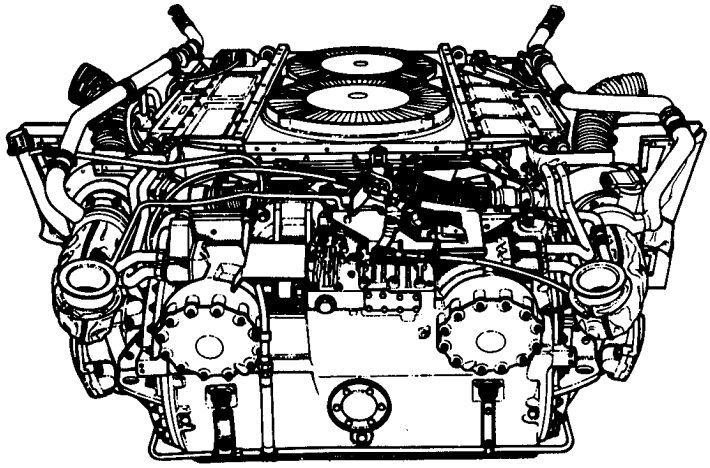
ENGINE WIRING HARNESS (DUST DETECTOR) REPLACEMENT (Sheet 1 of 8)

PROCEDURE INDEX

TOOLS: 1/2 in. combination box and open end wrench
7/16 in. combination box and open end wrench
1/2 in. socket with 1/2 in. drive
7/16 in. socket with 1/2 in. drive.
Ratchet with 1/2 in. drive
5 in. extension with 1/2 in. drive
Slip joint pliers, with plastic jaw inserts

SUPPLIES: Lockwashers (2 required)
Self-locking nuts (2 required)
Silicone compound (Item 32, Appendix D)

PRELIMINARY PROCEDURES: Disconnect battery ground straps (page 10-268)
Remove top deck (page 16-21)
Remove transmission shroud (page 9-2)
Remove engine shroud (page 9-30)



POWERPACK REMOVED FOR CLARITY

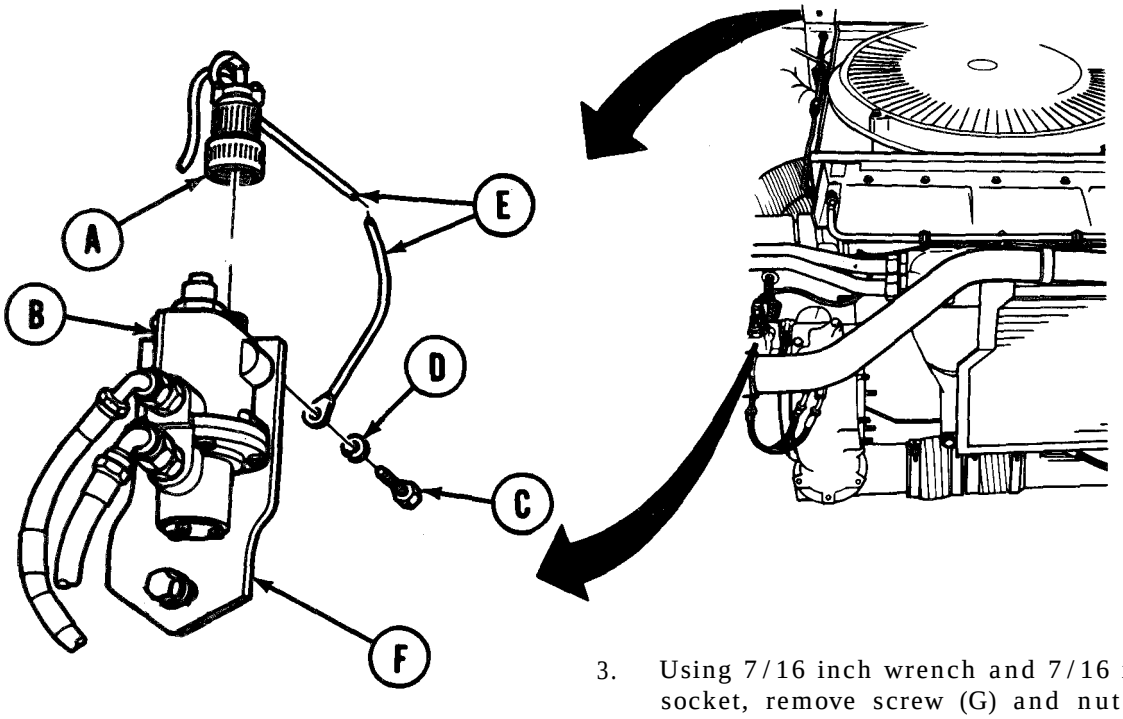
Go on to Sheet 2

ENGINE WIRING HARNESS (DUST DETECTOR) REPLACEMENT (Sheet 2 of 8)

REMOVAL:

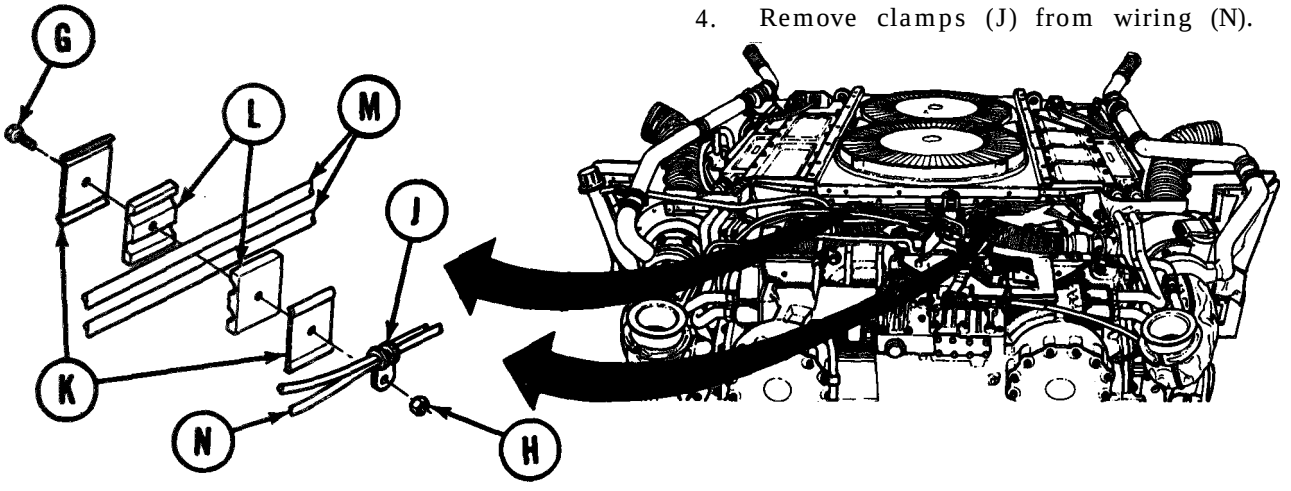
1. Disconnect connectors (A) from right and left bank pressure switches (B).

2. Using 7/16 inch socket, remove screws (C) and lockwashers (D) securing ground leads (E) to brackets (F).



3. Using 7/16 inch wrench and 7/16 inch socket, remove screw (G) and nut (H) securing clamps (J), retaining strap (K), and pads (L) to tube assemblies (M).

4. Remove clamps (J) from wiring (N).



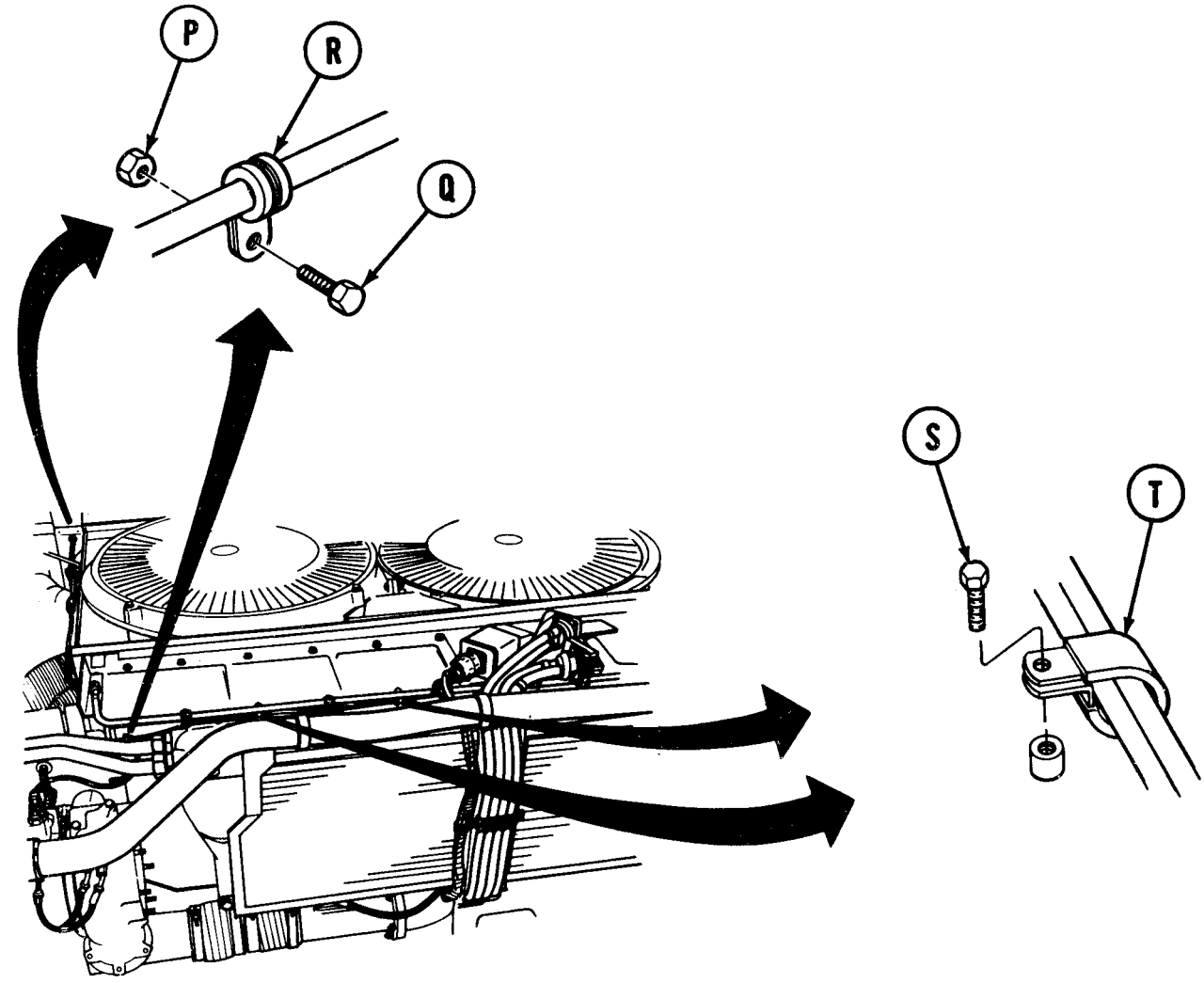
Go on to Sheet 3

ENGINE WIRING HARNESS (DUST DETECTOR) REPLACEMENT (Sheet 3 of 8)

5. Using 1/2 inch wrench to hold nut (P), use 1/2 inch socket and remove screw (Q) securing clamp (R) (two places). Throw nuts away.

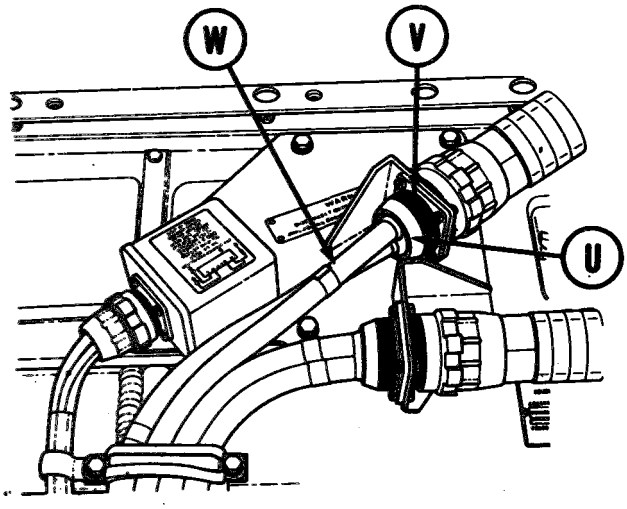
6. Remove clamps (R) from wiring harness.

7. Using 1/2 inch socket, remove screws (S) securing clamps (T) (two places). Remove clamps (T) from wiring harness.

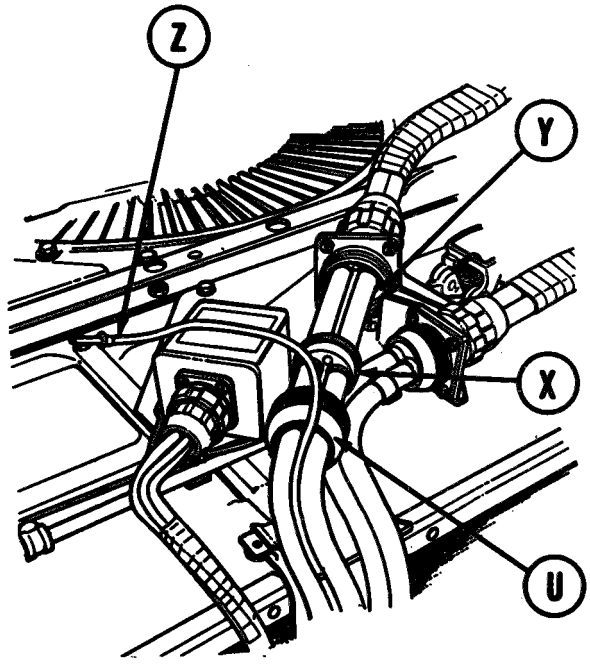


Go on to Sheet 4

ENGINE WIRING HARNESS (DUST DETECTOR) REPLACEMENT (Sheet 4 of 8)



8. Using slip joint pliers, unscrew retaining nut (U) from shell (V). Slide retaining nut (U) back along cable assembly (W).



9. **Pull bushing (X) back from insert (Y).**

10. **Remove wiring lead 510 (Z) from position "C" of insert (Y). Pull wiring lead 510 (Z) from bushing (X) and retainer nut (U).**

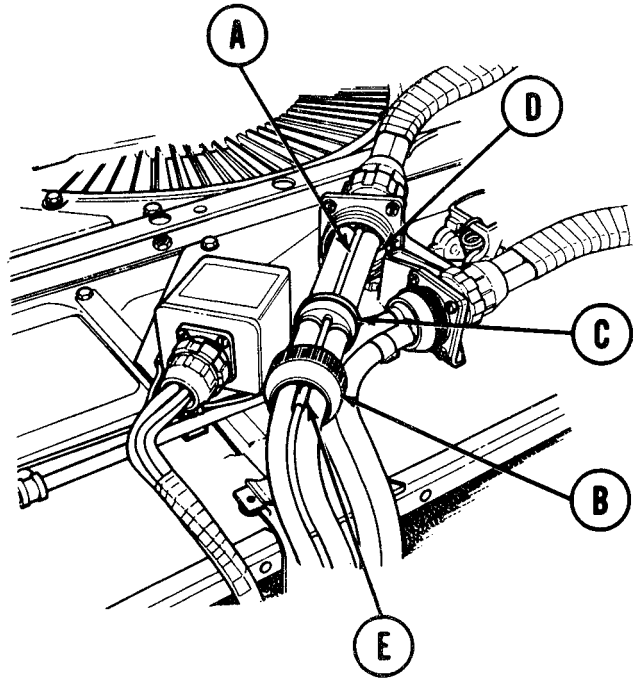
11. **Remove dust detector wiring harness from engine.**

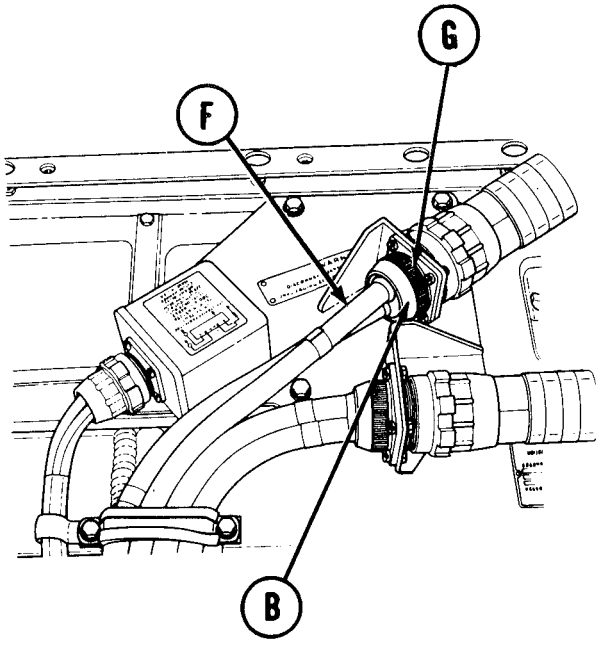
Go on to Sheet 5

ENGINE WIRING HARNESS (DUST DETECTOR) REPLACEMENT (Sheet 5 of 8)

INSTALLATION:

1. Apply silicone compound (Item 32, Appendix D) to wiring lead 510 (A) and thread lead through retainer nut (B) and bushing (C).
2. Insert pin of wiring lead 510 (A) in position "C" of insert (D).
3. Slide bushing (C) against insert (D).
4. Slide sleeving (E) up against bushing (C).



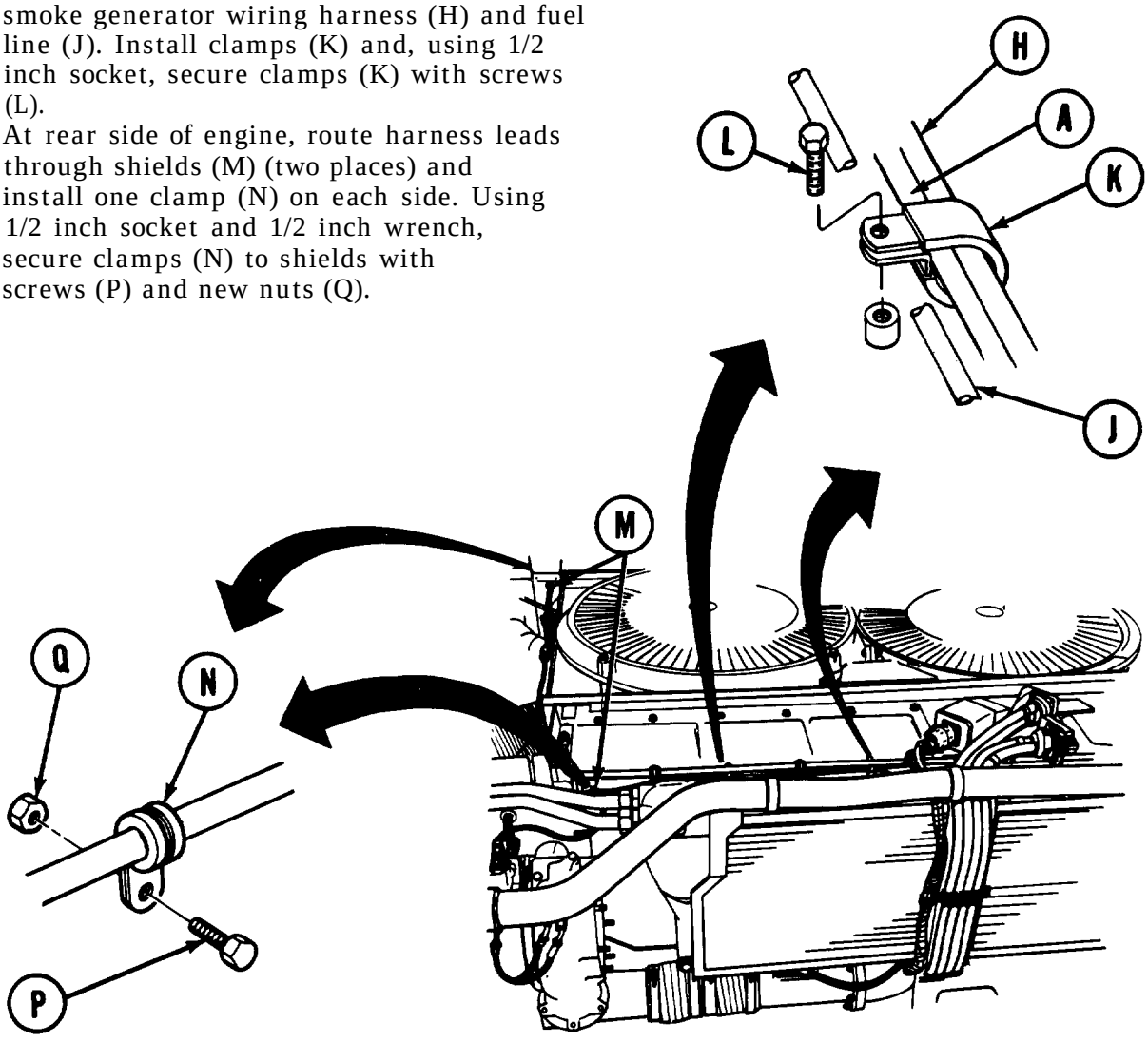


5. Slide retaining nut (B) up cable assembly (F) and connect to shell (G).
6. Using slip joint pliers, tighten retaining nut (B) onto shell (G).

Go on to Sheet 6

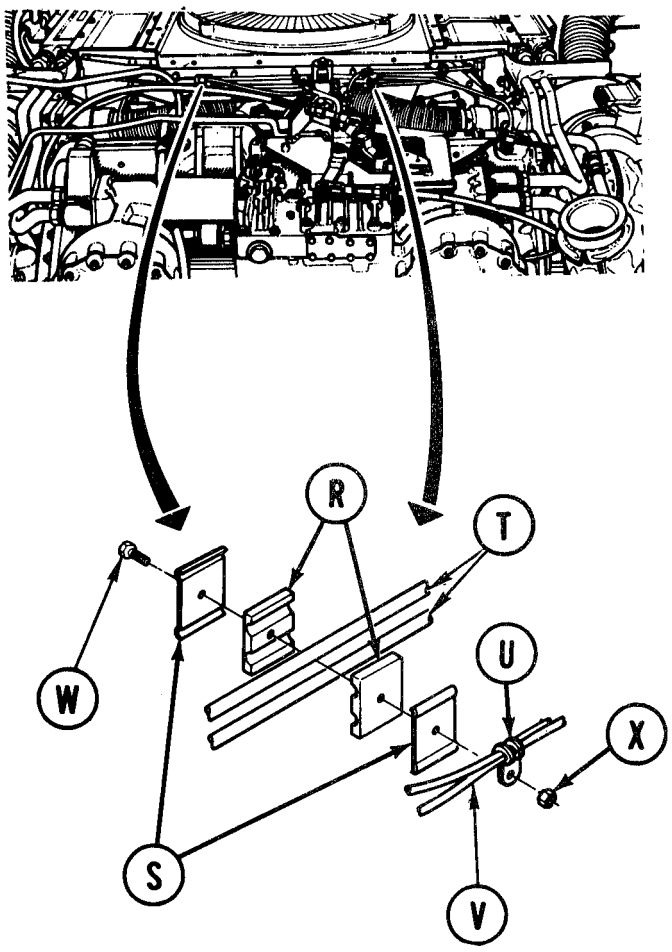
ENGINE WIRING HARNESS (DUST DETECTOR) REPLACEMENT (Sheet 6 of 8)

7. At two locations along top left side of engine, route wiring lead 510 (A) along smoke generator wiring harness (H) and fuel line (J). Install clamps (K) and, using 1/2 inch socket, secure clamps (K) with screws (L).
8. At rear side of engine, route harness leads through shields (M) (two places) and install one clamp (N) on each side. Using 1/2 inch socket and 1/2 inch wrench, secure clamps (N) to shields with screws (P) and new nuts (Q).



Go on to Sheet 7

ENGINE WIRING HARNESS (DUST DETECTOR) REPLACEMENT (Sheet 7 of 8)



9. At two locations at rear of engine, assemble pads (R) and retaining straps (S) around tube assemblies **(T).**

10. Install two clamps (U) onto wiring harnesses (V). Pull slack out of wiring harnesses.

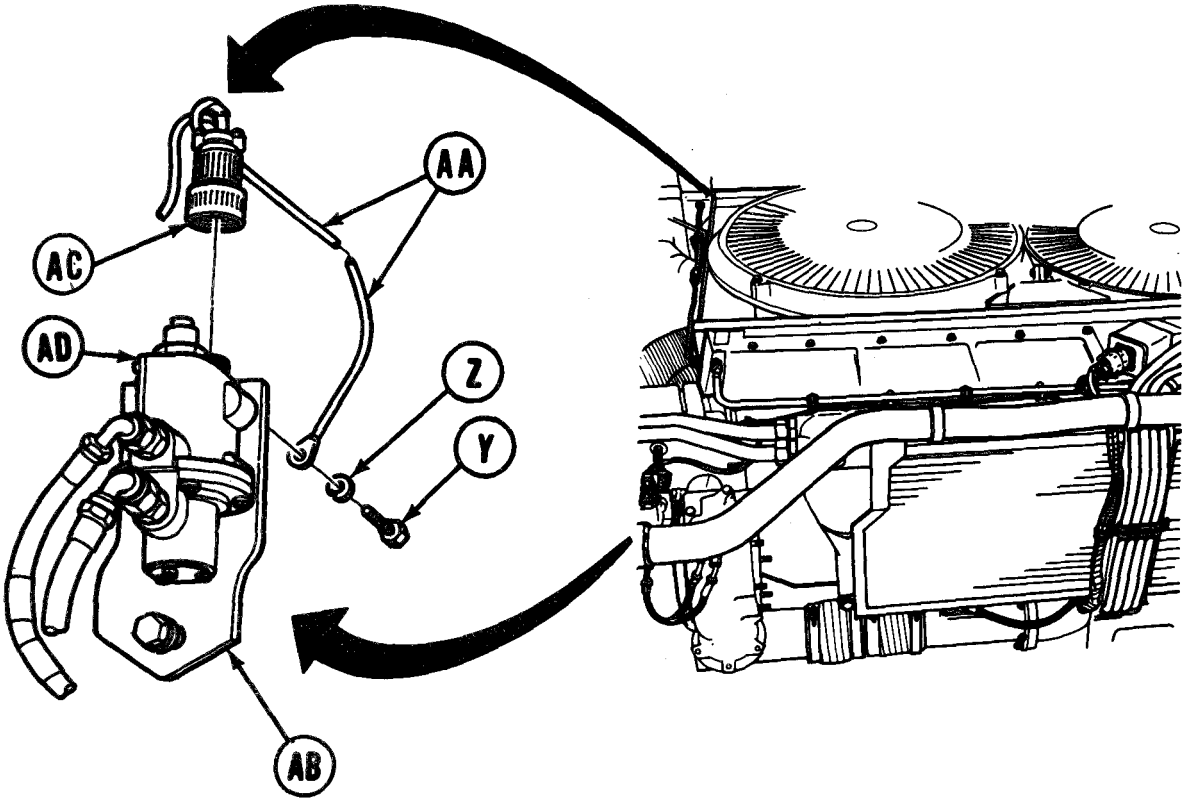
11. Using 7/16 inch wrench and 7/16 inch socket, install screw (W) and new self-locking nut (X) to secure clamps (U), retaining straps (S), and pads (R) to two tube assemblies (T).

Go on to Sheet 8

ENGINE WIRING HARNESS (DUST DETECTOR) REPLACEMENT (Sheet 8 of 8)

12. Using 7/16 inch socket, install screws (Y) and new lockwashers (Z) to secure ground leads (AA) to left and right pressure switch bracket (AB).

13. Connect harness connector (AC) to left and right pressure switches (AD).



14. Connect battery ground straps (page 10-268).

15. Perform dust detector operational test (page 10-298.17).

16. Install engine shroud (page 9-31).

17. Install transmission shroud (page 9-6).

18. Install top deck (page 16-23).

End of Task

DUST DETECTOR HULL INTERMEDIATE LEAD ASSEMBLY REPLACEMENT (Sheet 1 of 4)

PROCEDURE INDEX

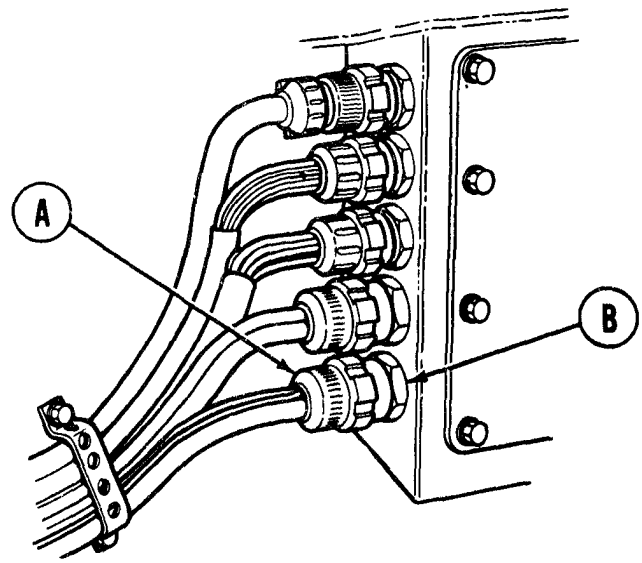
TOOLS: 7/16 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
Pliers, diagonal cutting
Pliers, slip joint

SUPPLIES: Lockwashers (4 required)
Strap, tie wrap (as required)

PRELIMINARY PROCEDURE: Disconnect three battery ground straps (page 10-268)

REMOVAL:

1. Using slip joint pliers, disconnect starter cable (A) at bulkhead connector (B).



Go on to Sheet 2

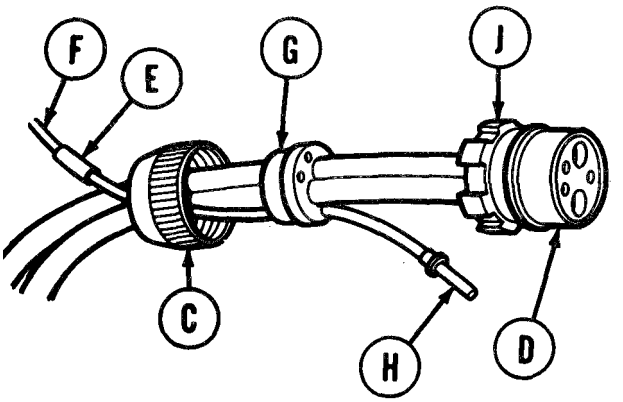
DUST DETECTOR HULL INTERMEDIATE LEAD ASSEMBLY REPLACEMENT (Sheet 2 of 4)

2. Using slip joint pliers, unthread retaining nut (C) from shell (D). Slide retaining nut (C) back along cable.

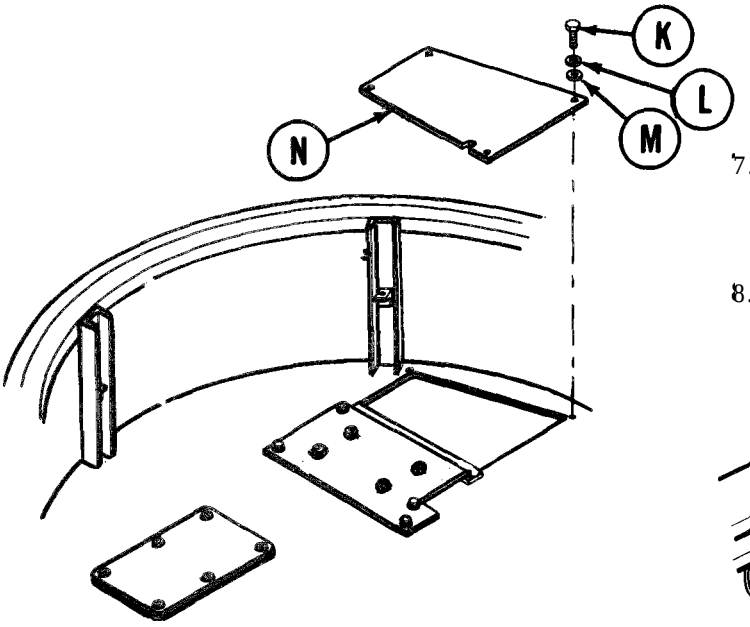
3. Slide sleeving (E) back along lead assembly (F).

4. Slide bushing (G) back along cable.

5. Remove pin (H) from position "C" of insert (J).

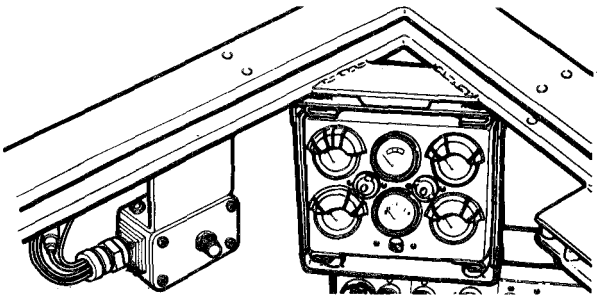


6. Pull lead assembly (F) back through bushing (G) and retaining nut (C).



7. Using socket, remove four screws (K), lockwashers (L), and flat washers (M) securing plate (N) to hull floor.

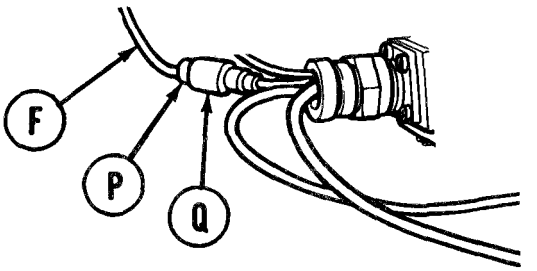
8. Remove plate (N) from hull floor.



9. Using diagonal cutting pliers, cut tie wraps securing lead assembly (F) along smoke lead.

10. Disconect lead assembly connector (P) from short lead (Q) on dust detector warning light wiring harness.

11. Remove hull intermediate lead assembly (F) from vehicle.

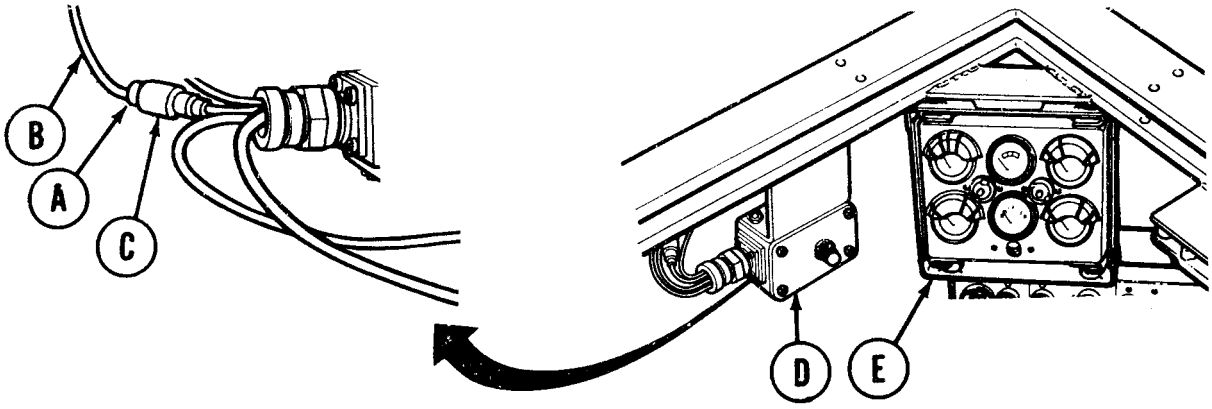


Go on to Sheet 3

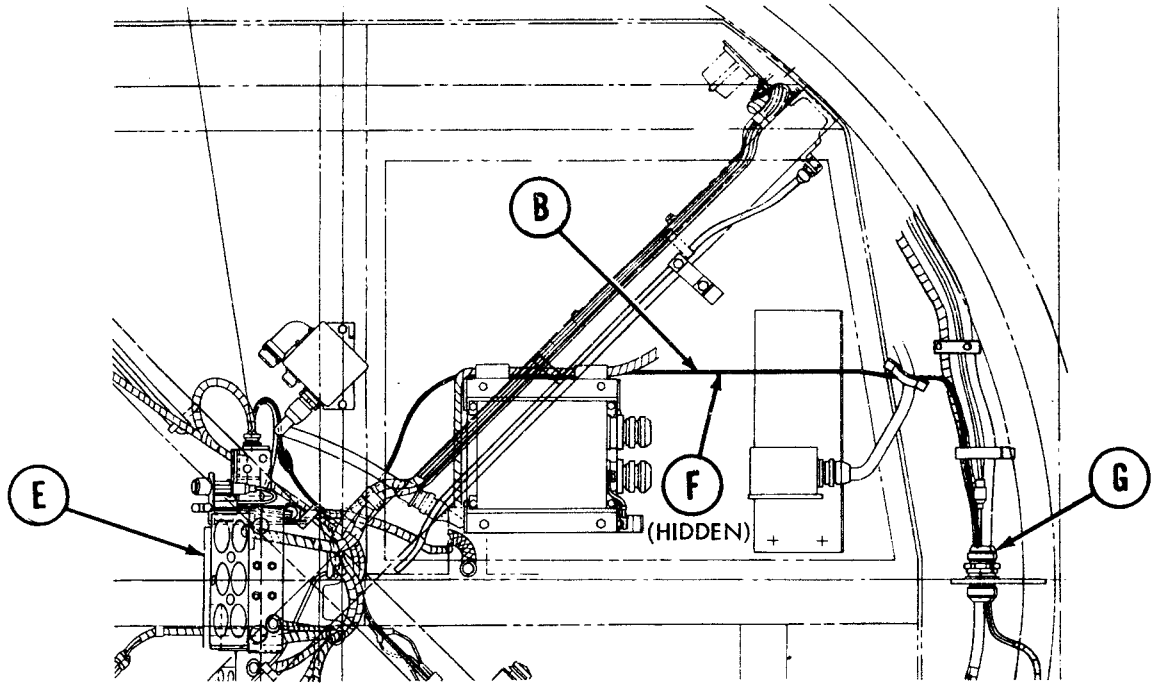
DUST DETECTOR HULL INTERMEDIATE LEAD ASSEMBLY REPLACEMENT (Sheet 3 of 4)

INSTALLATION:

1. Connect connector (A) of replacement hull intermediate lead assembly (B) to short lead (C) of dust detector warning light harness assembly.



2. Route replacement hull intermediate lead assembly (B) beneath cable retaining straps from dust detector warning light box (D) to behind instrument panel cluster assembly (E) and along smoke lead (F) under floor up to starter cable connector (G).



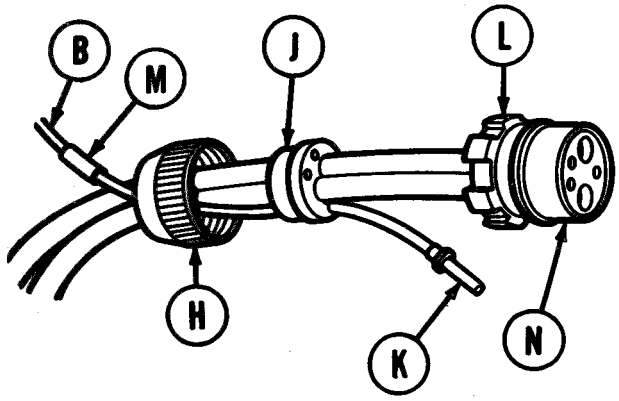
Go on to Sheet 4

DUST DETECTOR HULL INTERMEDIATE LEAD ASSEMBLY REPLACEMENT (Sheet 4 of 4)

3. Insert lead assembly (B) through retaining nut (H) and bushing (J).

4. Install pin (K) into position “C” of insert (L).

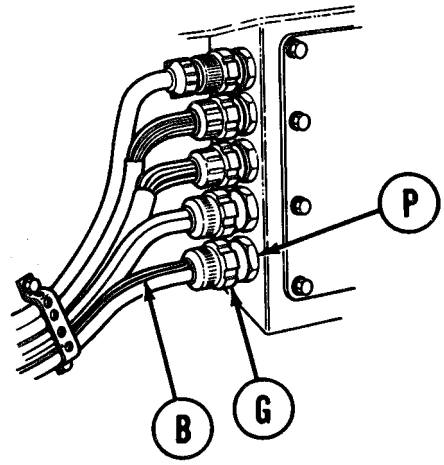
5. Slide bushing (J) against insert (L).



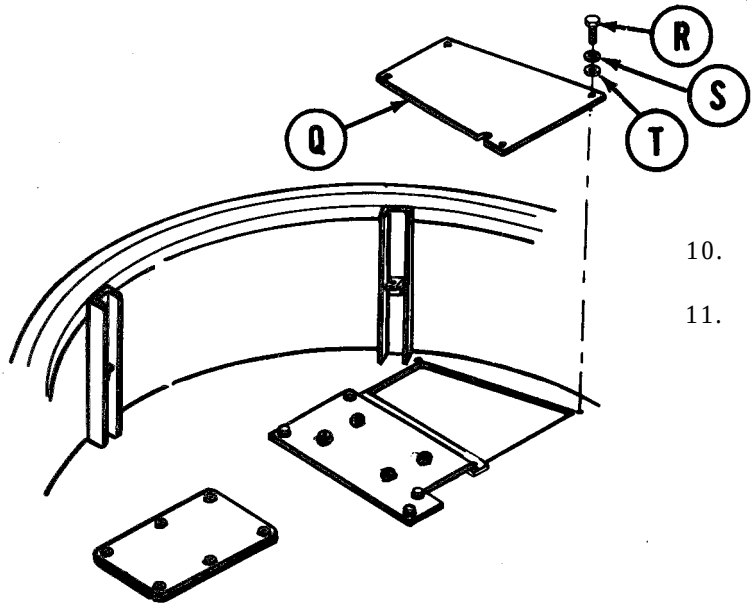
6. Slide sleeving (M) against bushing (J).

7. Install retaining nut (H) on shell (N).

8. Wing slip joint pliers, connect starter cable connector (G) to bulkhead connector (P).



9. Secure lead assembly (B) to smoke lead with new tie wraps, as required.



10. Place plate (Q) in position on hull floor.

11. Using socket, install four screws (R), new lockwashers (S), and flat washers (T) securing plate (Q) to hull floor.

End of Task

DUST DETECTOR WARNING LIGHT HARNESS ASSEMBLY REPLACEMENT (Sheet 1 of 2)

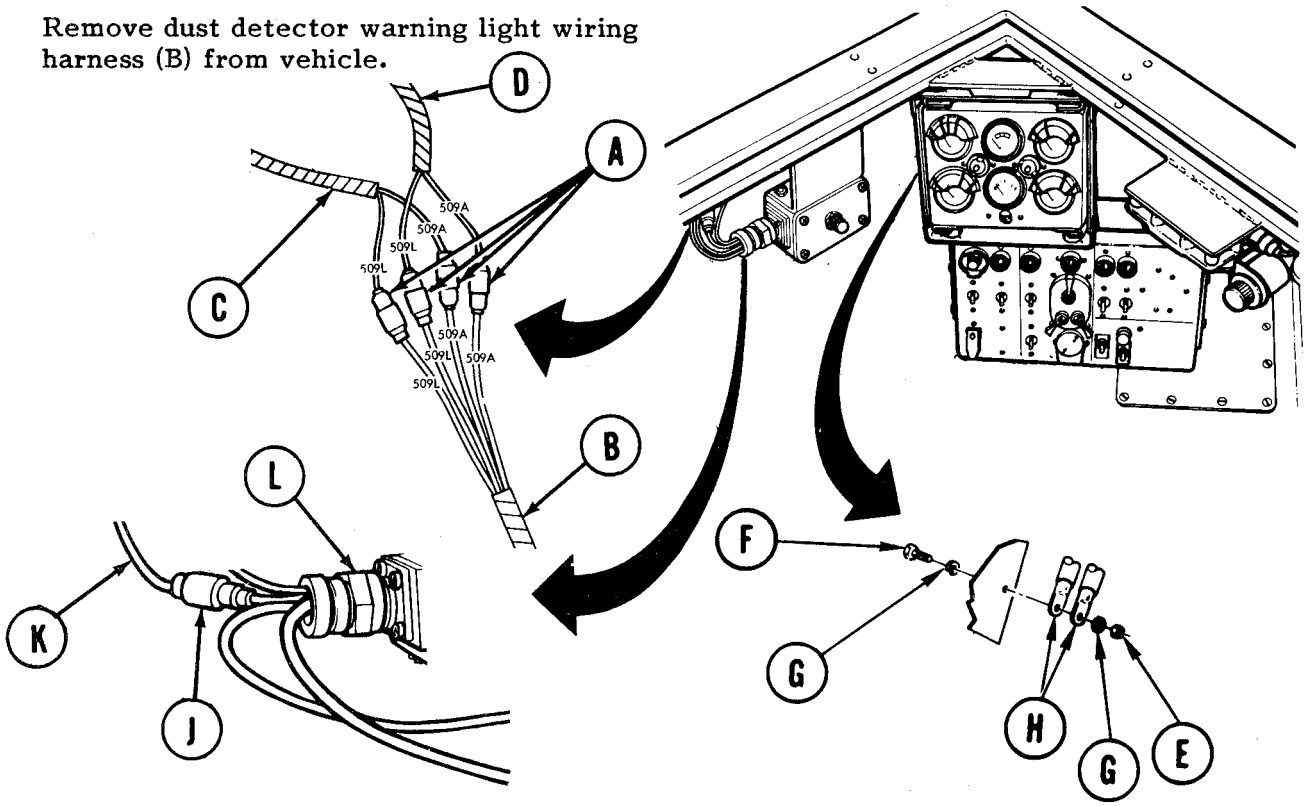
TOOLS: 7/16 in. combination box and open end wrench (2 required)
Pliers, slip joint, plastic jaw insert

SUPPLIES: Lockwasher (2 required)

PRELIMINARY PROCEDURE: Disconnect three battery ground straps (page 10-268)

REMOVAL:

1. Disconnect four lead connectors (A) connecting dust detector warning light wiring harness (B) to front master harness assembly (C) and powerplant warning light harness (D).
2. Using one 7/16 inch wrench to hold nut (E), use other 7/16 inch wrench to remove screw (F), lockwashers (G), and nut (E) securing ground leads (H) along side of gage indicator panel.
3. Disconnect dust detector warning light harness short lead (J) from hull intermediate lead assembly (K).
4. Using pliers, disconnect harness connector (L) from dust detector warning light box (M).
5. **Remove dust detector warning light wiring harness (B) from vehicle.**



Go on to Sheet 2

DUST DETECTOR WARNING LIGHT HARNESS ASSEMBLY REPLACEMENT (Sheet 2 of 2)

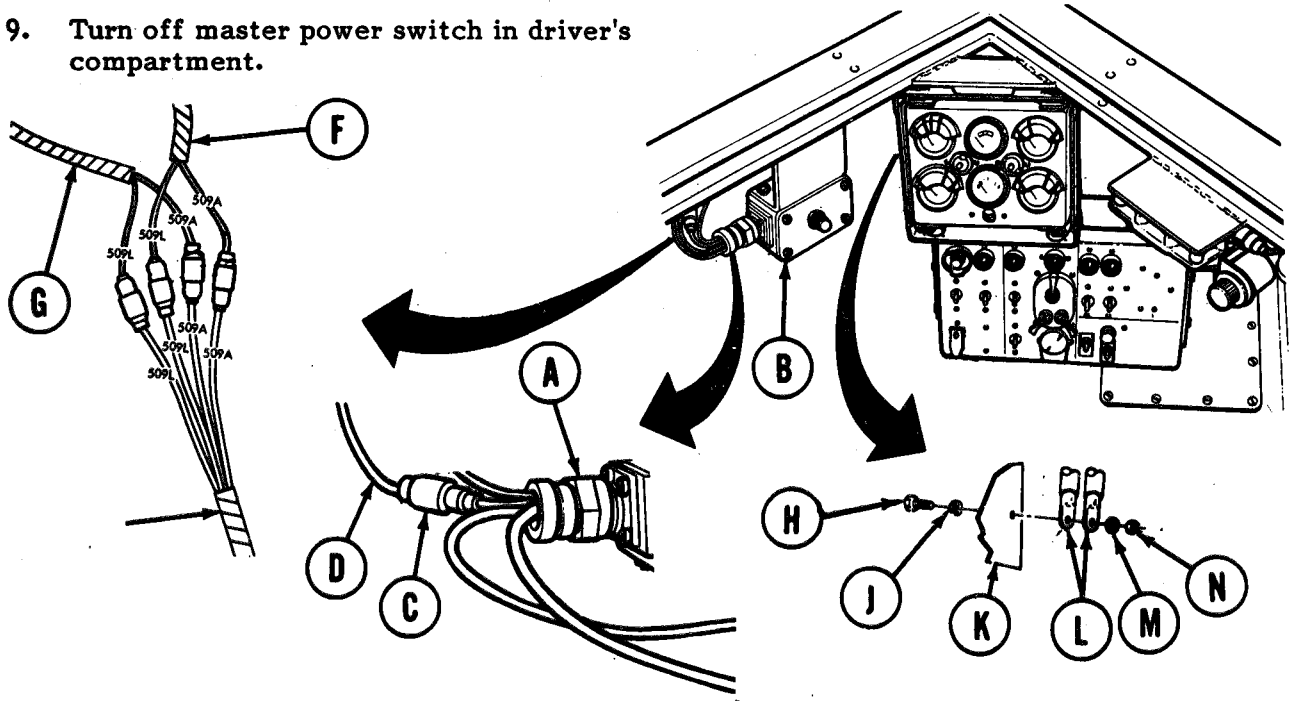
INSTALLATION:

1. Connect harness connector (A) to dust detector warning light box (B).
2. Connect dust detector warning light short lead (C) to hull intermediate lead assembly (D).
3. Connect lead connectors 509A and 509L of dust detector warning light wiring harness (E) to lead connectors 509A and 509L of powerplant warning light harness (F) and front master harness assembly (G) (four places).
4. Install screw (H) with lockwasher (J) through bracket (K).
5. Install ground leads (L), washer (M), and nut (N) onto screw (H). Using one 7/16 inch wrench to hold screw (H), use another 7/16 inch wrench to tighten nut (N).
6. Connect three battery ground straps (page 10-268).
7. Turn on master power in driver's compartment.
8. Press to test lamp on dust detector warning light box (B).

   A. If light comes on, proceed with task.

   B. If light failed to come on, troubleshoot.

9. Turn off master power switch in driver's compartment.



End of Task

DUST DETECTOR WARNING LIGHT BOX ASSEMBLY AND MOUNTING BRACKET REPLACEMENT (Sheet 1 of 2)

TOOLS: Pliers, slip joint, plastic jaw insert
7/16 in. combination box and open end wrench (2 required)

SUPPLIES: Lockwasher (4 required)

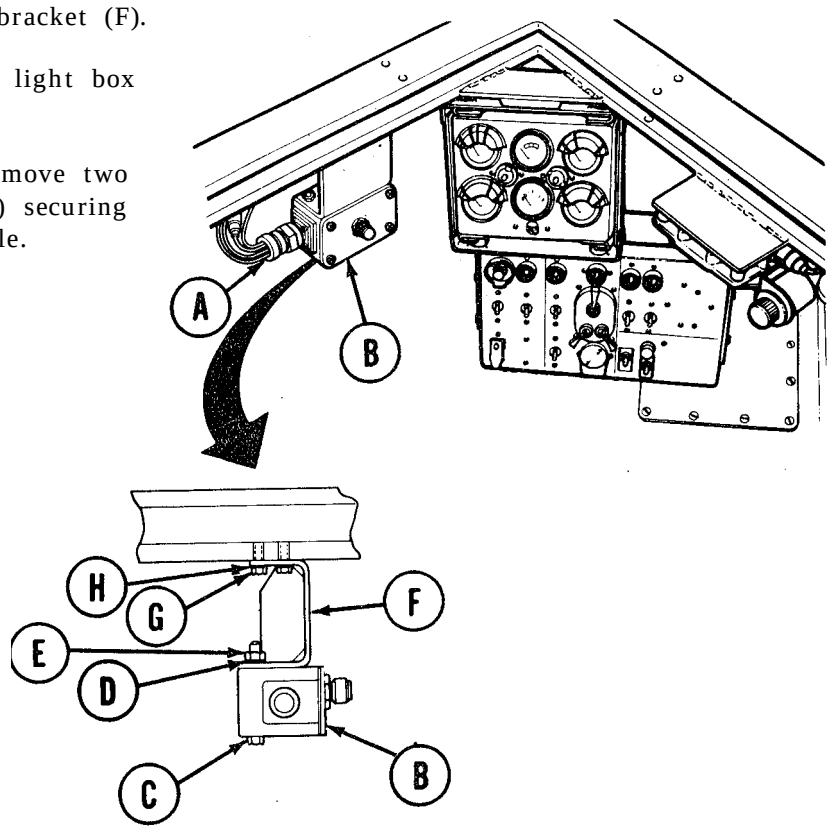
REMOVAL:

1. Using pliers, disconnect harness connector (A) from dust detector warning light box assembly (B).

2. Using wrenches, remove two screws (C), lockwashers (D), and nuts (E) securing dust detector warning light box assembly (B) to mounting bracket (F).

3. Remove dust detector warning light box assembly (B).

4. If necessary, use wrench to remove two screws (G) and lockwashers (H) securing mounting bracket (F) to vehicle.



Go on to Sheet 2

DUST DETECTOR WARNING LIGHT BOX ASSEMBLY AND MOUNTING BRACKET REPLACEMENT (Sheet 2 of 2)

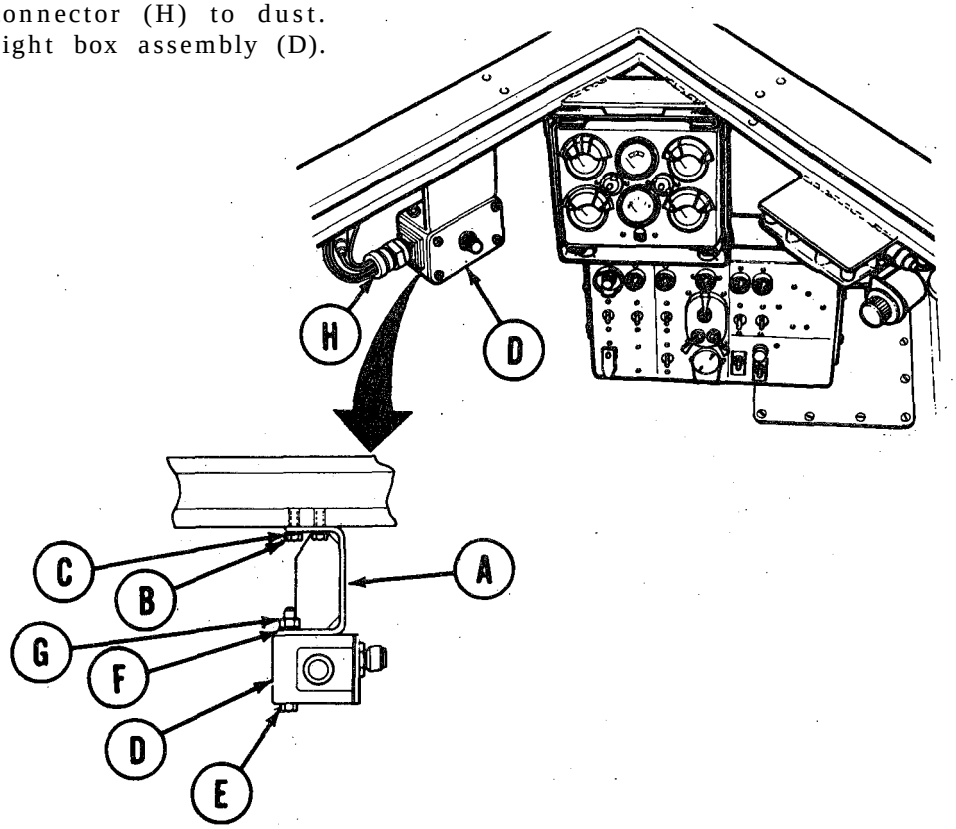
INSTALLATION:

1. If mounting bracket (A) was removed, position it to vehicle support. Using wrench, install two screws (B) and lockwashers (C) to secure mounting bracket.

2. Position dust detector warning light box assembly (D) to mounting bracket (A).

3. Using wrenches, install two screws (E), lockwashers (F), and nuts (G) to secure dust detector warning light box assembly (D).

4. Connect harness connector (H) to dust. detector warning light box assembly (D).



End of Task

DUST DETECTOR OPERATIONAL TEST (Sheet 1 of 3)

TOOLS: 1/2 in. combination box and open end wrench

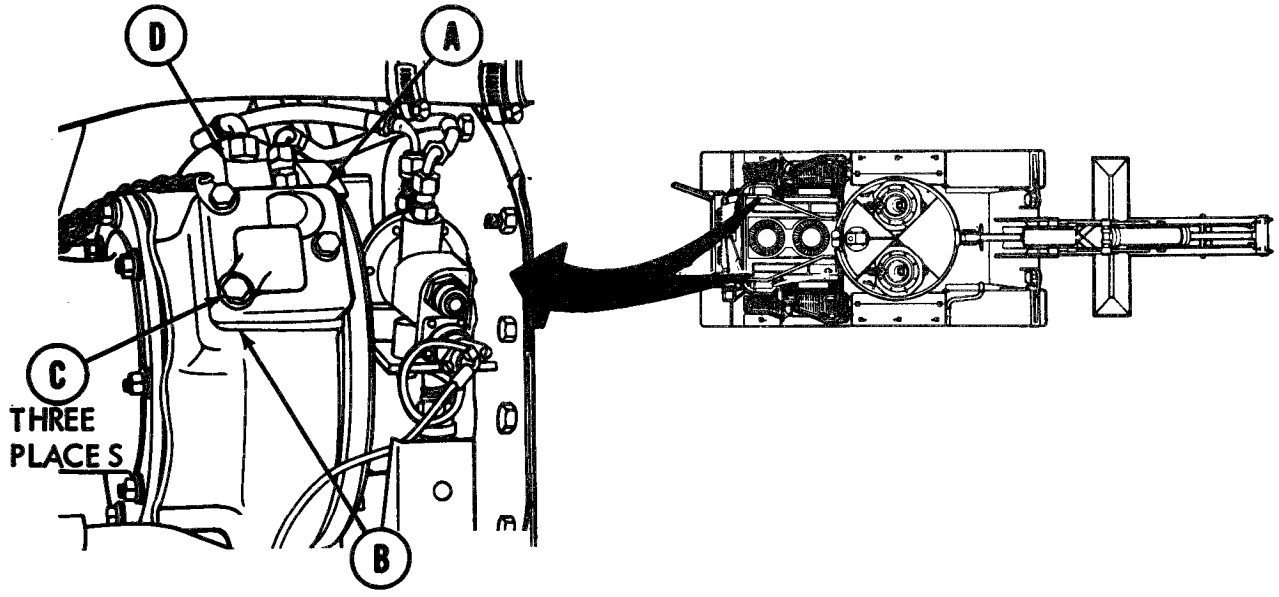
SPECIAL TOOLS: Ground hop kit (Item 31, Chapter 3, Section I) if powerplant is out of tank

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Open top deck grille doors (TM 5-5420-202-10)

NOTE

- **Operational test may be performed with powerplant out of vehicle if ground hop kit has starter cable modified to accommodate improved clean air system. If powerplant is out of vehicle, connect ground hop kit according to pocedures on page 5-27.**
- **Operational test is the same for both right and left sides.**



1. Remove dust and dirt from filter strip cover (A) and compressor housing (B).
2. Using wrench, remove three screws (C) securing filter strip cover (A) to compressor housing (B), but do not remove cover (A).
3. Insert 1-inch wide strip of nonporous material (plastic, celluloid, etc.) over filter strip (D).
4. Using wrench, tighten three screws (C).

Go on to Sheet 2

DUST DETECTOR OPERATIONAL TEST (Sheet 2 of 3)

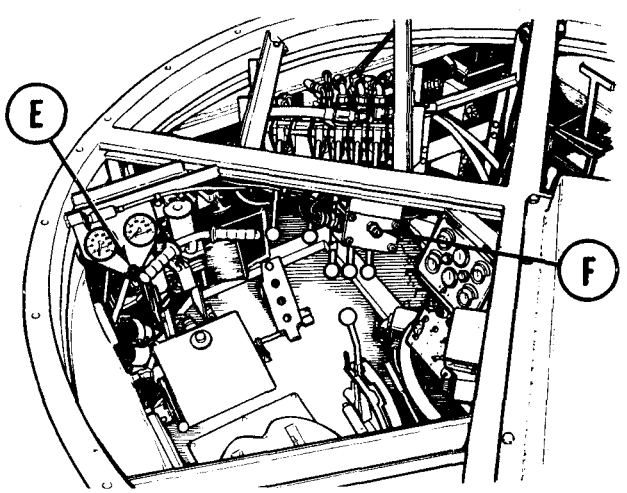
WARNING

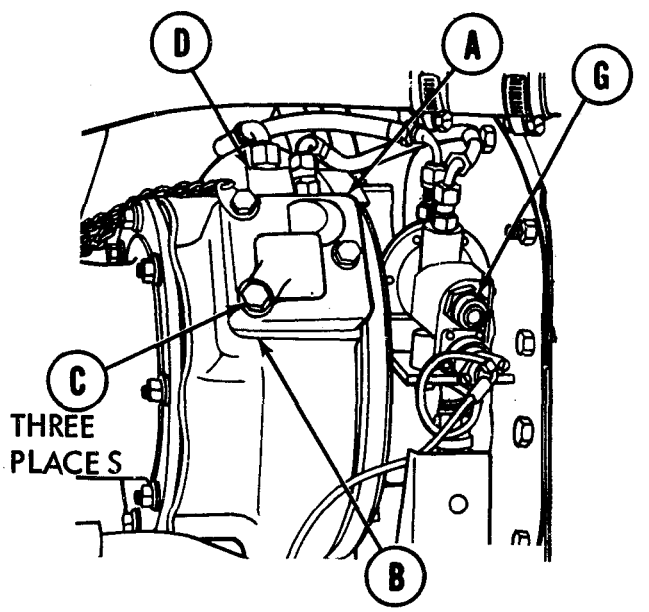
To prevent injury to personnel, make sure area around vehicle is clear of personnel and equipment before performing step 5.

5. Start engine. Apply vehicle brakes. Put transmission lever in high gear. Operate engine at 1800-1900 rpm for no more than 30 seconds. Observe powerplant warning light (E) and dust detector warning light (F).

   A. If powerplant and dust detector warning lamps (E and F) light, system is operational; go to step 6.

   B. If powerplant and dust detector warning lamps (E and F) do not light, check to see if dust detector switch (G) is tripped. A red plunger, visible through plastic cover on switch (G), indicates switch (G) has tripped. If switch (G) is tripped, go to trouble-shooting symptom 16.1. If switch (G) did not trip, repeat step 5 to verify. If switch (G) still does not trip, replace dust detector pressure switch (page 7-130.7).





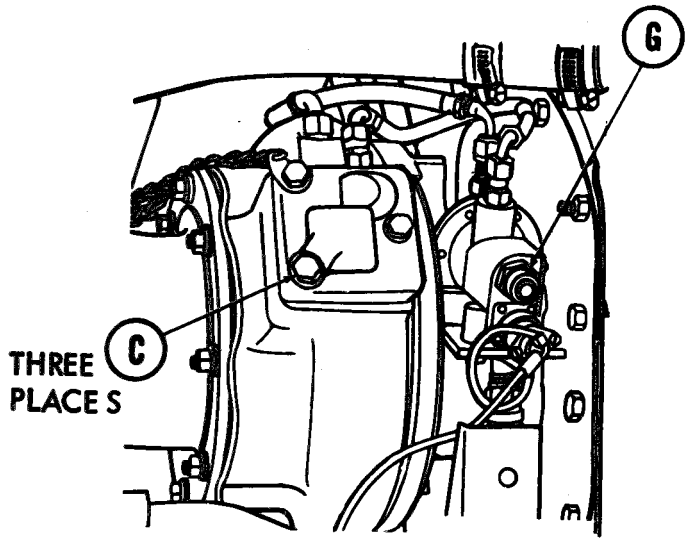
6. Stop engine.

7. Using wrench, loosen three screws (C) securing filter strip cover (A) to housing (B) and remove non-porous material from filter strip (D) and cover (A).

Go on to Sheet 3

DUST DETECTOR OPERATIONAL TEST (Sheet 3 of 3)

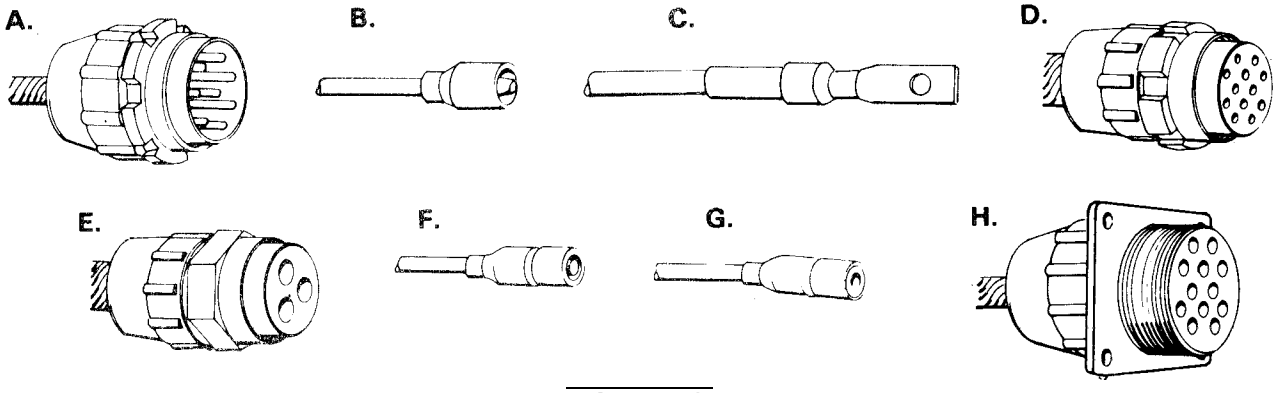
8. Using wrench, tighten three screws (C).
9. Press plunger to reset pressure switch (G).
10. Close top deck grille doors (TM 5-5420-202-10).



End of Task

ELECTRICAL WIRING HARNESS AND CABLE CONNECTOR REPAIR (Sheet 1 of 18)

PROCEDURE INDEX



WARNING

Some wiring harnesses and cables are hot even if MASTER BATTERY switch is set to OFF. Make sure the three battery ground cable assemblies are disconnected before disconnecting any wiring harness or cable (page 10-268).

NOTE

When replacing a bad pin or contact, the opposite pin or contact at the other end of the cable must also be replaced. Do not disassemble the harness. Use a jumper wire of the same gage wire being replaced, cut to the length of the affected cable. When repairs to both connectors are complete, tape the jumper wire to the outside of the cable with friction tape. The jumper wire should be taped at least every 6 to 8 inches, but in no case should any part of the wire be allowed to hang loose.

NOTE

After a plug, receptacle, or connector in the engine compartment has been repaired and the cable or jumper wire has been installed, brush or spray the cable or jumper wire with electrical insulating compound. Allow the compound to dry for about 24 hours before handling. The compound is an insulator of electricity, so care must be taken to keep from overspraying the compound on contacting surfaces of wire terminals, connector pins or contacts, or similar parts where it will prevent the flow of electricity.

Go on to Sheet 2

ELECTRICAL WIRING HARNESS AND CABLE CONNECTOR REPAIR (Sheet 2 of 18)
Male Plug Repair (Sheet 1 of 3)

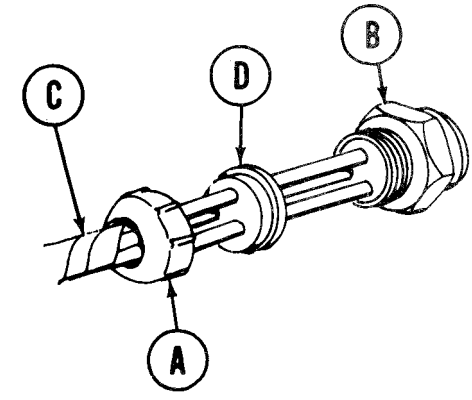
TOOLS: Electrical connector repair tool kit
Soldering gun
Slip joint pliers with plastic jaw inserts
Diagonal cutting pliers

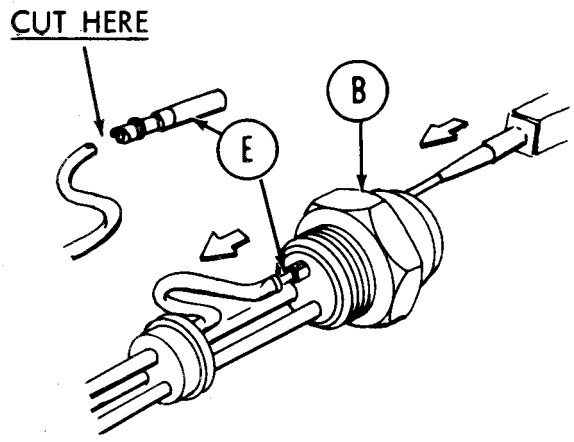
SUPPLIES: Silicone compound (Item 32, Appendix D)
Jumper wire
Electrician's tape (Item 59, Appendix D)

PRELIMINARY PROCEDURES: Disconnect three battery ground straps (page 10-268)
Loosen or remove cable clamps as required
Disconnect connectors at each end of affected cable

1. Manually remove grommet retaining nut (A) from plug assembly (B).

2. Slide grommet retaining nut (A) back along cable (C).



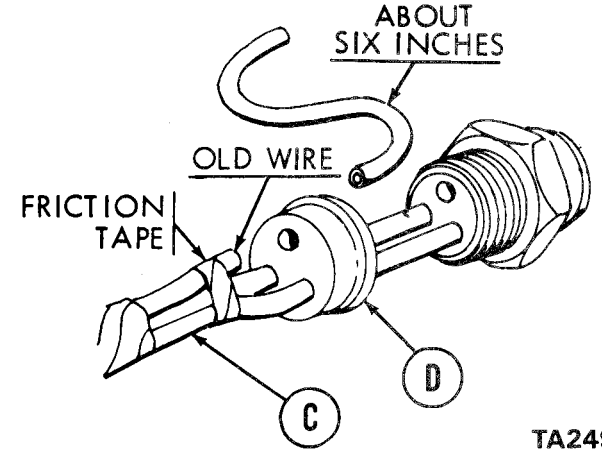


3. Using slip joint pliers, work grommet (D) back and forth and out of plug assembly (B).

4. Using remover, push contact (E) with damaged wire out of back of plug assembly (B).

5. Using diagonal pliers, cut wire from contact (E). Throw away contact (E).

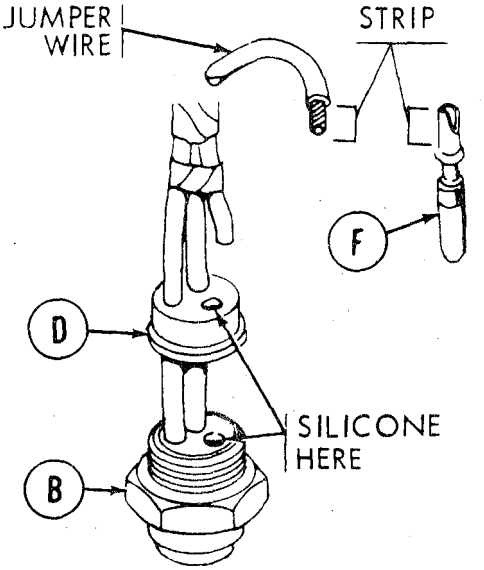
6. Pulling cut wire out of grommet (D), use diagonal cutting pliers to shorten wire about 6 inches. Fasten end of cut wire to cable (C) with friction tape.



TA249240

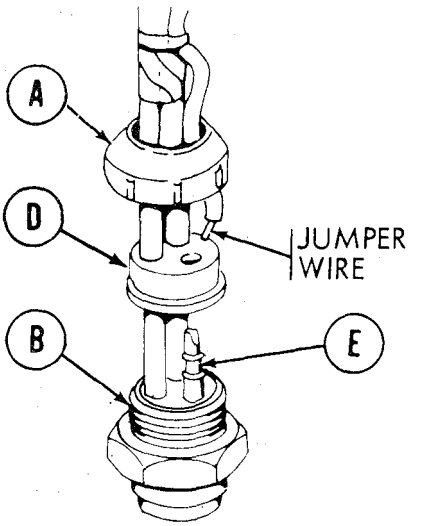
Go on to Sheet 2

ELECTRICAL WIRING HARNESS AND CABLE CONNECTOR REPAIR (Sheet 3 of 18)
Male Plug Repair (Sheet 2 of 3)



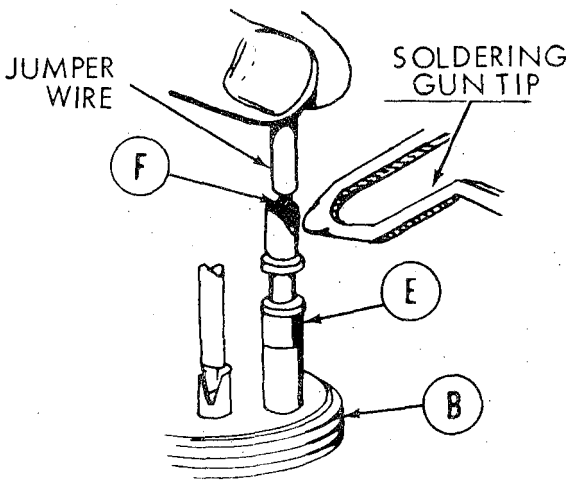
7. Using hand wire stripper, strip insulation from jumper wire equal to depth of contact solder well (F).

8. Placing connector face down on flat surface, apply a small amount of silicone to empty holes on back of plug assembly (B) and on front of grommet (D).



9. Push new contact (E) into hole in back of plug assembly (B) far enough so it will remain standing.

10. Push jumper wire end, first through grommet retaining nut (A) and then through hole in grommet (D).



11. Hold jumper wire so wire end is pushing down on solder in contact solder well (F).

12. Hold soldering gun tip against side of contact (E) until solder begins to melt and wire slips into contact solder well (F).

13. Removing soldering gun from side of contact (E), continue holding wire until solder has cooled and set.

Go on to Sheet 3

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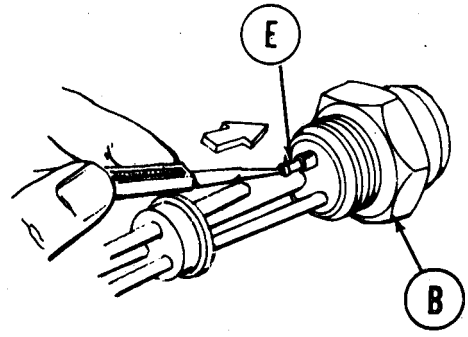
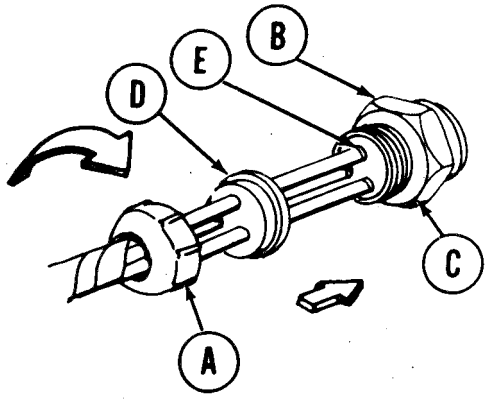
Electrical WIRING HARNESS AND CABLE CONNECTOR REPAIR (Sheet 4 of 18)
Male Plug Repair (Sheet 3 of 3)

14. Using remover, push contact (E) into plug assembly (B).





15. Sliding grommet (D) forward along cable (C), set grommet (D) firmly against contacts (E).

16. Manually thread grommet retaining nut (A) onto plug assembly (B).

17. Using multimeter, check continuity of repaired circuit.

18. Tighten or install cable clamps as required.

19. Connect connectors at each end of affected cable.

20. Connect three battery ground straps (page 10-268).

End of Task

TA249242

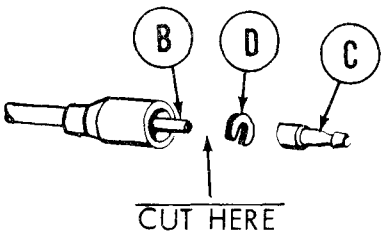
ELECTRICAL WIRING HARNESS AND CABLE CONNECTOR REPAIR (Sheet 5 of 18)
Male Connector Repair (Sheet 1 of 1)

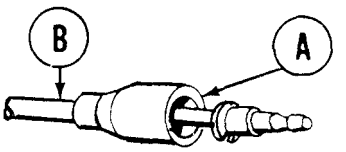
TOOLS: Electrical connector repair tool kit
Diagonal cutting pliers

SUPPLIES: Silicone compound (Item 32, Appendix. D)
Electrician's tape (Item 59, Appendix D)

PRELIMINARY PROCEDURES: Disconnect three battery straps (page 10-268)

1. Slide shell (A) back along cable (B)

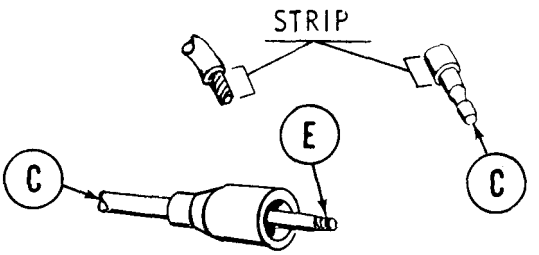


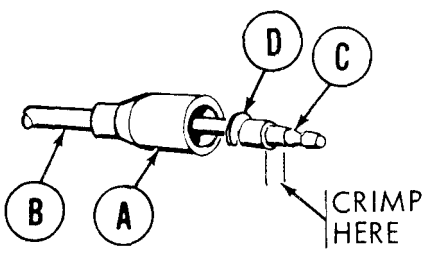


2. Using diagonal cutting pliers, cut terminal (C) and C-washer (D) from cable (B). Throw terminal (C) and C-washer (D) away.

3. Using hand wire stripper, strip insulation from cable (B) equal to well depth in terminal (C).

4. Insert stripped cable end (E) into well in terminal (C).





5. Using crimping tool, crimp terminal (C).

6. Push new C-washer (D) onto cable (B) at rear of terminal (C).

7. Slide shell (4) forward along cable (B) until tight against C-washer (D).

8. Using multimeter, check continuity of repaired circuit.

9. Connect three battery ground straps (page 10-268).

End of Task

TA249243

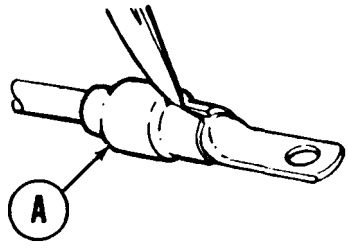
ELECTRICAL WIRING HARNESS CABLE CONNECTOR REPAIR (Sheet 6 of 18)
Terminal Connector Repair (Sheet 1 of 2)

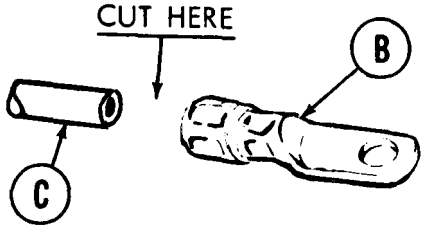
TOOLS: Electrical connector repair tool kit
Diagonal cutting pliers
Heat gun
Pocket knife

SUPPLIES: Heat-shrink tubing (Item 60, Appendix D)
Terminal

PRELIMINARY PROCEDURES: Disconnect three battery ground straps (page 10-268)
Loosen or remove cable clamps as required

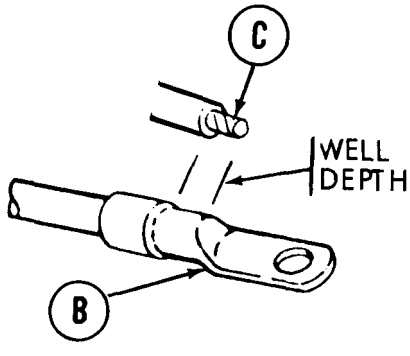
1. Using knife, slit heat-shrink tubing (A) along its entire length. Throw heat-shrink tubing (A) away.





2. Using diagonal cutting pliers, cut terminal (B) from cable (C). Throw terminal (B) away.

3. Using hand wire stripper, strip insulation from cable (C) equal to well depth in terminal (B).

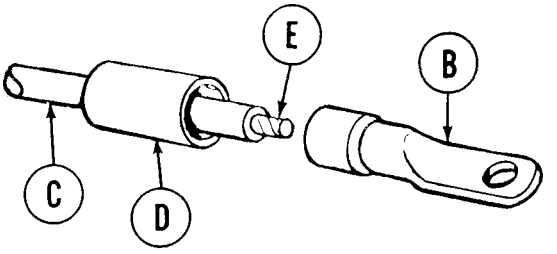


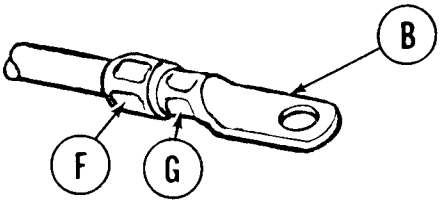
Go on to Sheet 2

ELECTRICAL WIRING HARNESS AND CABLE CONNECTOR REPAIR (Sheet 7 of 18)
Terminal Connector Repair (Sheet 2 of 2)

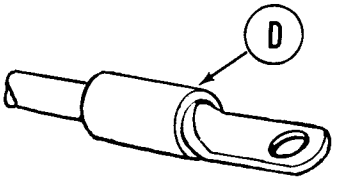
4. Slide new heat-shrink tubing (D) onto and back along cable (C).

5. Slide new terminal (B) over stripped cable end (E) and onto cable (C).





6. Using crimping tool, crimp terminal (B) at (F) and (G).



7. Slide heat-shrink tubing (D) over crimps (F and G).

8. Using heat gun, shrink tubing (D).

9. Using multimeter, check continuity of repaired circuit.

10. Tighten or install cable clamps as required.

11. Connect three battery ground straps (page 10-268).

End of Task

TA249245

ELECTRICAL WIRING HARNESS AND CABLE CONNECTOR REPAIR (Sheet 8 of 18)
Female Plug Repair (Sheet 1 of 3)

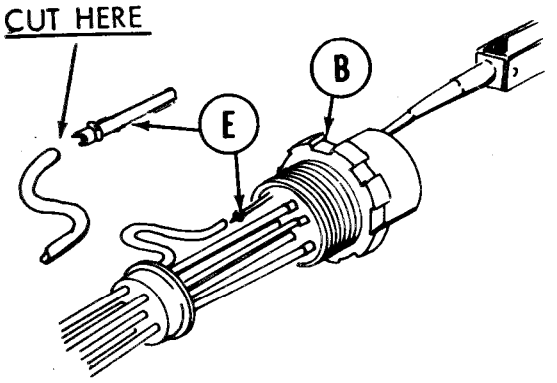
TOOLS: Electrical connector repair tool kit
Soldering gun
Slip joint pliers with plastic jaw inserts
Diagonal cutting pliers

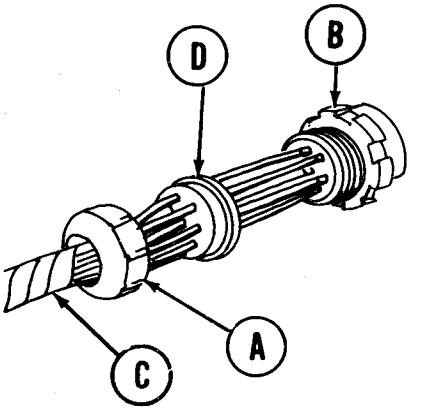
SUPPLIES: Silicone compound (Item 32, Appendix D)
Electrician's tape (Item 59, Appendix D)
Jumper wire

PRELIMINARY PROCEDURES: Disconnect three battery ground straps (page 10-268)
Loosen or remove cable clamps as required
Disconnect connectors at each end of affected cable

1. Manually remove grommet retaining nut (A) from plug assembly (B).

2. Slide grommet retaining nut (A) back along cable (C).





3. Using slip joint pliers, work grommet (D) back and forth and out of plug assembly (B).

4. Using remover, push contact (E) with damaged wire out of back of plug assembly (B).

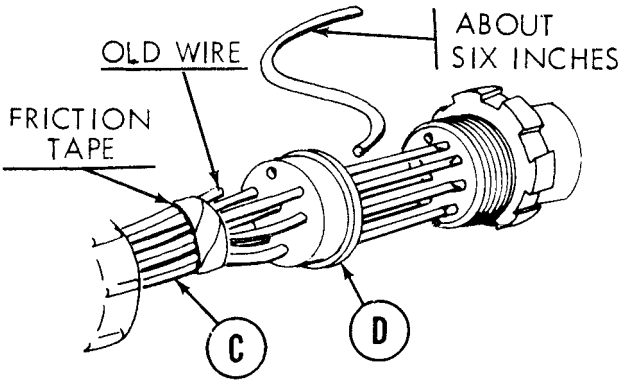
Go on to Sheet 2

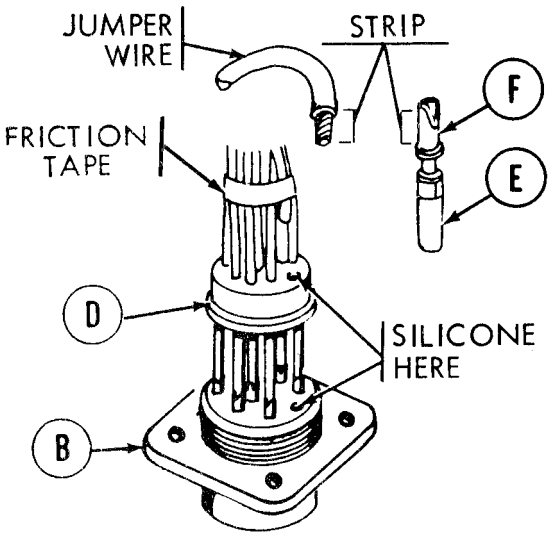
TA249246

ELECTRICAL WIRING HARNESS AND CABLE CONNECTOR REPAIR (Sheet 9 of 18)
Female Plug Repair (Sheet 2 of 3)

5. Using diagonal cutting pliers, cut wire from contact (E). Throw away contact (E).

6. Pulling cut wire out of grommet (D), use diagonal cutting pliers to shorten wire about 6 inches. Fasten new end of cut wire to cable (C) and wrap with friction tape.



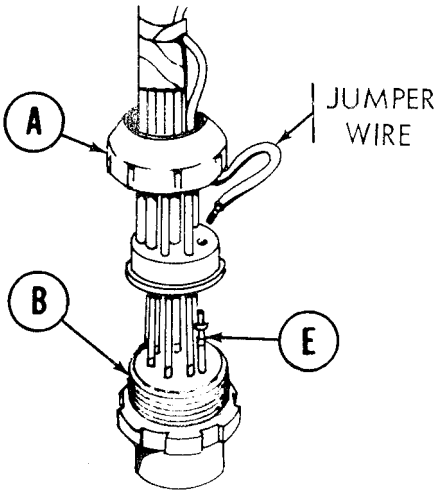


7. Using hand wire stripper, strip insulation from jumper wire equal to depth of contact solder well (F).

8. Placing connector face down on flat surface, apply a small amount of silicone to empty holes on back of plug assembly (B) and on front of grommet (D).

9. Push new contact (E) into hole in back of plug assembly (B) far enough so it will remain standing.

10. Push jumper wire end, first through grommet retaining nut (A) and then through hole in grommet (D).



Go on to Sheet 3

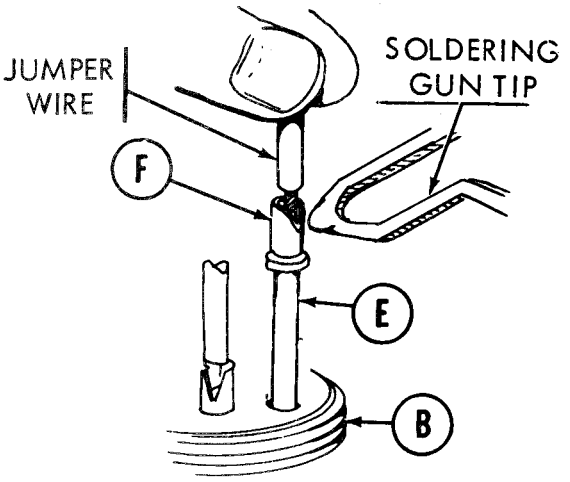
TA249247

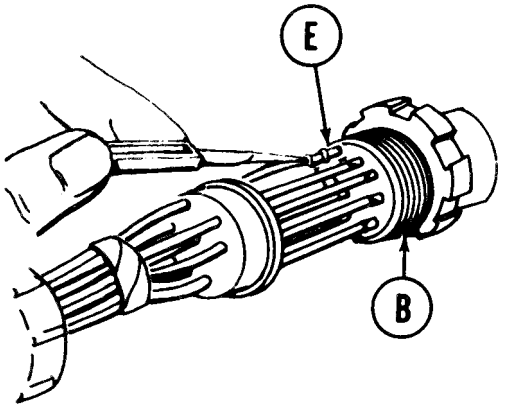
ELECTRICAL WIRING HARNESS AND CABLE CONNECTOR REPAIR (Sheet 10 of 18)
Female Plug Repair (Sheet 3 of 3)

11. Hold jumper wire so wire end is pushing down on solder in contact solder well (F).

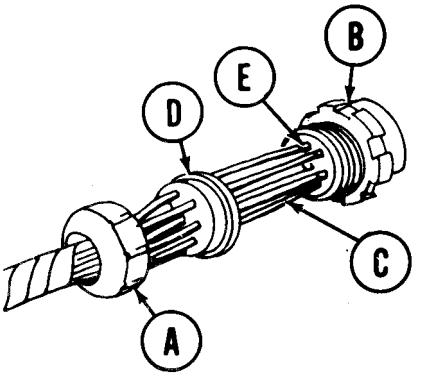
12. Hold soldering gun tip against side of contact (E) until solder begins to melt and wire slips into contact solder well (F).

13. Removing soldering gun from side of contact (E), continue holding wire until solder has cooled and set.





14. Using remover, push contact (E) into plug assembly (B).



15. Sliding grommet (D) forward along cable (C), set grommet (D) firmly against contacts (E).

16. Manually thread grommet retaining nut (A) onto plug assembly (B).

17. Using multimeter, check continuity of repaired circuit.

18. Tighten or install cable clamps as required.

19. Connect connectors at each end of affected cable.

20. Connect three battery ground straps (page 10-268).

End of Task

TA249248

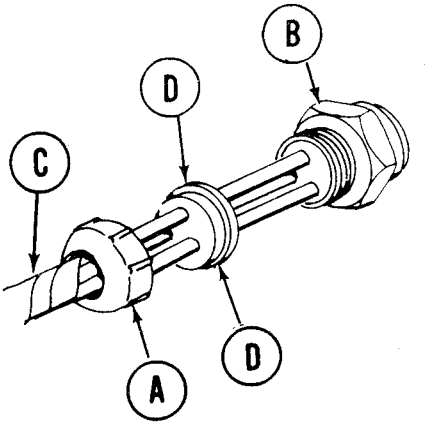
ELECTRICAL WIRING HARNESS AND CABLE CONNECTOR REPAIR (Sheet 11 of 18)
Female Plug Repair (Sheet 1 of 3)

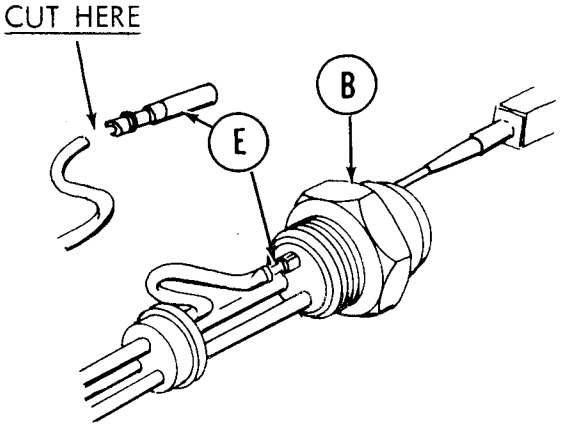
TOOLS: Electrical connector repair tool kit
Soldering gun
Slip joint pliers with plastic jaw inserts
Diagonal cutting pliers

SUPPLIES: Silicone compound (Item 32, Appendix D)
Electrician's tape (Item 59, Appendix D)
Jumper wire

PRELIMINARY PROCEDURES: Disconnect three battery ground straps (page 10-268)
Loosen or remove cable clamps as required
Disconnect connectors at each end of affected cable

1. Manually remove grommet retaining nut (A) from plug assembly (B).
2. Slide grommet retaining nut (A) back along cable (C).





3. Using slip joint pliers, work grommet (D) back and forth and out of plug assembly (B).
4. Using remover, push contact (E) with damaged wire out of back of plug assembly (B).

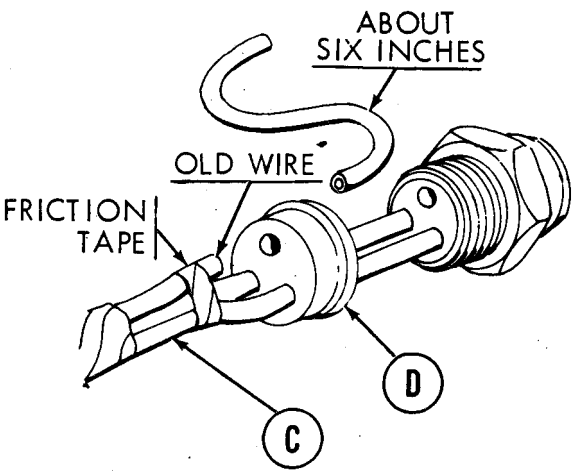
Go on to Sheet 2

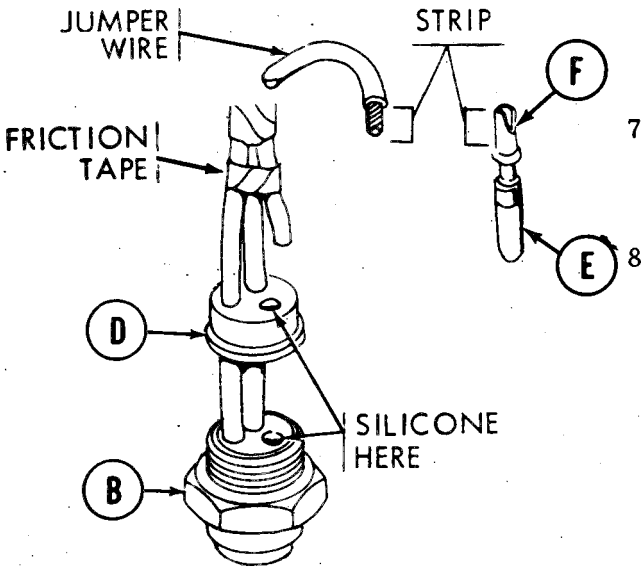
TA249249

ELECTRICAL WIRING HARNESS AND CABLE CONNECTOR REPAIR (Sheet 12 of 18)
Female Plug Repair (Sheet 2 of 3)

5. Using diagonal cutting pliers, cut wire from contact (E). Throw away contact (E).

6. Pulling cut wire out of grommet (D), use diagonal cutting pliers to shorten wire about 6 inches. Fasten new end of cut wire to cable (C) and wrap with friction tape.



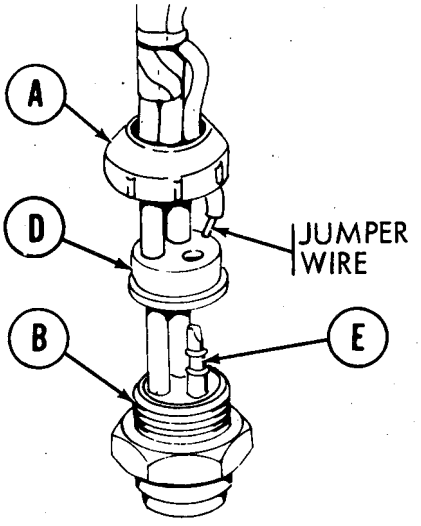


7. Using hand wire stripper, strip insulation from jumper wire equal to depth of contact solder well (F).

8. Placing connector face down on flat surface, apply a small amount of silicone to empty holes on back of plug assembly (B) and on front of grommet (D).

9. Push new contact (E) into hole in back of plug assembly (B) far enough so it will remain standing.

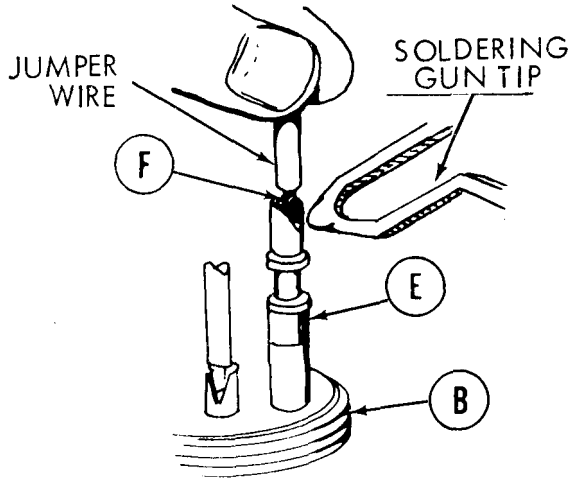
10. Push jumper wire end, first through grommet retaining nut (A) and then through hole in grommet (D).



Go on to Sheet 3

TA249250

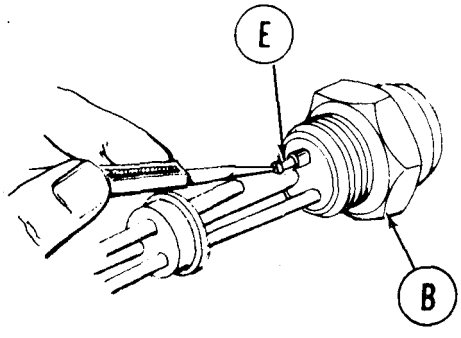
ELECTRICAL WIRING HARNESS AND CABLE CONNECTOR REPAIR (Sheet 13 of 18)
Female Plug Repair (Sheet 3 of 3)



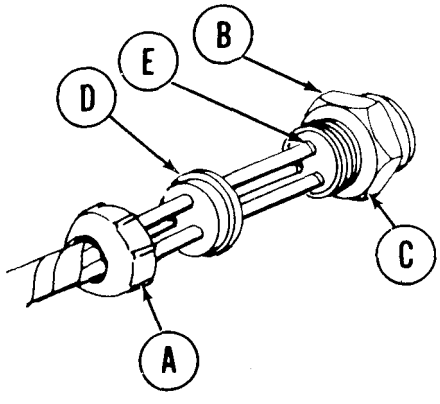
11. Hold jumper wire so wire end is pushing down on solder in contact solder well (F).

12. Holding soldering gun tip against side of contact (E) until solder begins to melt and wire slips into contact solder well (F).

13. Removing soldering gun from side of contact (E), continue holding wire until solder has cooled and set.



14. Using remover, push contact (E) into plug assembly (B).



15. Sliding grommet (D) forward along cable (C), set grommet (D) firmly against contacts (E).

16. Manually thread grommet retaining nut (A) onto plug assembly (B).

17. Using multimeter, check continuity of repaired circuit.

18. Tighten or install cable clamps as required.

19. Connect connectors at each end of affected cable.

20. Connect three battery ground straps (page 10-268).

End of Task

TA249251

ELECTRICAL WIRING HARNESS AND CABLE CONNECTOR REPAIR (Sheet 14 of 18)

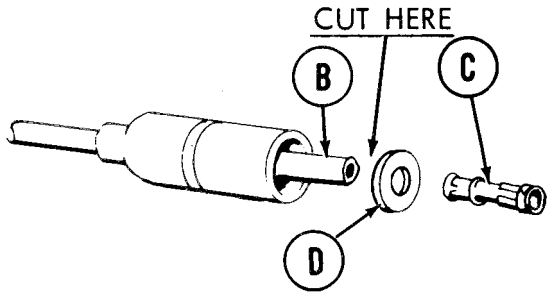
Female Connector With Washer (12 Gauge Cable) Repair (Sheet 1 of 1)

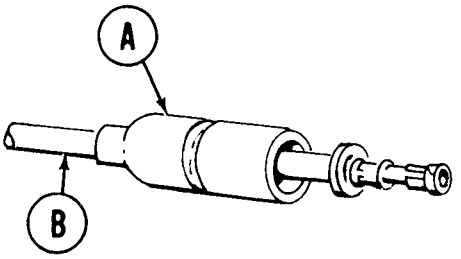
TOOLS: Electrical connector repair tool kit
Diagonal cutting pliers

SUPPLIES: Silicone compound (Item 32, Appendix D)

PRELIMINARY PROCEDURES: Disconnect three battery ground straps (page 10-268)
Loosen or remove cable clamps as required

1. Slide shell (A) back along cable (B).

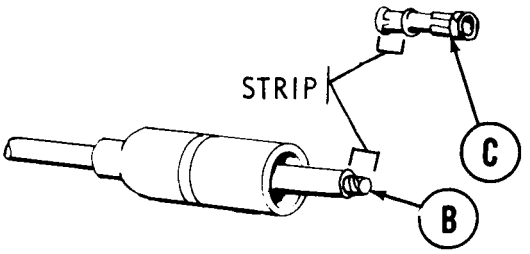


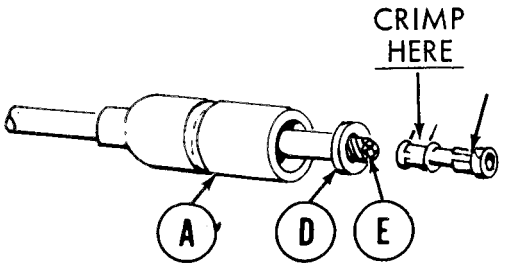


2. Using diagonal cutting pliers, cut terminal (C) and washer (D) from cable (B). Throw terminal (C) and washer (D) away.

3. Using hand wire stripper, strip insulation from cable (B) equal to well depth in terminal (C).

4. Slide new washer (D) onto stripped cable end (E) back to cable insulation.





5. Insert stripped cable end (E) into well in terminal (C).

6. Using crimping tool, crimp terminal (C).

7. Slide shell (A) forward until tight against washer (D).

8. Using multimeter, check continuity of repaired circuit.

9. Tighten or install cable clamps as required.

10. Connect three battery ground straps (page 10-268).

End of Task

TA249252

ELECTRICAL WIRING HARNESS AND CABLE CONNECTOR REPAIR (Sheet 15 of 18)

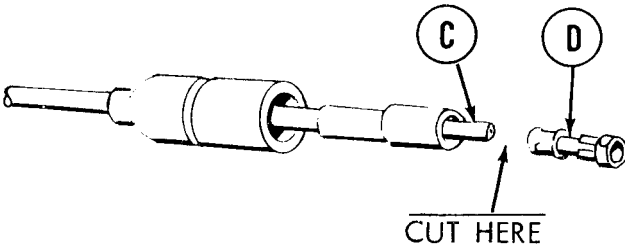
Female Connector With Sleeve (14 and 16 Gauge Cable) Repair (Sheet 1 of 1)

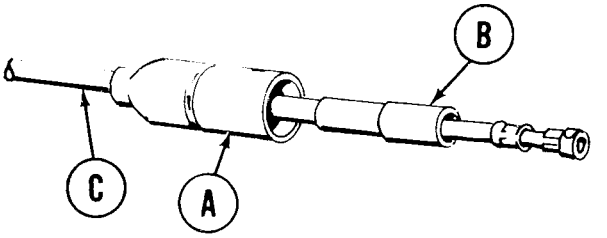
TOOLS: Electrical connector repair tool kit
Diagonal cutting pliers

SUPPLIES: Silicone compound (Item 32, Appendix D)

PRELIMINARY PROCEDURES: Disconnect three battery ground straps (page 10-268)
Loosen or remove cable clamps as required

1. Slide shell (A) and sleeve (B) back along cable (C).

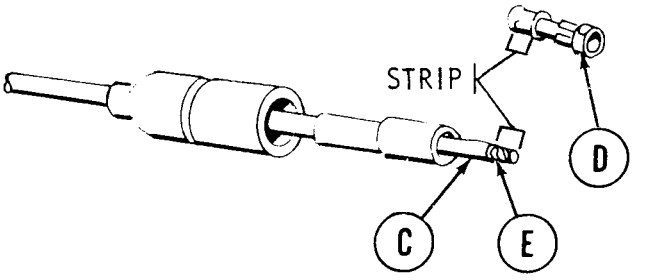


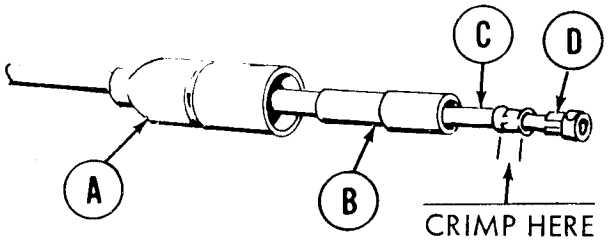


2. Using diagonal cutting pliers, cut terminal (D) from cable (C). Throw teriminal (D) away.

3. Using hand wire stripper, strip insulation from cable (C) equal to well depth in terminal (D).

4. Insert stripped cable end (E) into well in terminal (D).





5. Using crimping tool, crimp terminal (D).

6. Slide sleeve (B) forward along cable (C) until tight against terminal (D).

7. Slide shell (A) forward along cable (C) until tight against sleeve (B).

8. Using multimeter, check continuity of repair circuit.

9. Tighten or install cable clamps as required.

10. Connect three battery ground straps (page 10-268).

End of Task

TA249253

ELECTRICAL WIRING HARNESS AND CABLE CONNECTOR REPAIR (Sheet 16 of 18)
Female Receptacle Repair (Sheet 1 of 3)

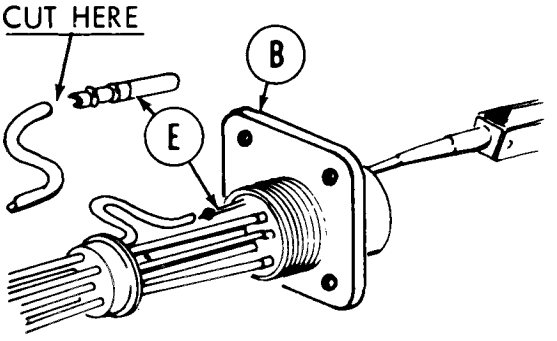
TOOLS: Electrical connector repair tool kit
Soldering gun
Slip joint pliers with plastic jaw inserts
Diagonal cutting pliers
Pocket knife
Heat gun

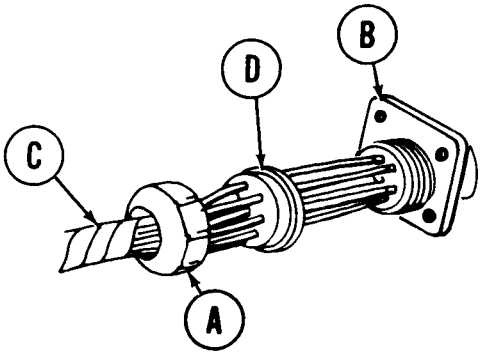
SUPPLIES: Silicone compound (Item 32. Appendix D)
Heat-shrink tubing (Item 60, Appendix D)
Electrician's tape (Item 59, Appendix D)
Jumper wire

PRELIMINARY PROCEDURES: Disconnect three battery ground straps (page 10-268)
Loosen or remove cable clamps as required
Disconnect connectors at each end of affected cable

1. Manually remove grommet retaining nut (A) from contact (B).

2. Slide grommet retaining nut (A) back along cable (C).



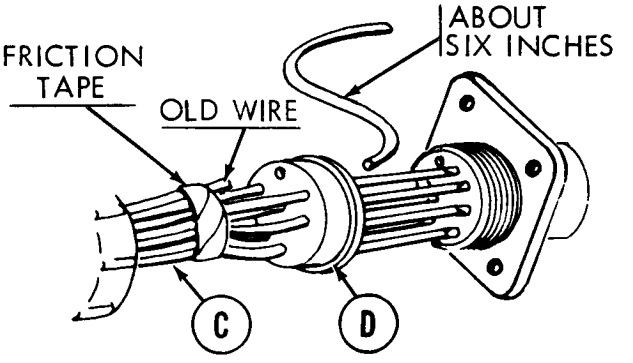


3. Using slip joint pliers, work grommet (D) back and forth and out of plug assembly (B).

4. Using remover, push contact (E) with damaged wire out of back of plug assembly (B).

5. Using diagonal cutting pliers, cut wire from contact (E). Throw away contact (E).

6. Pulling cut wire out of grommet (D), use diagonal cutting pliers to shorten wire about 6 inches. Fasten new end of cut wire to cable (C) with friction tape.



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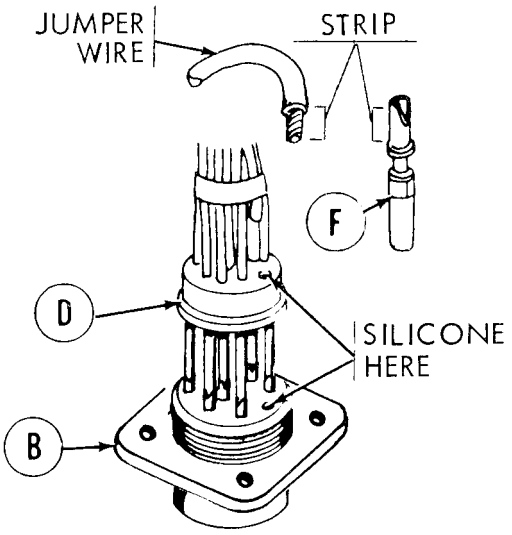
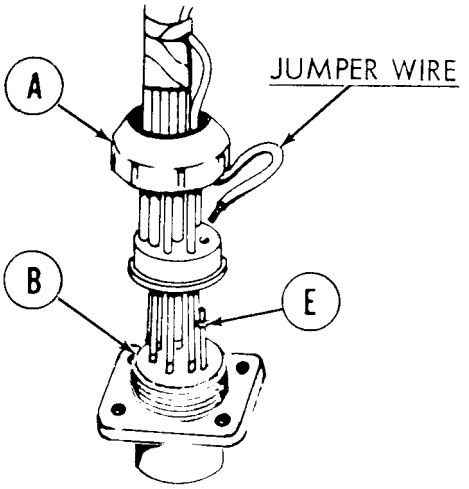
ELECTRICAL WIRING HARNESS AND CABLE CONNECTOR REPAIR (Sheet 17 of 18)
Female Receptacle Repair (Sheet 2 of 3)



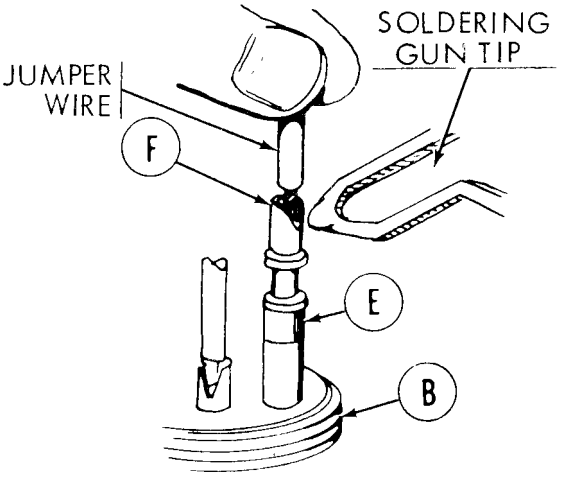
7. Using hand wire stripper, strip insulation from jumper wire equal to depth of contact solder well (F).

8. Placing connector face down on flat surface, apply a small amount of silicone to empty holes on back of plug assembly (B) and on front of grommet (D).



9. Push new contact (E) into hole in back of plug assembly (B) far enough so it will remain standing.

10. Push jumper wire end, first through grommet retaining nut (A) and then through hole in grommet (D).



11. Hold jumper wire so wire end is pushing down into solder in contact solder well (F).

12. Hold soldering gun tip against side of contact (E) until solder begins to welt and wire slips into contact solder well (F).

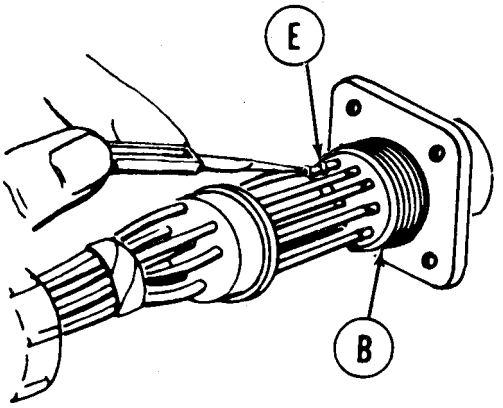
13. Removing soldering gun from side of contact (E), continue holding wire until solder has cooled and set.

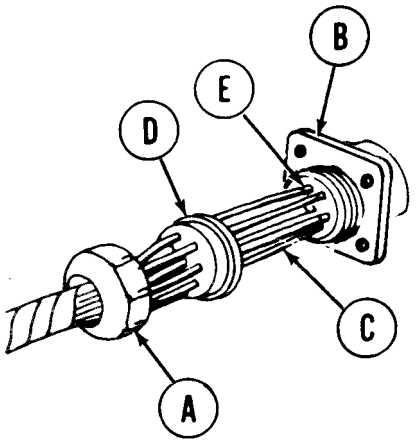
Go on to Sheet 3

TA249255

ELECTRICAL WIRING HARNESS AND CABLE CONNECTOR REPAIR (Sheet 18 of 18)
Female Receptacle Repair (Sheet 3 of 3)

14. Using remover, push contact (E) into plug assembly (B).





15. Sliding grommet (D) forward along cable (C), set grommet (D) firmly against contact (E).

16. Manually thread grommet retaining nut (A) onto plug assembly (B).

17. Using multimeter, check continuity of repaired circuit.

18. Tighten or install cable clamps as required.

19. Connect connectors at each end of affected cable.

20. Connect three battery ground straps (page 10-268).

End of Task

TA249256

FUEL TANK CAPACITOR AND HOUSING ASSEMBLY REPLACEMENT (RIGHT) (Sheet 1 of 5)

PROCEDURE INDEX

TOOLS: Flat-tip screwdriver
Diagonal cutting pliers
Slip-joint pliers
Putty knife
1/2 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
Torque wrench with 1/2 in. drive (0-175 lb-ft)

SUPPLIES: Lockwire (Item 61, Appendix D)
Gaskets
Gloves (Item 69, Appendix D)
Lint-free cloth (Item 12, Appendix D)
Dry cleaning solvent (Item 55, Appendix D)
Goggles (Item 70, Appendix D)

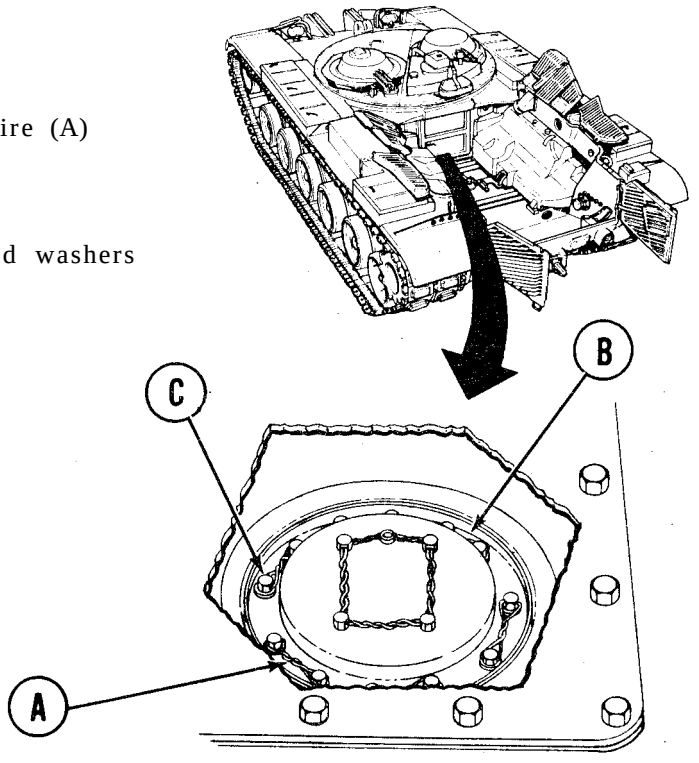
REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Remove powerplant (page 5-2)
Drain right fuel tank (TM 5-5420-202-10)
Remove floor access cover (page 17-5)

REMOVAL:

1. Using cutting pliers, remove lockwire (A) from fuel pump cover (B).

2. Using socket, remove 12 screws and washers (C) securing cover (B).



Go on to Sheet 2

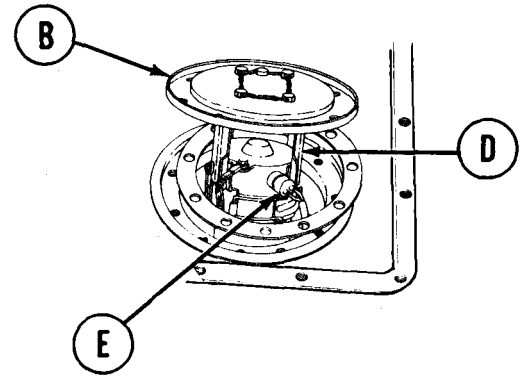
TA249257

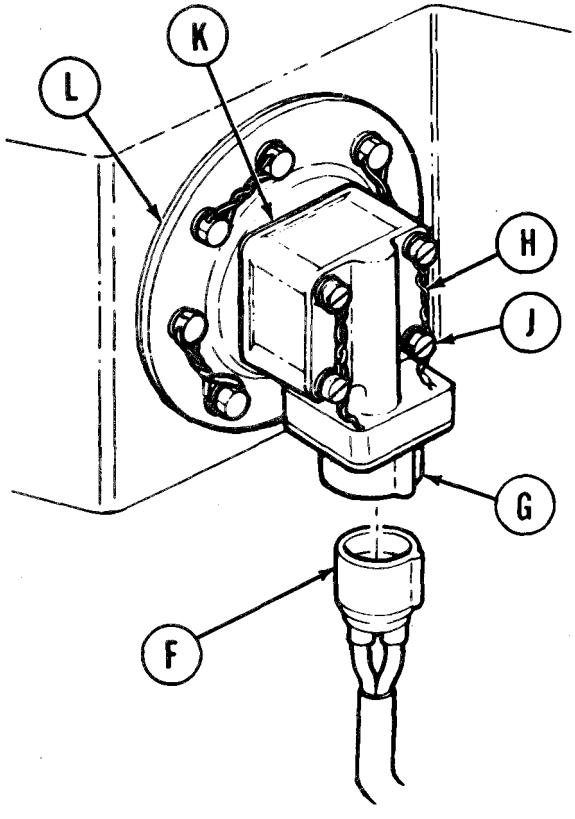
FUEL TANK CAPACITOR AND HOUSING ASSEMBLY REPLACEMENT (RIGHT)
(Sheet 2 of 5)

3. Lift cover (B) with fuel pump (D) from tank.

4. Using fingers, disconnect cable (E) from fuel pump (D) by pulling out.

5. Rest cover (B) in original position on fuel tank.





6. Using fingers, disconnect cable (F) from electrical connector (G) by pulling out.

7. Using diagonal pliers, remove lockwire (H) from four screws (J).

8. Using screwdriver, remove four screws and washers (J) holding housing (K) to cover (L).

9. Slowly separate capacitor and housing (K) from cover (L). Capacitor and housing (K) are connected to cover (L) with an electrical lead.

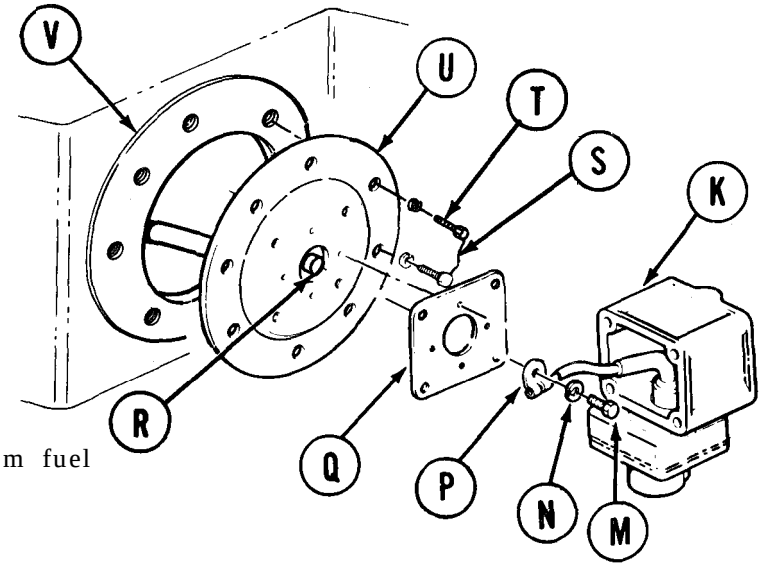
10. Using screwdriver, remove screw (M), washer (N), electrical lead (P) and gasket (Q) from adapter (R). Discard gasket.

11. Using cutting pliers, remove lockwire (S) from screws (T).

12. Using socket, remove eight screws and washers (T).

13. Remove cover (U) and gasket (V) from fuel tank. Discard gasket.

Go on to Sheet 3

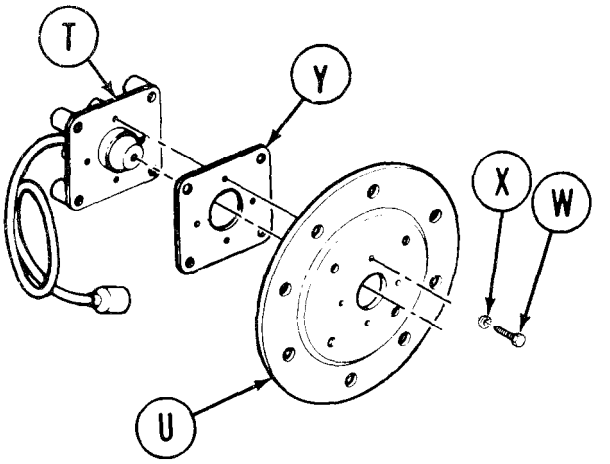


TA249258

FUEL TANK CAPACITOR AND HOUSING ASSEMBLY REPLACEMENT (RIGHT) (Sheet 3 of 5)

14. Using screwdriver, remove four screws (W) and washers (X) from cover (U) and adapter (T).

15. Separate cover (U), gasket (Y), and adapter (T). Discard gasket (Y).



CLEANING AND INSPECTION:

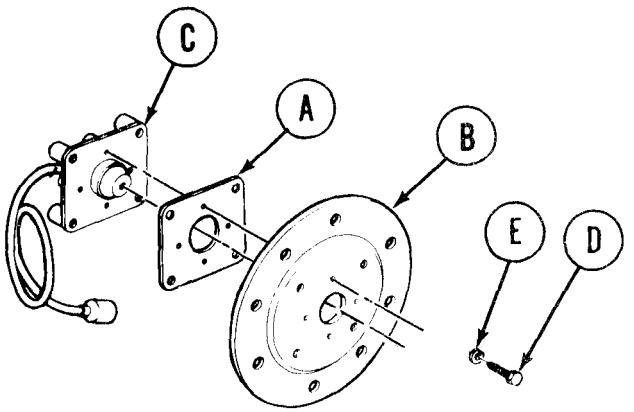
1. Using putty knife, clean all areas where gaskets were mounted.

WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. To prevent personal injury, wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point for Type #1 Dry Cleaning Solvent is 100°F (38°C) and for Type #2 is 138°F (50°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

2. Using dry cleaning solvent and lint-free cloth, wipe gasket surfaces clean.

3. Inspect cable, adapter and cover for damage. Replaced damaged parts.



INSTALLATION:

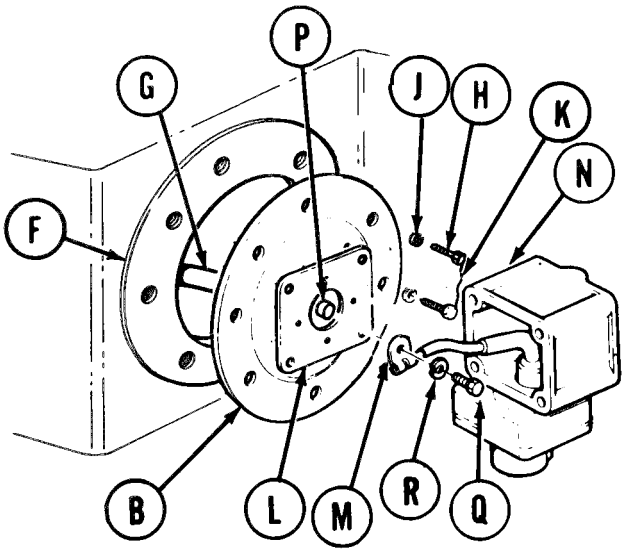
1. Position new gasket (A), and cover (B) onto adapter (C).

2. Using screwdriver, install four screws (D) and washers (E) securing cover and gasket (A) to adapter (C).

Go on to Sheet 4

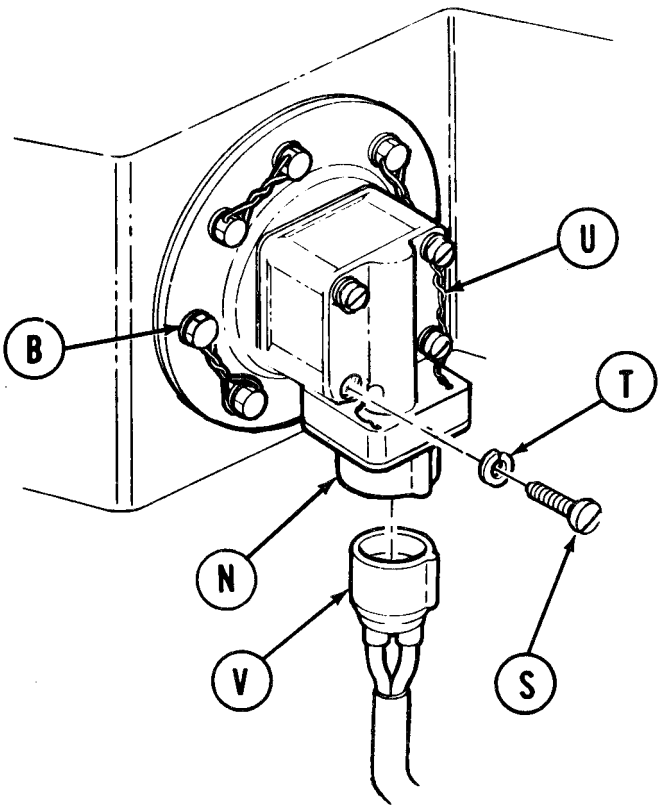
TA249260

FUEL TANK CAPACITOR AND HOUSING ASSEMBLY REPLACEMENT (RIGHT)
(sheet 4 of 5)



3. Position new gasket (F) between cover and fuel tank.
4. Position cable (G) attached to rear of cover (B) through gasket (F) and lay in fuel tank.
5. Using socket, install eight screws (H) and washers (J) securing cover (B) to fuel tank.
6. Using torque wrench, tighten screws (H) to 50 to 85 lb-in (6 to 10 N•m).
7. Using slip-joint pliers, install lockwire (K) through screws (H).

8. Position new gasket (L) to cover (B).
9. Using screwdriver, secure electrical lead (M) of housing and capacitor (N) to adapter (P) with screw (Q) and washer (R).
10. Position capacitor and housing (N) onto cover (B).
11. Using screwdriver, install four screws (S) and washers (T) securing capacitor and housing (N) to cover (B).
12. Install lockwire (U) onto screws (S).
13. Using fingers, install cable (V) into electrical connection on capacitor and housing (N) by pushing in.



Go on to sheet 5

TA249261

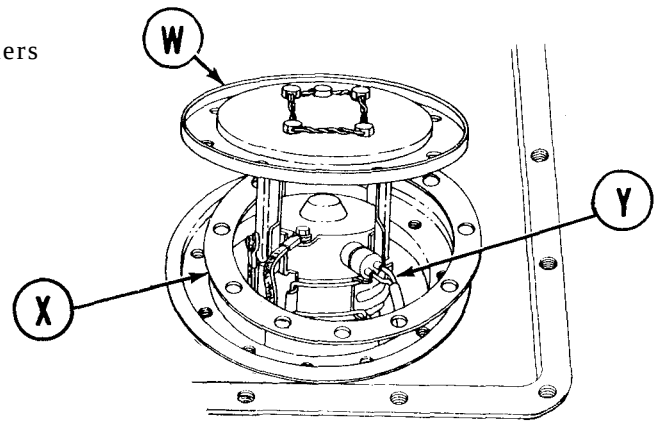
FUEL TANK CAPACITOR AND HOUSING ASSEMBLY REPLACEMENT (RIGHT) (Sheet 5 of 5)

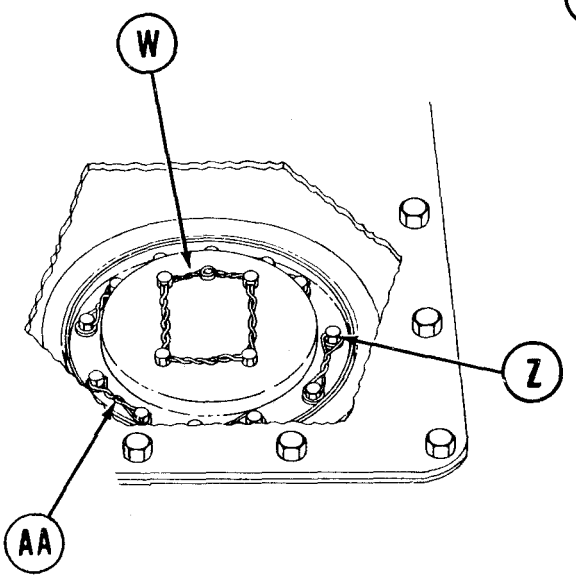
14. Lift cover (W) with attached fuel pump out of fuel tank and position new gasket (X) on mount.

15. Using hand, install cable onto fuel pump connector (Y) by pushing in and turning clockwise.

16. Position cover (W) on fuel tank.

17. Using socket, install 12 screws and washers (Z) securing cover (W) to tank.





18. Using torque wrench, tighten screws (Z).

19. Using slip joint pliers, install lockwire (AA) in 12 screws (Z).

20. Install access cover (page 17-8).

21. Install powerplant (page 5-14).

22. Service fuel tank (TM 5-5420-202-10).

End of Task

TA249262

FUEL TANK CAPACITOR AND HOUSING ASSEMBLY REPLACEMENT (LEFT) (Sheet 1 of 5)

PROCEDURE INDEX

TOOLS: Flat-tip screwdriver
Diagonal cutting pliers
Putty knife
Slip-joint pliers
1/2 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
Torque wrench with 1/2 in. drive (0-175 lb-ft)

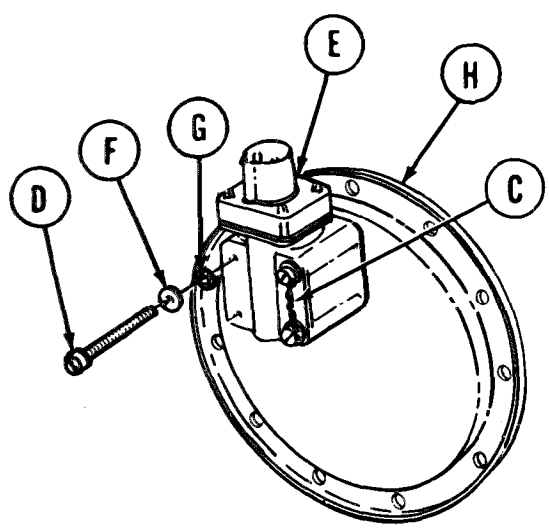
SUPPLIES: Dry cleaning solvent (Item 55, Appendix D)
Lint-free cloth (Item 12, Appendix D)
Lockwire (Item 61, Appendix D)
Gaskets
Gloves (Item 69, Appendix D)
Goggles (Item 70, Appendix D)
Lockwashers (8 required)

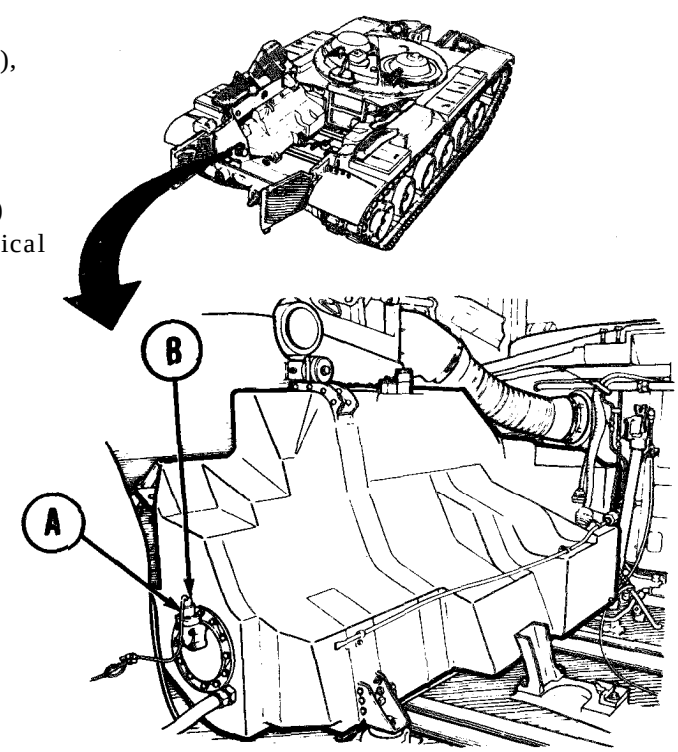
REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Remove powerplant (page 5-2).
Drain left fuel tank (TM 5-5420-202-10)

REMOVAL:

1. Remove electrical connector (A) from capacitor and housing electrical connector (B) by pulling out.
2. Using diagonal cutting pliers, remove lockwire (C) securing four screws (D) on capacitor and housing (E).
3. Using screwdriver, remove four screws (D), flat washers (F), and lockwasher (G) from capacitor and housing (E).
4. Slowly separate capacitor and housing (E) from cover (H). Capacitor and housing (E) are connected to cover (H) with an electrical lead.





TA249263

Go on to Sheet 2

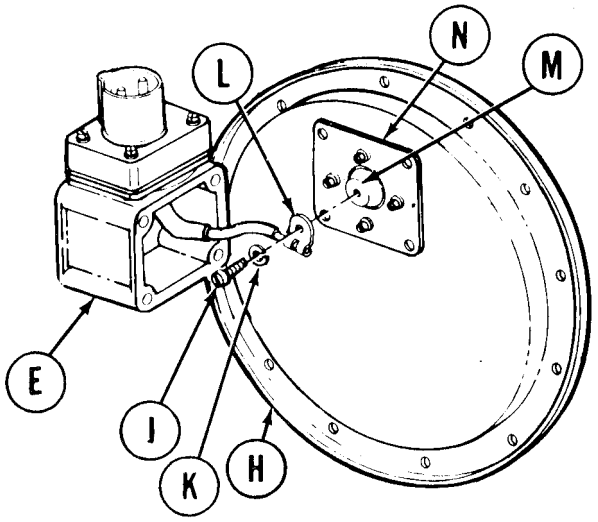
FUEL TANK CAPACITOR AND HOUSING ASSEMBLY REPLACEMENT (LEFT)
(Sheet 2 of 5)

5. Using screwdriver, remove screw (J) and washer (K) securing electrical lead (L) to adapter (M).

6. Remove capacitor and housing (E) and gasket (N) from cover (H).

7. Using diagonal cutting pliers, remove lockwire (P) securing 12 screws (Q) on access cover (H).

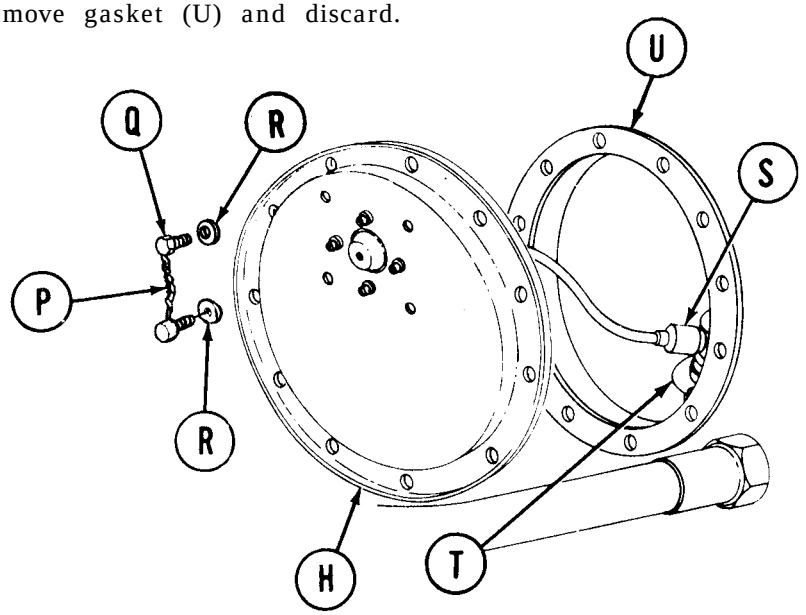
8. Using socket, remove 12 screws (Q) and flat washers (R) securing cover (H) to fuel tank.



9. Slowly pull back access cover (H) to expose electrical lead (S) connecting rear of access cover (H) to fuel pump (T).

10. Using fingers, disconnect electrical lead (S) from fuel pump (T) by pushing them in then turning counterclockwise and pulling out.

11. Using putty knife, remove gasket (U) and discard.



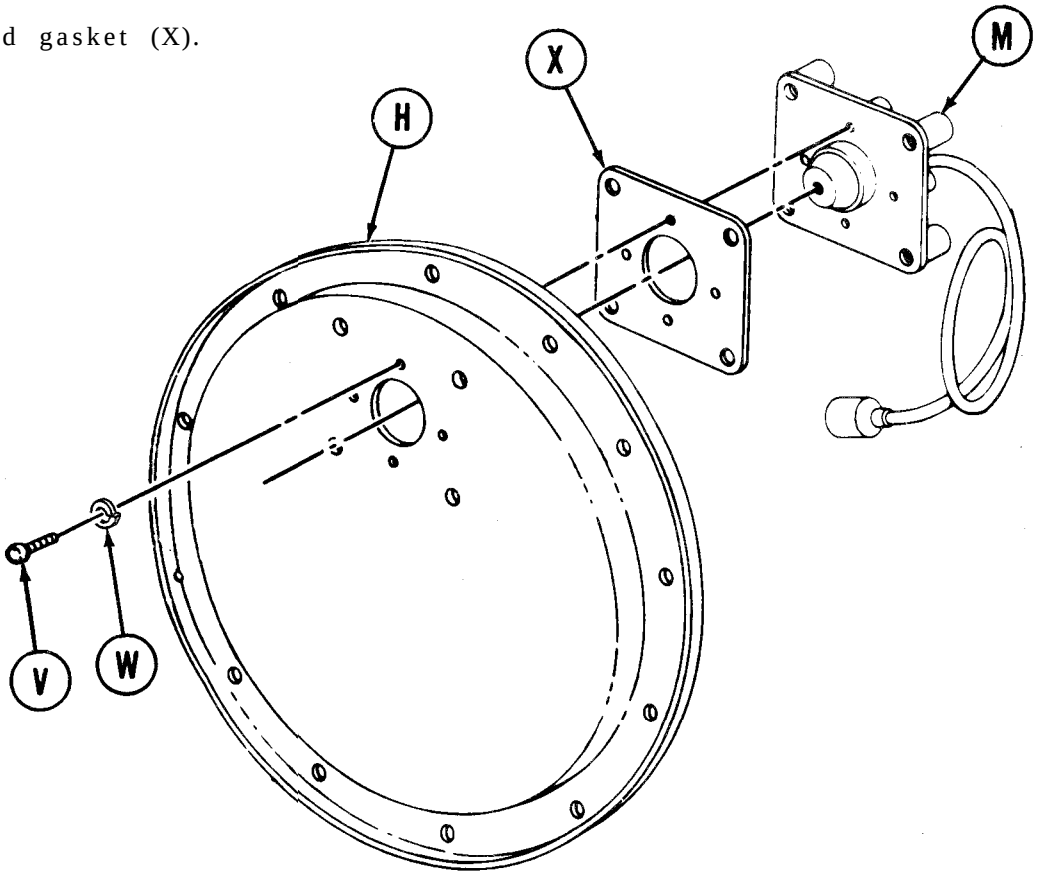
Go on to Sheet 3

TA249264

FUEL TANK CAPACITOR AND HOUSING ASSEMBLY REPLACEMENT (LEFT) (Sheet 3 of 5)

12. Using screwdriver, remove four screws (V) and lockwashers (W) from securing adapter (M) to cover (H). Separate cover (H), gasket (X) and adapter (M).

13. Discard gasket (X).



CLEANING AND INSPECTION:

1. Using putty knife, clean all areas where gaskets were mounted.

WARNING

Dry clearning solvent P-D-680 is toxic end flammable. To prevent personal injury, wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes don't breathe vapors. Do not use near open flame or excessive heat. The flash point for Type #1 Dry Cleaning Solvent is 100°F (38°C) and for Type #2 is 138°F (50°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

2. Using dry cleaning solvent and lint-free cloth, wipe gasket surface clear.

3. Inspect cable and adapter (M) and cover (H) for damage. Replace damaged parts.

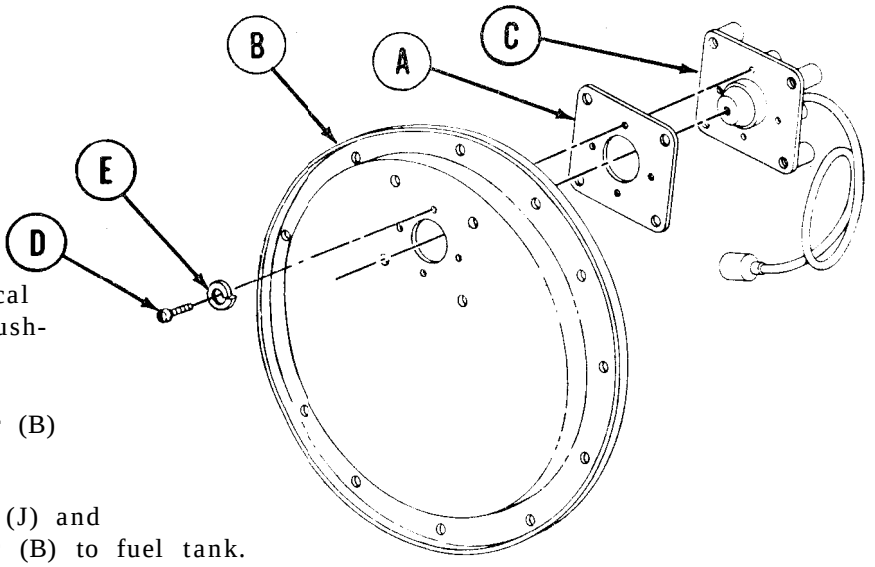
Go on to Sheet 4

TA249265

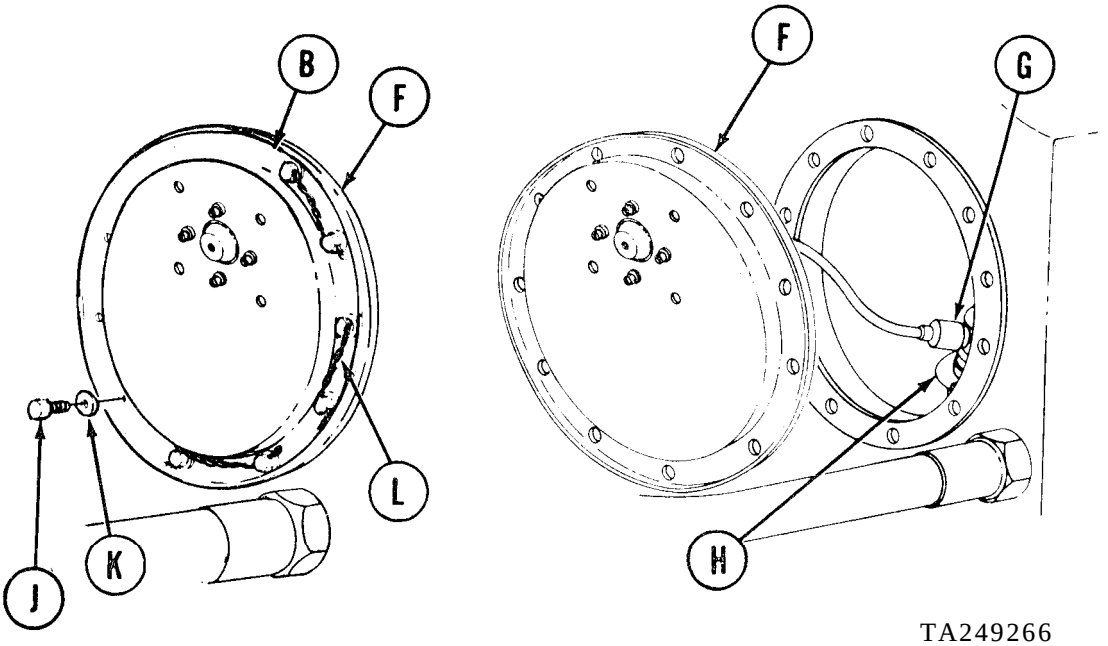
FUEL TANK CAPACITOR AND HOUSING ASSEMBLY REPLACEMENT (LEFT) (Sheet 4 of 5)

INSTALLATION:

1. Place new gasket (A), cover (B) and cable and adapter (C) in position.
2. Using screwdriver, install four screws (D) and lockwashers (E) securing gasket (A) and adapter (C) to cover (B).
3. Place gasket (F) over electrical lead (G).



4. Using fingers, connect electrical lead (G) to fuel pump (H) by pushing in and turning clockwise.
5. Place new gasket (F) and cover (B) on fuel tank.
6. Using socket, install 12 screws (J) and flat washers (K) securing cover (B) to fuel tank.
7. Using torque wrench, tighten 12 screws (J) to 48 to 84 lb-ft (5.5 to 9.5 N·m).
8. Using pliers, install lockwire (L) in screws (K).



Go on to Sheet 5

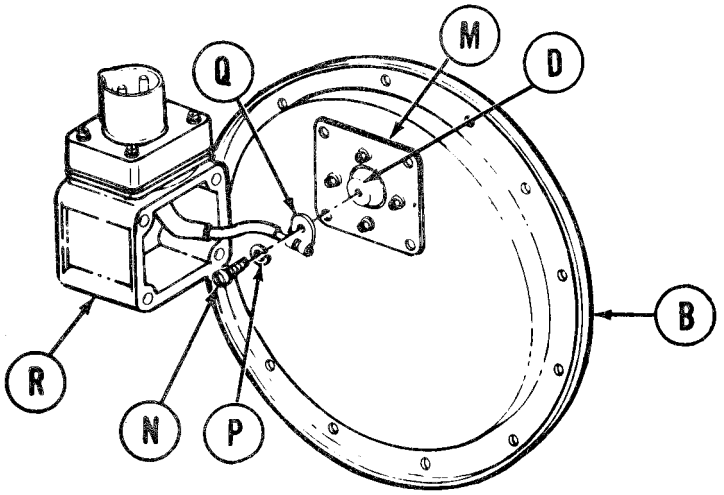
TA249266

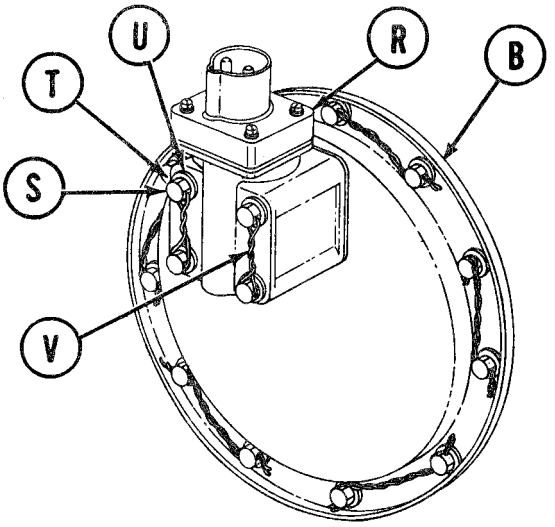
FUEL TANK CAPACITOR AND HOUSING ASSEMBLY REPLACEMENT (LEFT)
(Sheet 5 of 5)

9. Position gasket (M) to cover (B).

10. Using screwdriver, install screw (N) aid lockwasher (P) securing electrical lead (Q) to housing and capacitor (R) to adapter (D).

11. Position capacitor and housing (R) to cover (B).





12. Using screwdriver, install four screws (S), lockwashers (T), and flat washers (U) securing capacitor and housing (R) to cover (B).

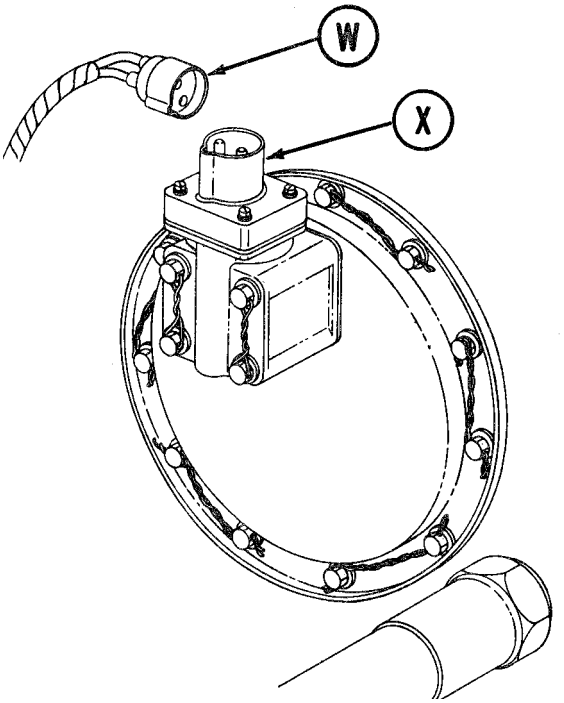
13. Using slip-joint pliers, install lockwire (V) into screws (S).

14. Using fingers, connect electrical lead (W) to capacitor and housing electrical connector (X) by pushing in.

15. Refill fuel tank (TM 5-5420-202-10).

16. Check fuel pump operation (TM 5-5420-202-10).

17. Install powerplant (page 5-14).



End of Task

TA249267

FUEL TANK CAPACITOR AND HOUSING ASSEMBLY REPAIR (Sheet 1 of 1)

TOOLS: Flat-tip screwdriver

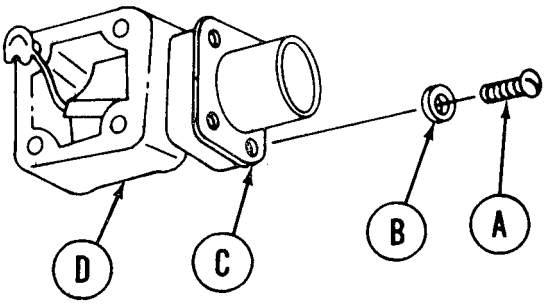
PRELIMINARY PROCEDURE: Remove capacitor and housing assembly (page 10-316 for right side, page 10-321 for left side)

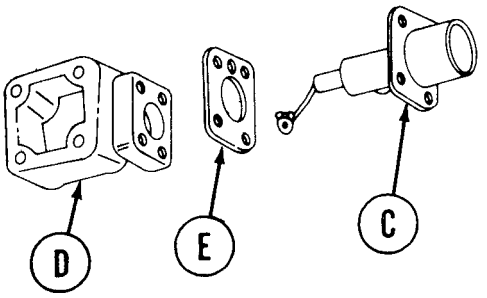
SUPPLIES: Gasket

DISASSEMBLY:

1. Using screwdriver, remove four screws (A) and washers (B) holding capacitor and connector assembly (C) to housing (D).

2. Separate capacitor, connector assembly (C), and gasket (E) from housing (D). Throw gasket away.



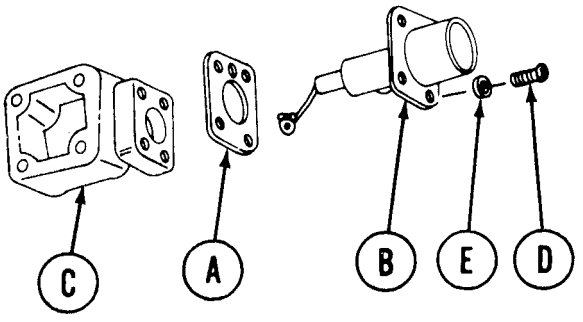


ASSEMBLY:

1. Position new gasket (A) and connector (B) on housing (B).

2. Using screwdriver, install four screws (D) and washers (E).

3. Install capacitor and housing assembly (page 10-318 for right side, page 10-324 for left side).



End of Task

TA249268

CHAPTER 11

TRANSMISSION AND SHIFTING MAINTENANCE

INDEX

SHIFTING CONTROL AND RELATED PARTS REPAIR AND REPLACEMENT (Sheet 1 of 14)

PROCEDURE INDEX

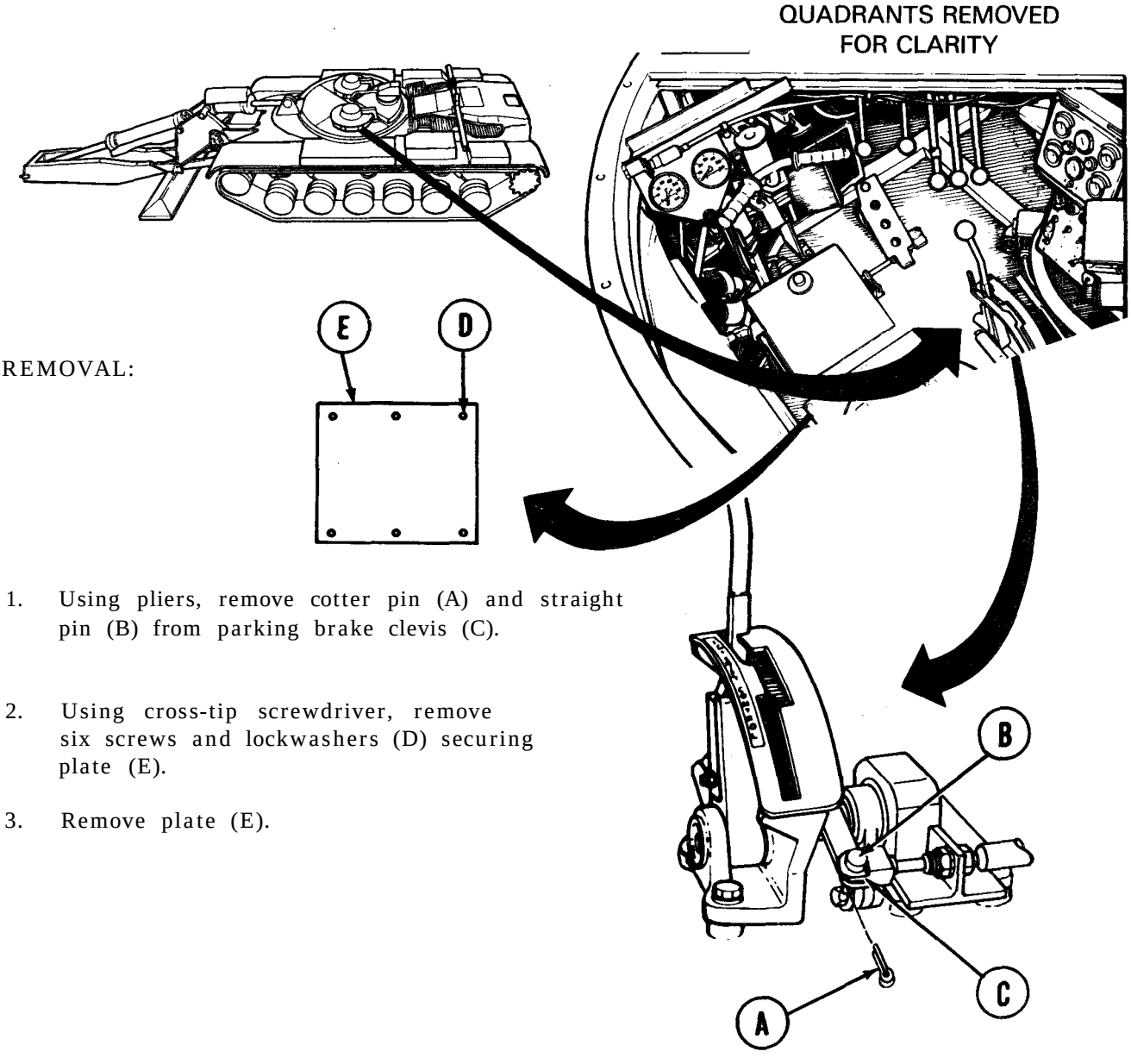
TOOLS:
1/2 in. combination box and open end wrench
7/16 in. combination box and open end wrench
9/16 in. combination box and open end wrench
3/4 in. combination box and open end wrench
Ratchet with 1/2 in. drive
9/16 in. socket with 1/2 in. drive
10 in. extension with 1/2 in. drive
2 lb. hammer
1/8 in. drive punch
1/4 in. drive punch
1/8 in. tapered steel drift
3/4 in. brass drift
1 in. brass drift
Wooden block
Slip joint pliers
8 in. flat-tip screwdriver
Vise
4 in. cross-tip screwdriver

TA249269

SHIFTING CONTROL AND RELATED PARTS REPAIR AND REPLACEMENT (Sheet 2 of 14)

SUPPLIES
Cotter pins (3 required)
Pencil (Item 71, Appendix D)
1/2 in. masking tape (Item 58, Appendix D)
Lockwashers (14 required)

PRELIMINARY PROCEDURES:
Block track to prevent vehicle movement (TM 5-5420-202-10)
Put shift in neutral "N" (TM 5-5420-202-10)



REMOVAL:

1. Using pliers, remove cotter pin (A) and straight pin (B) from parking brake clevis (C).
2. Using cross-tip screwdriver, remove six screws and lockwashers (D) securing plate (E).
3. Remove plate (E).

Go on to Sheet 3

TA249270

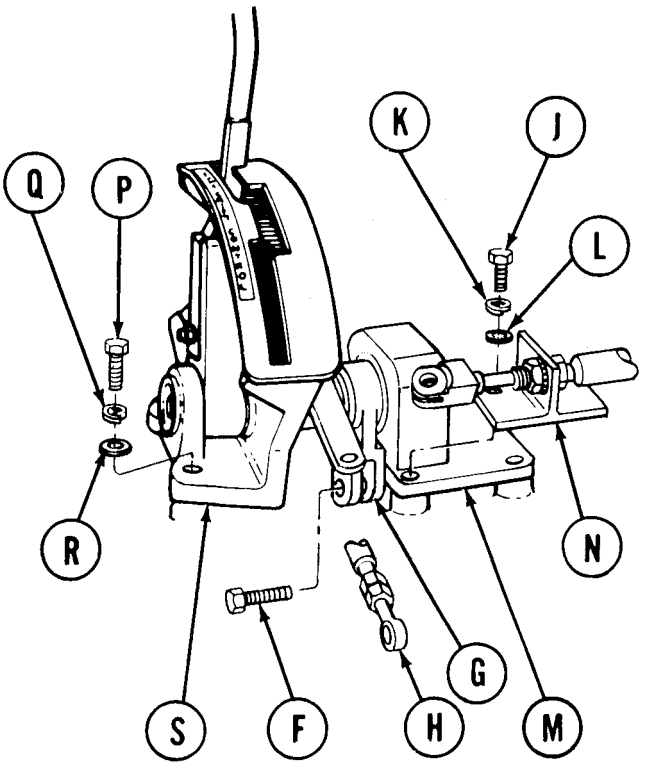
SHIFTING CONTROL AND RELATED PARTS REPAIR AND REPLACEMENT (Sheet 3 of 14)

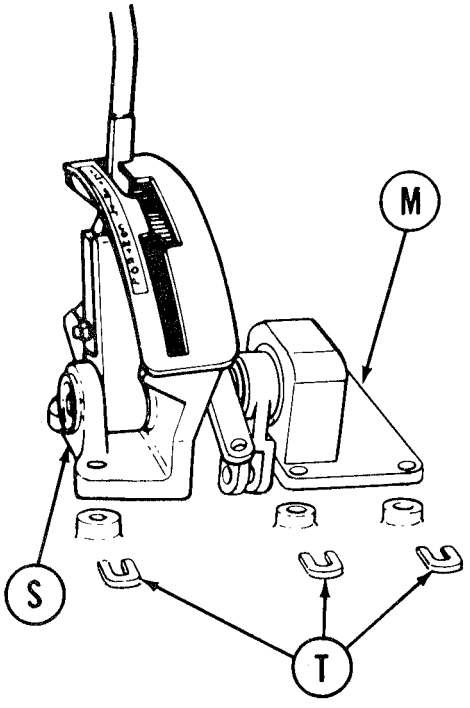
4. Using 9/16 inch wrench, remove bolt (F) securing link (G) to rod (H). Let rod (H) drop below floor.

5. Using socket and extension, remove four screws (J), lockwashers (K), and flat washers (L) from bracket assembly (M).

6. Using socket and extension, tighten screws installed in steps 3, 4, and 5, alternately.

7. Using socket and extension, remove three screws (P), lockwashers (Q), and flat washers (R) from base assembly (S).





8. Remove base assembly (S) and bracket assembly (M) as a single unit from vehicle.

9. Using pencil and masking tape, tag all shims (T) found under bases (S) and (M).

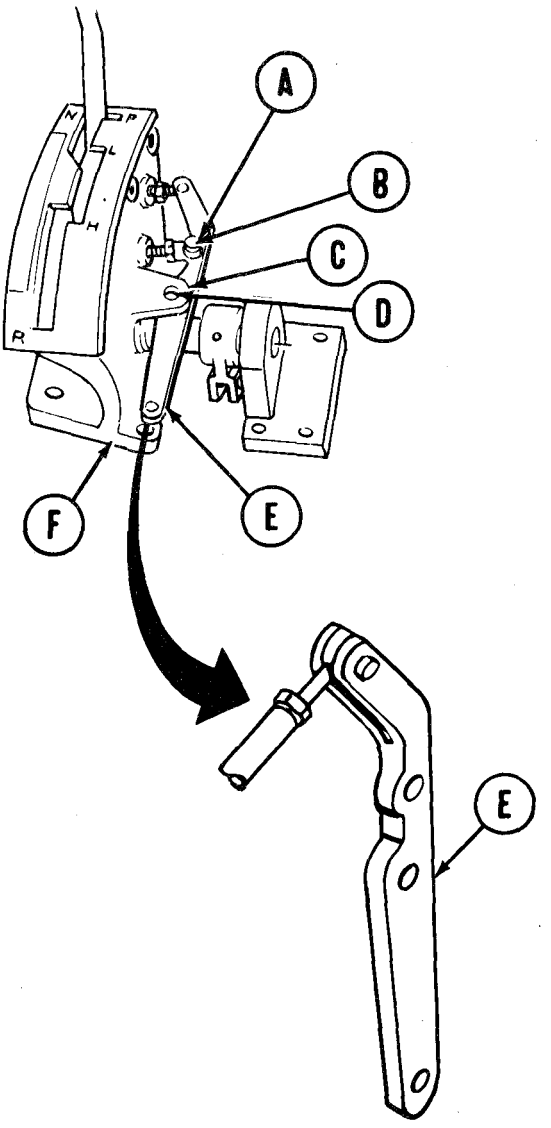
Go on to Sheet 4

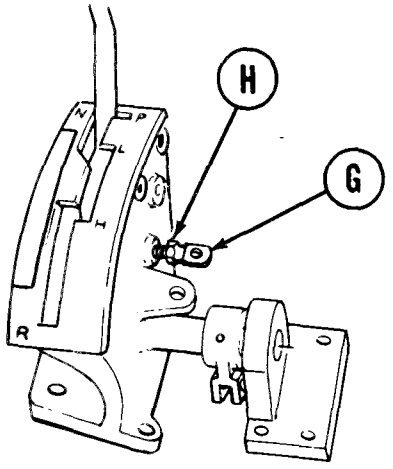
TA249271

SHIFTING CONTROL AND RELATED PARTS REPAIR AND REPLACEMENT (Sheet 4 of 14)

DISASSEMBLY:

1. Using pliers, remove cotter pin (A) (hidden) and headed straight pin (B).
2. Using hammer and 1/8 inch punch, drive out spring pin (C) from base assembly clevis and straight pin (D).
3. Remove straight pin (D).
4. Remove parking brake lever (E) and attached hardware from base assembly (F).





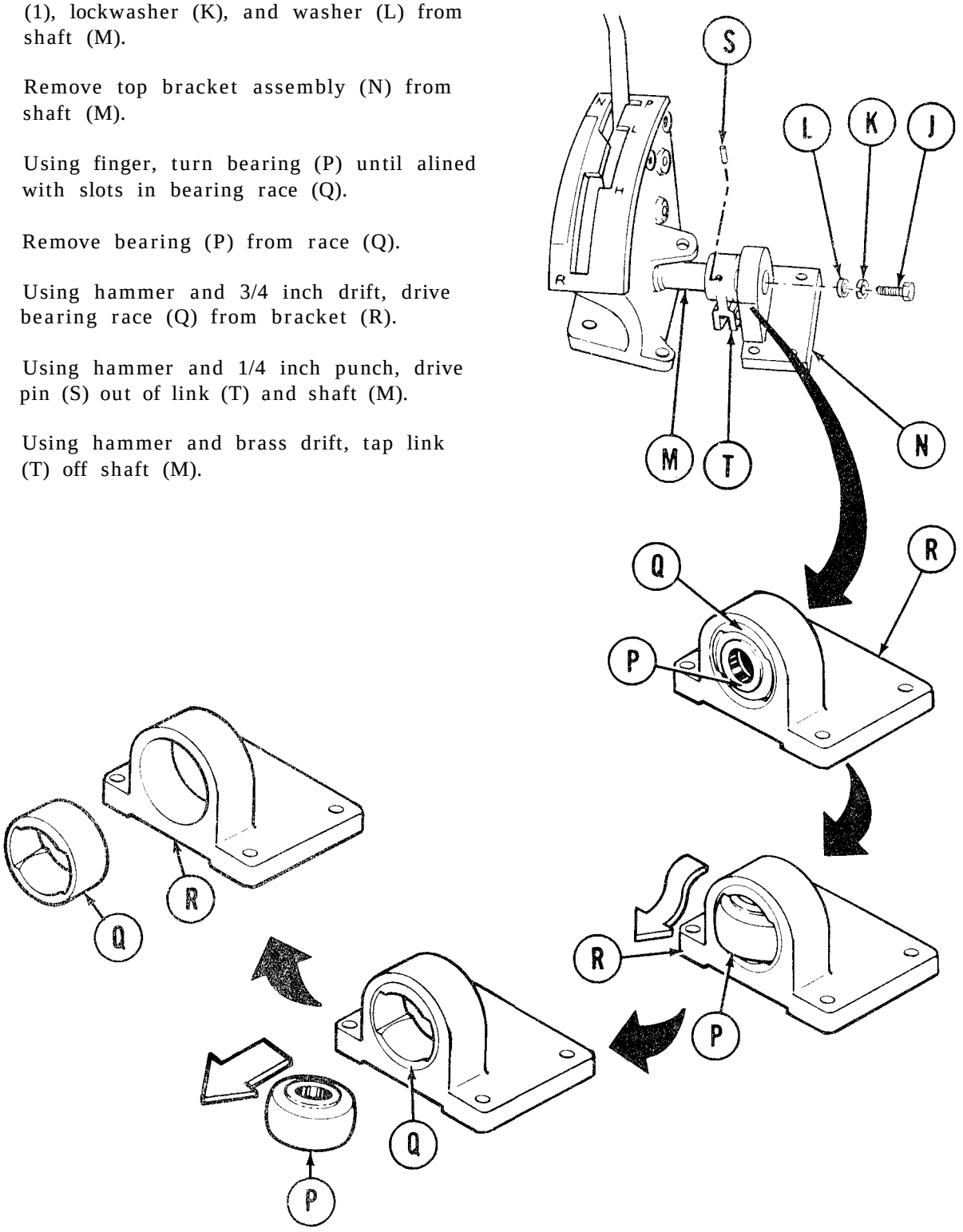
5. Holding clevis (G) with 3/4 inch open end wrench, use 1/2 inch open end wrench to back off nut (H). Remove clevis (G) and nut (H).

Go on to Sheet 5

TA249272

SHIFTING CONTROL AND RELATED PARTS REPAIR AND REPLACEMENT (Sheet 5 of 14)

6. Using 9/16 inch wrench, remove screw (1), lockwasher (K), and washer (L) from shaft (M).
7. Remove top bracket assembly (N) from shaft (M).
8. Using finger, turn bearing (P) until alined with slots in bearing race (Q).
9. Remove bearing (P) from race (Q).
10. Using hammer and 3/4 inch drift, drive bearing race (Q) from bracket (R).
11. Using hammer and 1/4 inch punch, drive pin (S) out of link (T) and shaft (M).
12. Using hammer and brass drift, tap link (T) off shaft (M).



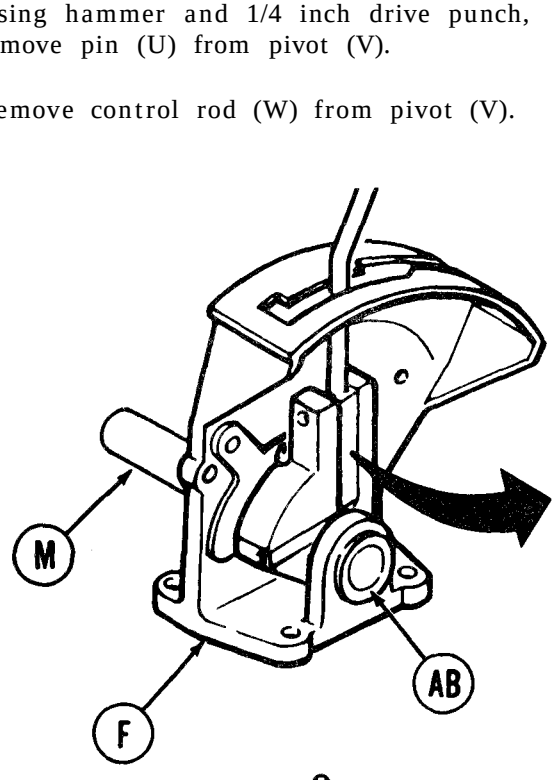
Go on to Sheet 6

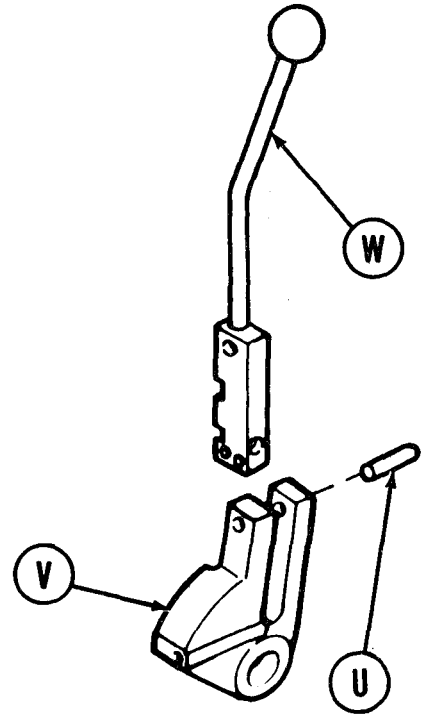
TA249273

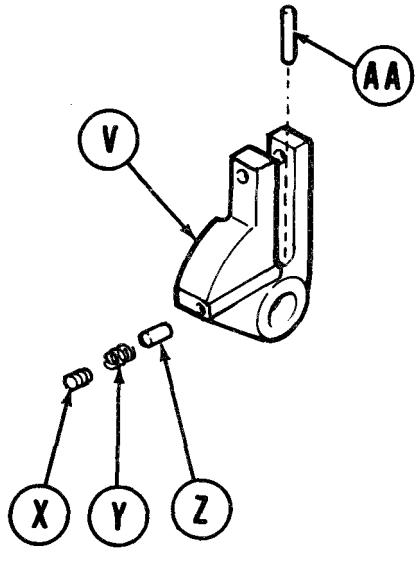
SHIFTING CONTROL AND RELATED PARTS REPAIR AND REPLACEMENT (Sheet 6 of 14)

13. Using hammer and 1/4 inch drive punch, remove pin (U) from pivot (V).

14. Remove control rod (W) from pivot (V).







15. Using flat-tip screwdriver, remove adjuster (x), spring (Y), and plunger (Z) from pivot (V).

16. Using hammer and 1/4 inch punch, remove pin (AA).

17. Using hammer and 1 inch brass drift, drive shaft (M) into base assembly (F) enough to free pivot (V) and bearing (AB).

18. Remove bearing (AB), pivot (V), and shaft (M).

INSPECTION:

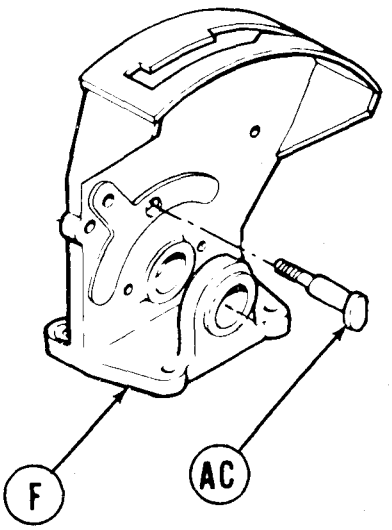
Inspect pivot (V), adjuster (X), spring (Y), and plunger (Z) for damage or wear. Replace as required.

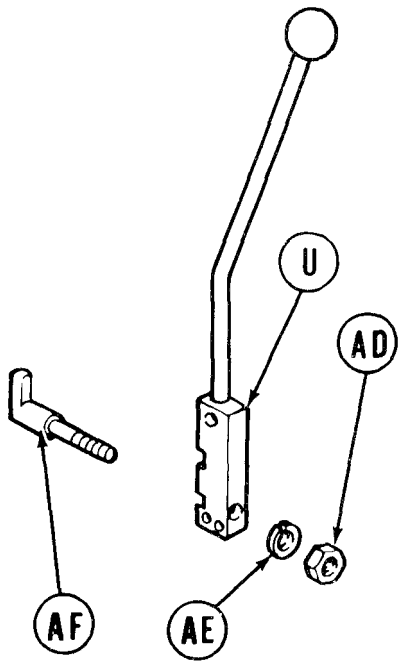
Go on to Sheet 7

TA249274

SHIFTING CONTROL AND RELATED PARTS REPAIR AND REPLACEMENT (Sheet 7 of 14)

19. Remove bolt (AC) from bracket (F).





20. Using 7/16 inch wrench, remove nut (AD) and lockwasher (AE).

21. Using pliers, remove fastener (AF) from control rod (U).

INSPECTION:

1. Inspect fastener (AF) for wear and damage. Replace if required.

2. Inspect bolt (AC) for damage or wear. Replace if required.

Go on to Sheet 8

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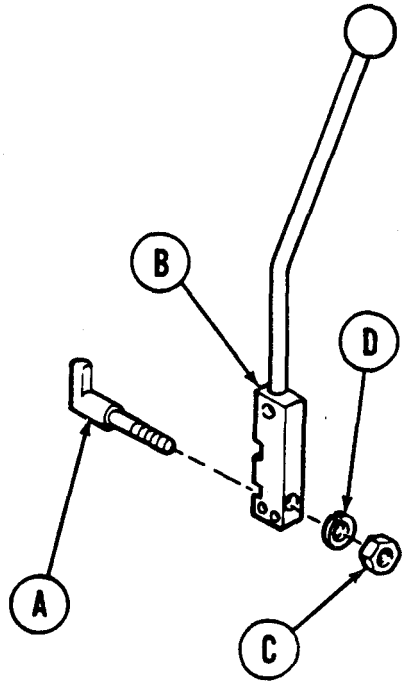
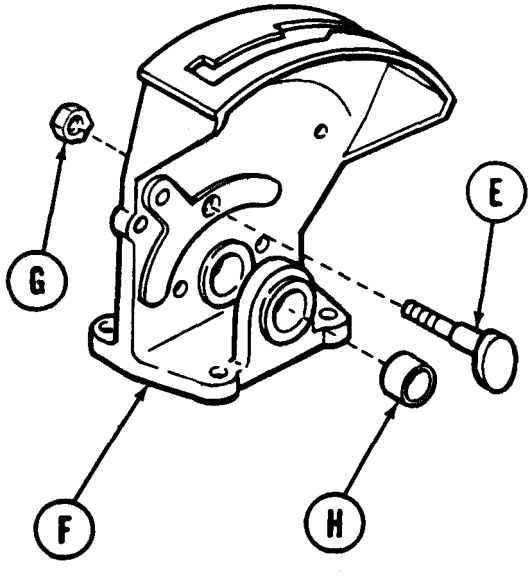
SHIFTING CONTROL AND RELATED PARTS REPAIR AND REPLACEMENT (Sheet 8 of 14)

ASSEMBLY:

1. Position fastener (A) thru control rod (B).
2. Install nut (C) and lockwasher (D).
3. Using 7/16 inch wrench, tighten nut (C).



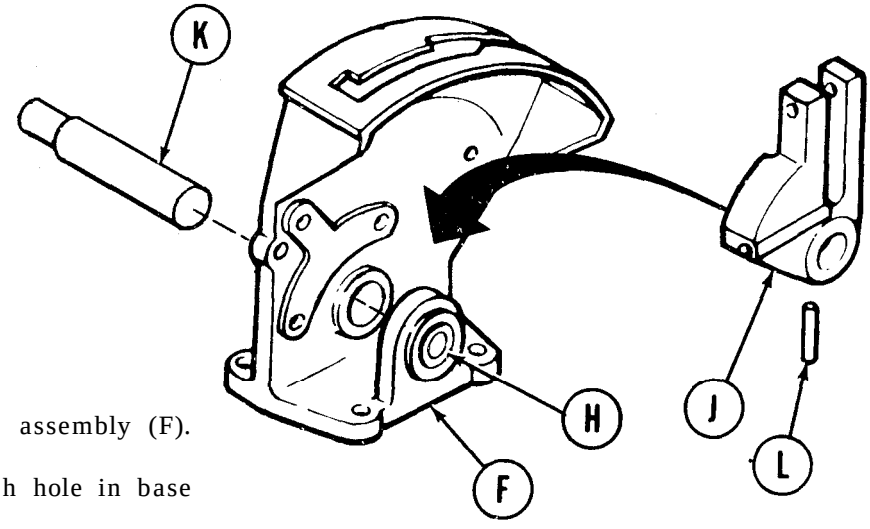


4. Position bolt (E) through base assembly (F) and install nut (G). Nut (G) will be tightened when parking brake lever is installed.
5. Using hammer and wooden block, tap bearing (H) into base assembly (F). Bearing must not extend beyond base assembly on either side.

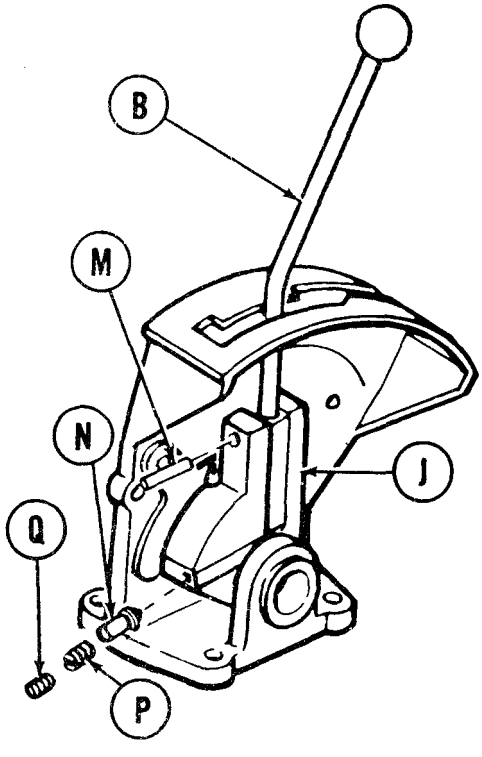
Go on to Sheet 9

TA249276

SHIFTING CONTROL AND RELATED PARTS REPAIR AND REPLACEMENT (Sheet 9 of 14)



6. Position pivot (J) on base assembly (F).
7. Aline hole in pivot (J) with hole in base assembly (F).
8. Using hammer and wooden block, insert shaft (K) into base assembly (H) through pivot (J) and into bearing (H). Use care not to damage bearing (H).
9. Using 1/8 inch tapered steel drift, aline shaft pin hole with pivot pin hole.
10. Using hammer and 3/4 inch brass drift, install pin (L).



11. Position control rod lever (B) through pivot (J).
12. Using hammer and 1/4 inch punch, install pin (M).
13. Using flat-tip screwdriver, install plunger (N), spring (P), and adjuster (Q).

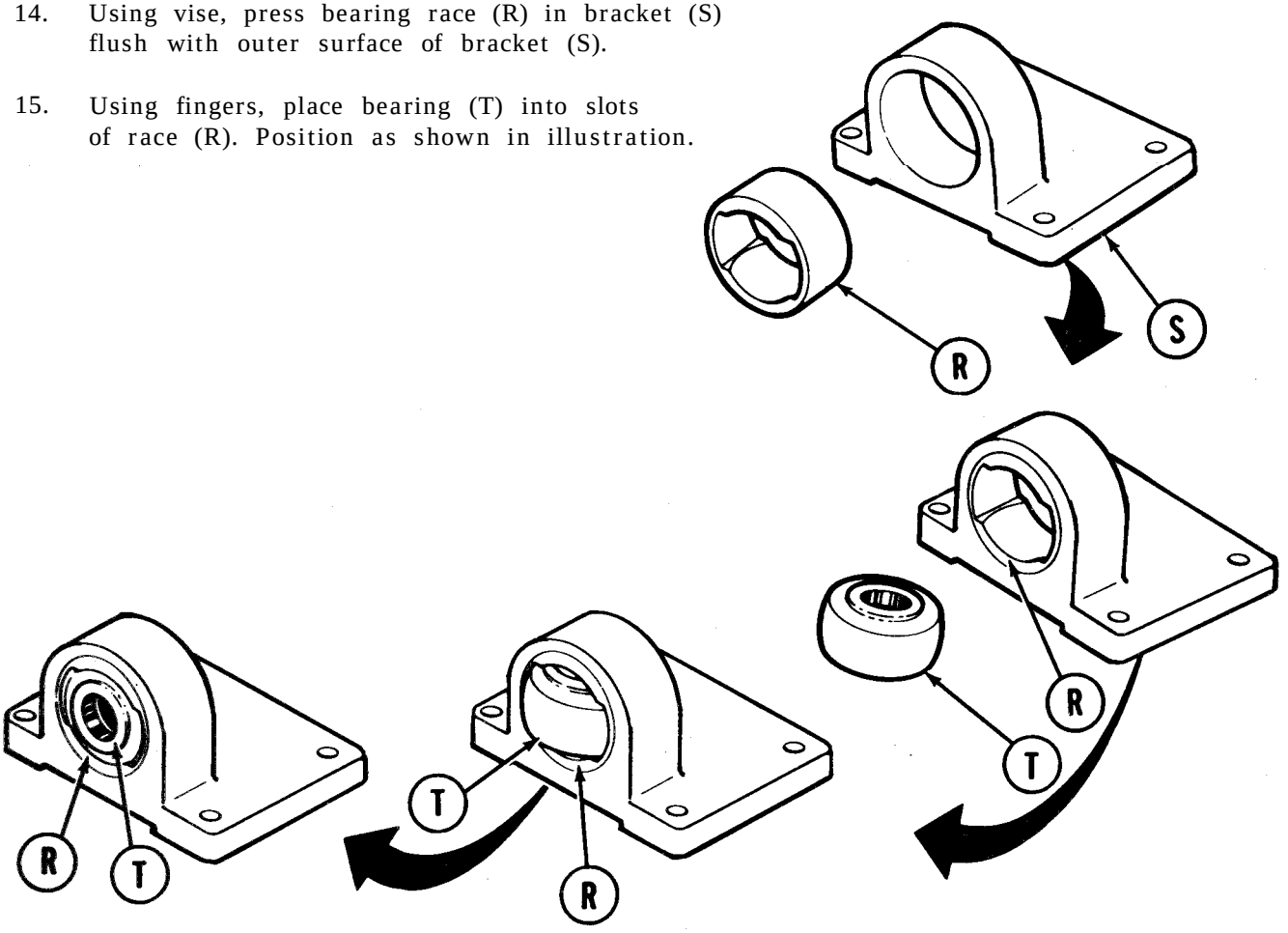
Go on to Sheet 10

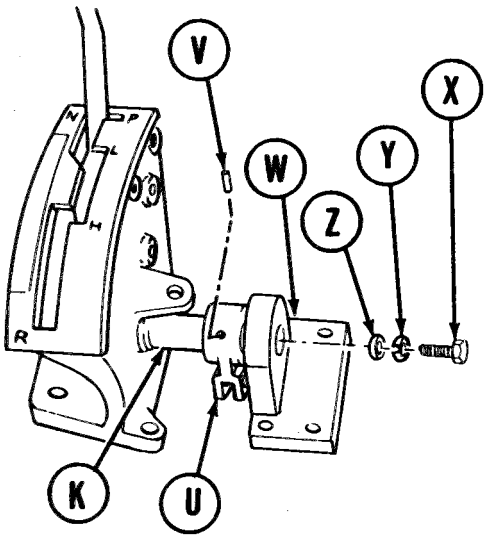
TA249277

SHIFTING CONTROL AND RELATED PARTS REPAIR AND REPLACEMENT (Sheet 10 of 14)

14. Using vise, press bearing race (R) in bracket (S) flush with outer surface of bracket (S).

15. Using fingers, place bearing (T) into slots of race (R). Position as shown in illustration.





16. Using hammer and brass drift, tap link (U) into place on shaft (K).

17. Using hammer and 1/8 inch punch, install pin (V) through link (U) and shaft (K).

18. Place bracket assembly (W) on shaft (K).

19. Using 9/16 inch wrench, install screw (X), lockwasher (Y), and washer (Z) on shaft (K).

Go on to Sheet 11

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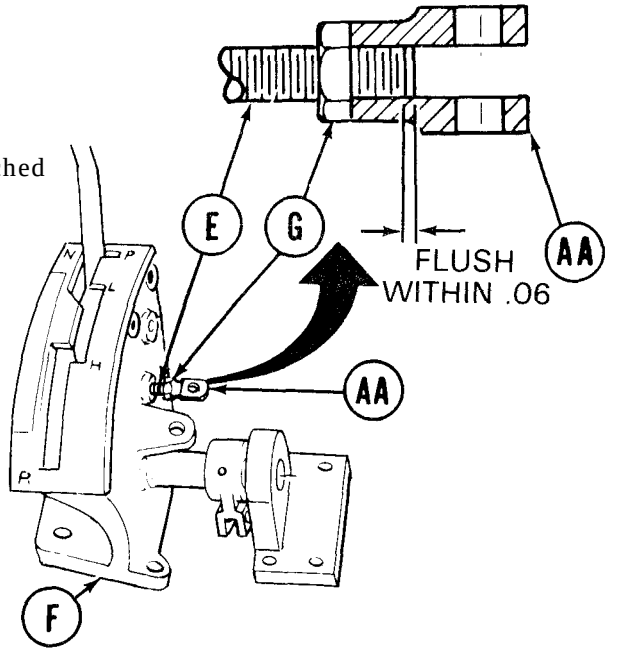
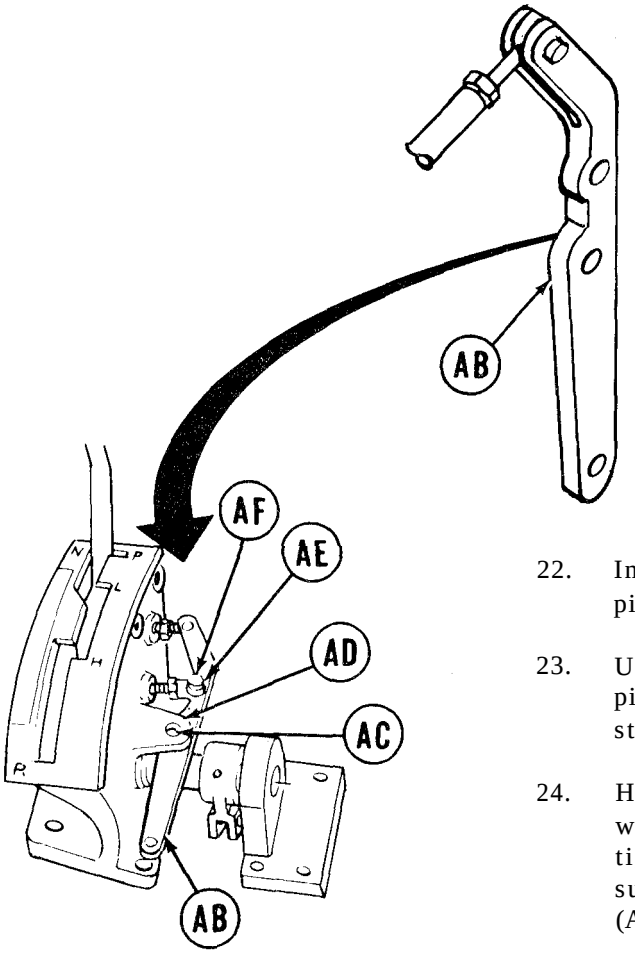
SHIFTING CONTROL AND RELATED PARTS REPAIR AND REPLACEMENT (Sheet 11 of 14)

20. Manually install clevis (AA) on bolt (E) to the dimension shown.

21. Position parking brake lever (AB) with attached hardware on base assembly (F), making sure that clevis (AA) is alined correctly.





22. Install straight pin (AC), making sure spring pin holes are alined.

23. Using hammer and punch, install spring pin (AD) through base assembly clevis and straight pin (AC).

24. Holding clevis (AA) with 3/4 inch open end wrench, use 1/2 inch open end wrench to tighten nut (G) against clevis (AA). Make sure clevis (AA) and parking brake lever (AB) do not bind.

25. Install headed straight pin (AE) through clevis (AA) and parking brake lever (AB) and secure with new cotter pin (AF).

Go on to Sheet 12

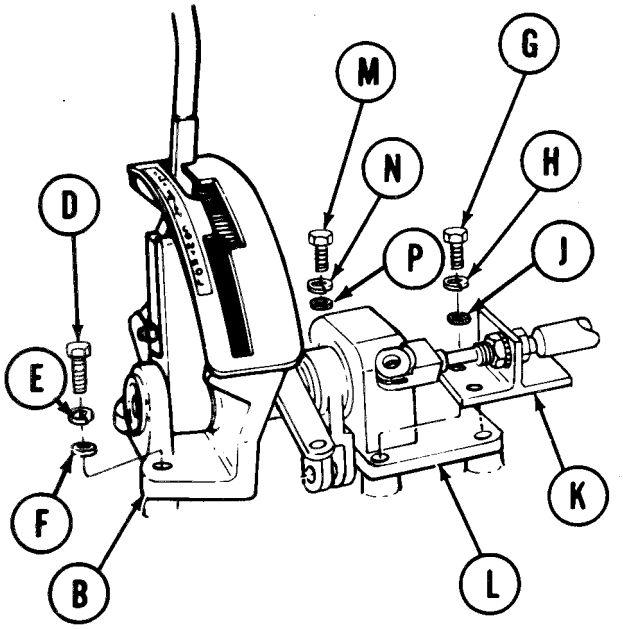
TA249279

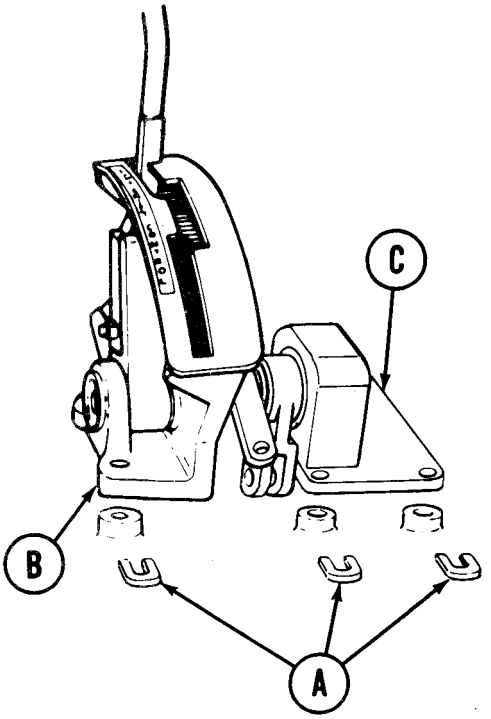
SHIFTING CONTROL AND RELATED PARTS REPAIR AND REPLACEMENT (Sheet 12 of 14)

INSTALLATION:

1. Position all shims (A) on hull mounting surfaces exactly as tagged during removal.

2. Position base assembly (B) and bracket assembly (C) on shims (A).





3. Install three screws (D), lockwashers (E), and flat washers (F) finger tight through base assembly (B).

4. Install two screws (G), lockwashers (H), and flat washers (J) finger tight through parking brake control assembly (K) and bracket assembly (L).

5. Install two more screws (M), lockwashers (N), and flat washers (P) finger tight in bracket assembly (L).

Go on to Sheet 13

TA249280

SHIFTING CONTROL AND RELATED PARTS REPAIR AND REPLACEMENT (Sheet 13 of 14)

6. Using socket, extension, and ratchet, tighten screws installed in steps 3, 4, and 5, alternately.

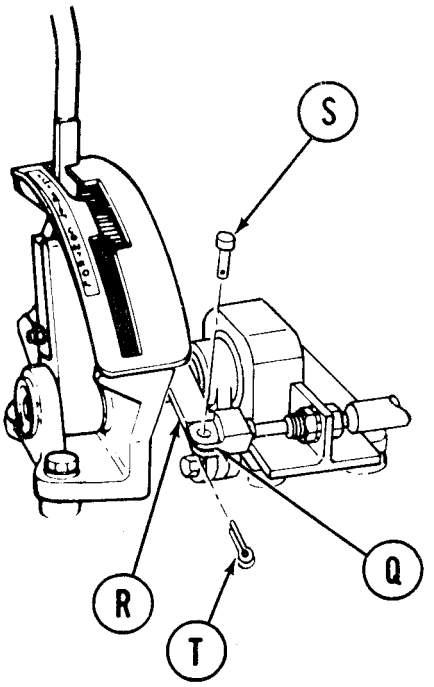
NOTE

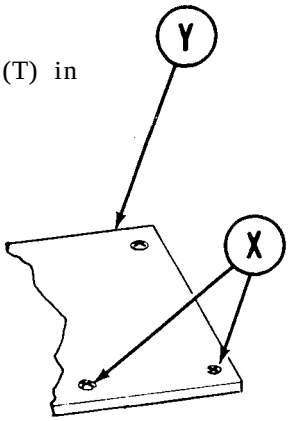
Make sure that components are properly alined. If components bind, use shims as required to make sure of proper alinement and freedom of movement.

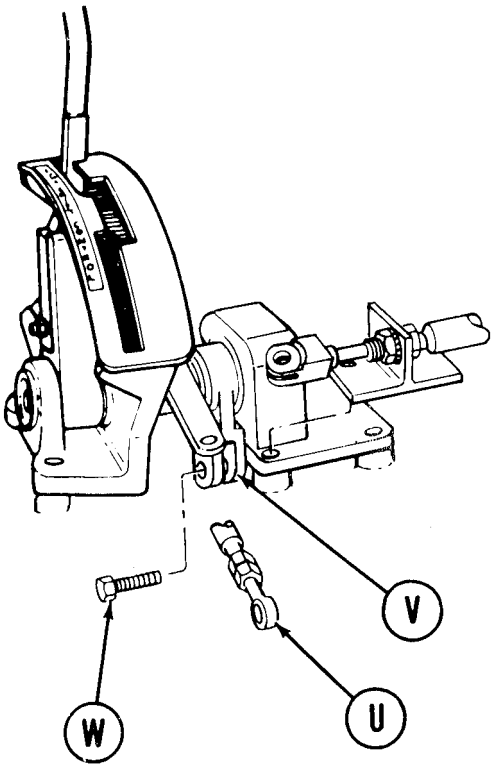
7. Position brake control clevis (Q) over brake lever (R).

8. Install straight pin (S) through clevis (Q) and lever (R).

9. Using pliers, install cotter pin (T) in straight pin (S).







10. Place rod end (U) in link clevis (V).

11. Using 9/16 inch wrench, install bolt (W) securing rod end (U) to link (V).

12. Using cross-tip screwdriver, install six screws (X) securing floor plate (Y).

Go on to Sheet 14

TA249281

SHIFTING CONTROL AND RELATED PARTS REPAIR AND REPLACEMENT (Sheet 14 of 14)

13. Perform shifting linkage adjustment (page 11-52).

14. Remove blocking from tracks.

End of Task

FORWARD INBOARD BELL CRANK ASSEMBLY REPLACEMENT (Sheet 1 of 2)

TOOLS: 9/16 in. combination box and open end wrench
Pliers

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Block tracks to prevent vehicle movement (TM 5-5420-202-10)
Remove operators floor access plate (page 17-10)

REMOVAL:

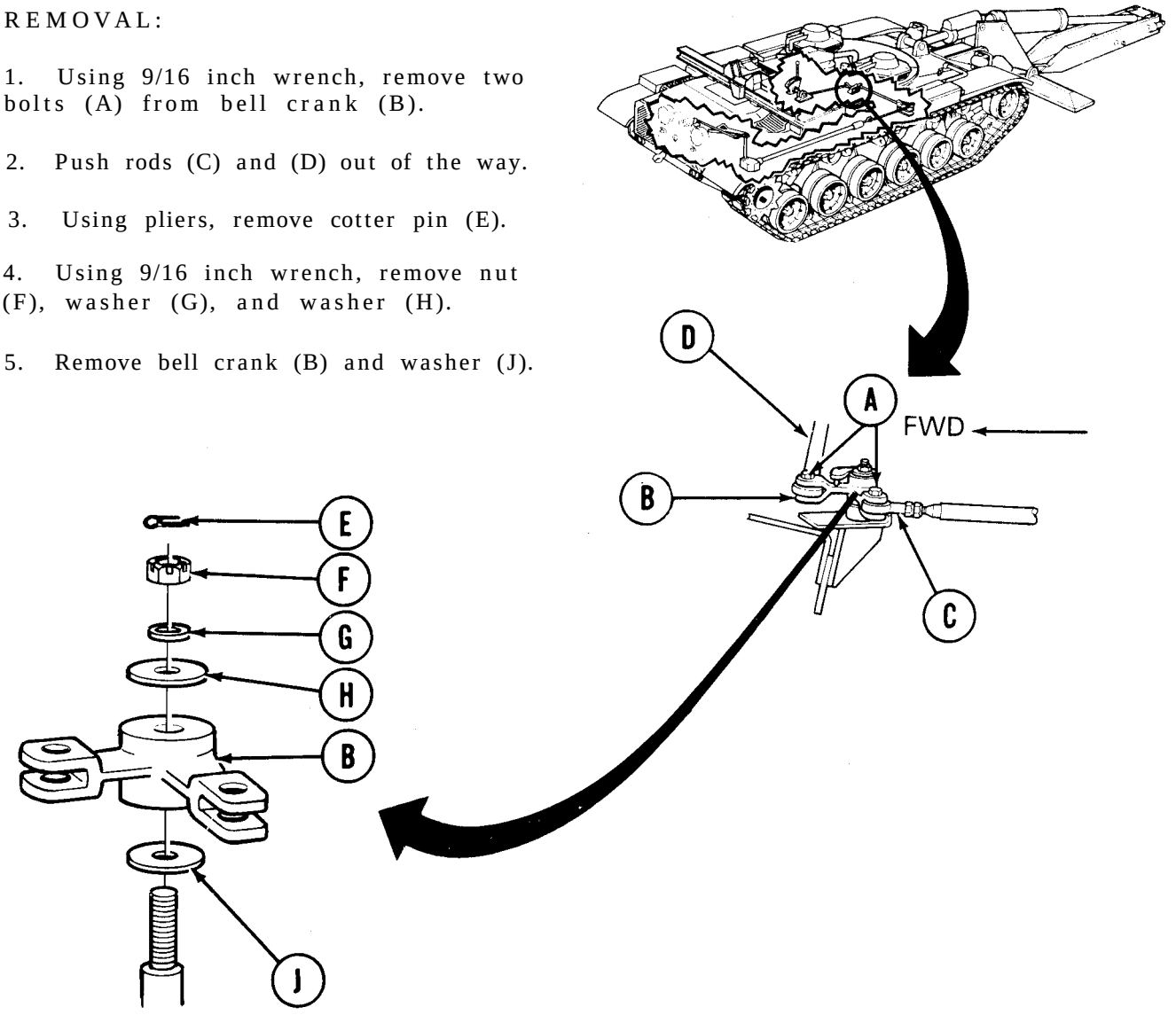
1. Using 9/16 inch wrench, remove two bolts (A) from bell crank (B).

2. Push rods (C) and (D) out of the way.

3. Using pliers, remove cotter pin (E).

4. Using 9/16 inch wrench, remove nut (F), washer (G), and washer (H).

5. Remove bell crank (B) and washer (J).



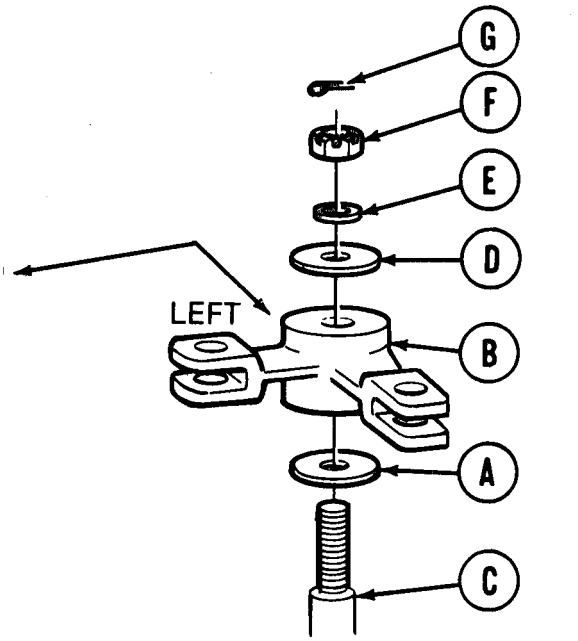
Go on to Sheet 2

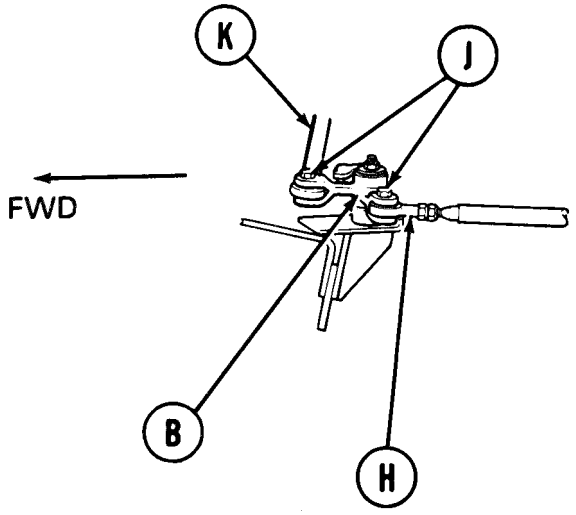
TA249282

FORWARD INBOARD BELL CRANK ASSEMBLY REPLACEMENT (Sheet 2 of 2)

INSTALLATION:

1. Install washer (A) and bell crank (B) on stud (C) with long arm of bell crank (B) to left.
2. Using 9/16 inch wrench, install washer (D), washer (E), and nut (F).
3. Using pliers, install cotter pin (G).
4. Aline rod end (H) in long arm of bell crank (B).
5. Using 9/16 inch wrench, install bolt (J) in bell crank (B) through rod end (H).
6. Aline rod end (K) in short arm of bell crank (B).
7. Using 9/16 inch wrench, install bolt (J) in bell crank (B) through rod end (K).
8. Adjust shifting controls and linkages (page 11-52).
9. Install operators floor access plate (page 17-10).
10. Remove blocks from tracks.





End of Task

TA249283

FORWARD OUTBOARD LEVER ASSEMBLY REPLACEMENT (Sheet 1 of 3)

TOOLS: 9/16 in. combination box and open end wrench
Torch outfit, cutting and welding
Grinder
C-clamp

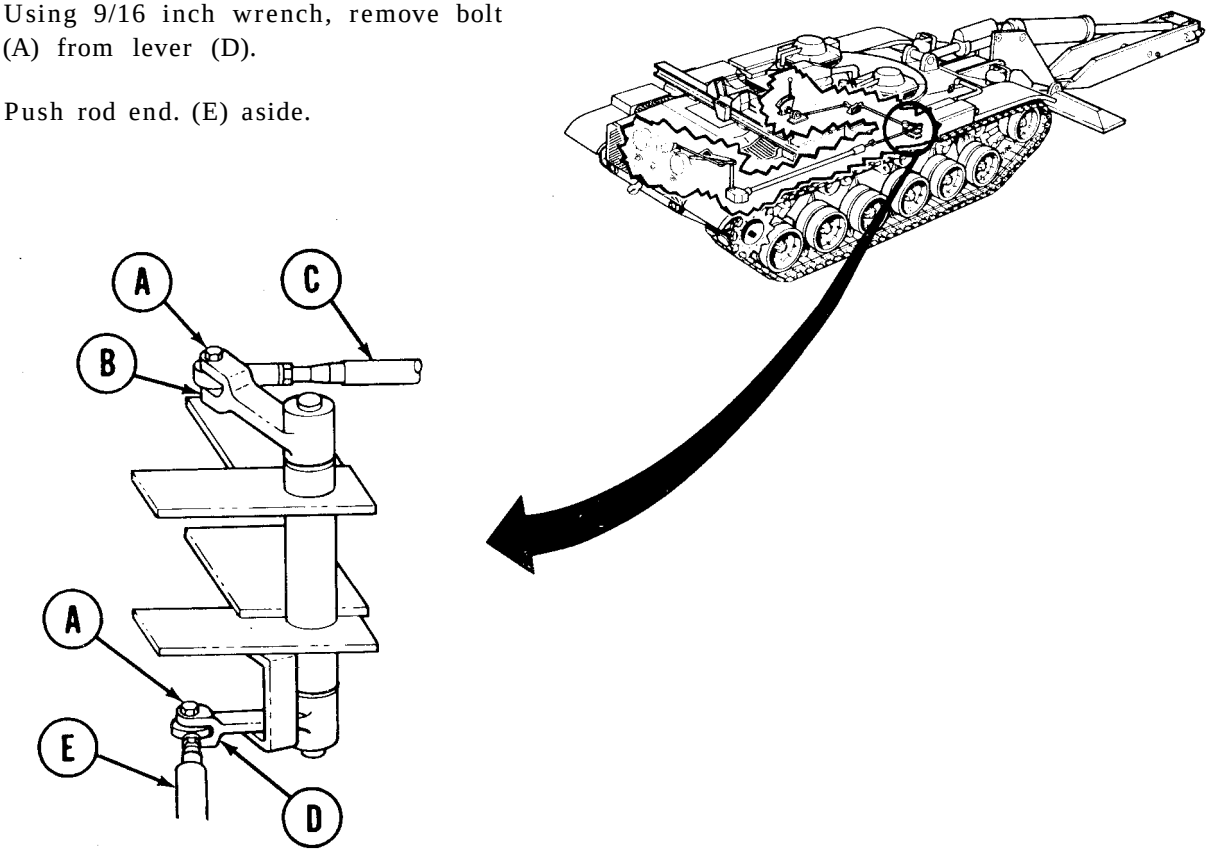
SUPPLIES: Welding rods
Goggles (Item 70, Appendix D)
Gloves (Item 69, Appendix D)

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Block tracks to prevent vehicle movement

REMOVAL:

1. Using 9/16 inch wrench, remove bolt (A) from lever (B).
2. Push rod end (C) aside.
3. Using 9/16 inch wrench, remove bolt (A) from lever (D).
4. Push rod end. (E) aside.



Go on to Sheet 2

TA249284

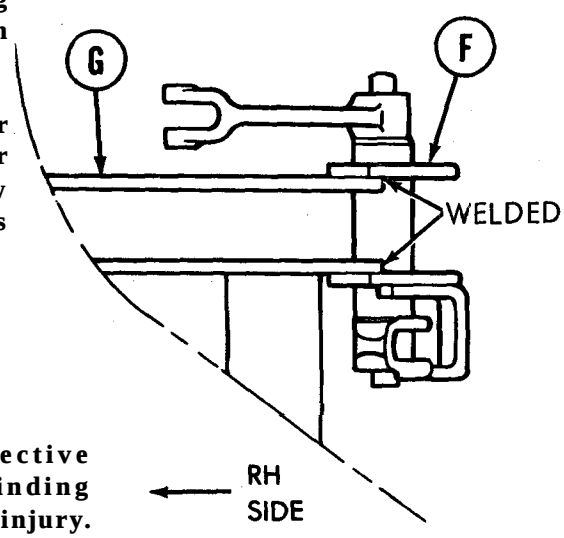
FORWARD OUTBOARD LEVER ASSEMBLY REPLACEMENT (Sheet 2 of 3)

WARNING

Use effective chip guarding and personal protective equipment (goggles/shield, gloves, etc.) during cutting and welding operations. Failure to do so could result in personal injury.

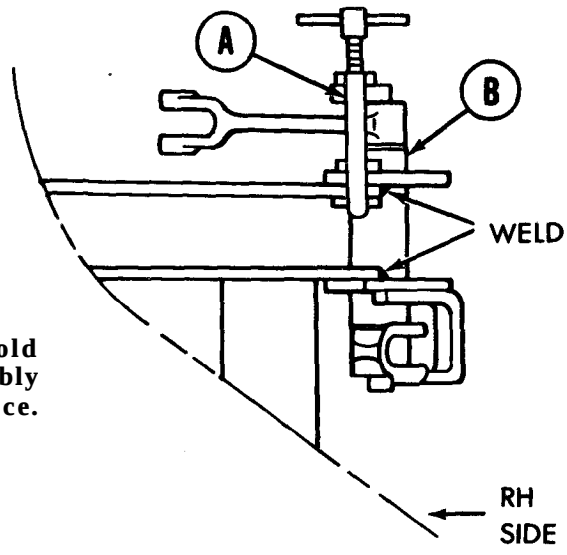
Remove flammable materials, such as spilled fuel or oil, from immediate area. Place wet rags or nonflamable cloth around area being welded. Follow safety procedures as listed in TM 9-237 "Operator's Manual, Welding Theory and Practice."

5. Using torch, remove lever assembly (F) from supports (G) which are welded to hull.



WARNING

Use effective chip guarding and personal protective equipment (goggles/shield, gloves, etc.) during grinding operations. Failure to do so could result in personal injury.



NOTE

Use grinder to clean old welds so that new assembly can be welded in place.

INSTALLATION:

1. Using C-clamp (A), clamp new lever assembly (B) in place.

2. Using torch, weld new lever assembly (B) in place.

Go on to Sheet 3

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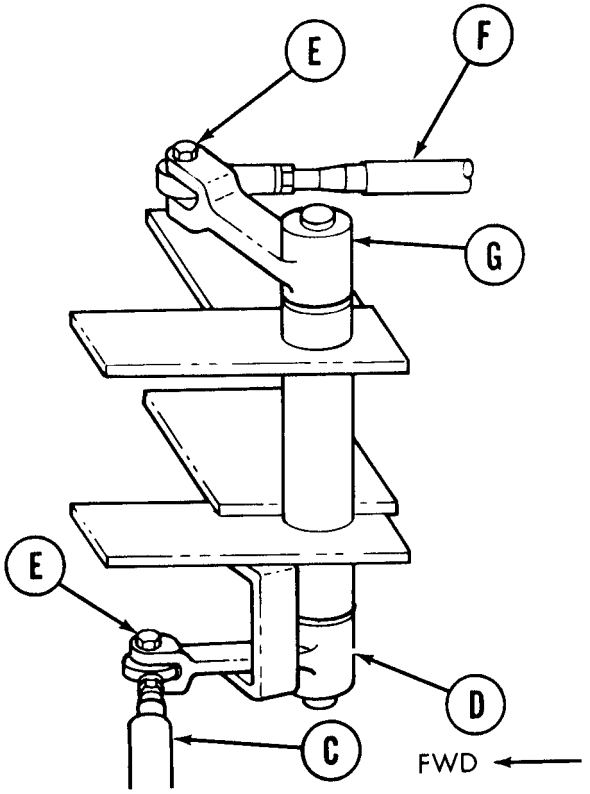
FORWARD OUTBOARD LEVER ASSEMBLY REPLACEMENT (Sheet 3 of 3)

3. Position rod end (C) in lever (D).
4. Using 9/16 inch wrench, install bolt (E) in lever (D).
5. Position rod end (F) in lever (G).
6. Using 9/16 inch wrench, install bolt (E) in lever (G).
7. Adjust shifting controls and linkages (page 11-53).
8. Remove blocks from tracks.

End of Task



TA249286

SHIFTING FORWARD CROSS TUBE REPLACEMENT (Sheet 1 of 4)

PROCEDURE INDEX

TOOLS: 9/16 in. combination box and open end wrench (2 required)
Steel tape
Torque wrench with 3/8 in. drive (0-200 lb-in.)
9/16 in. crowfoot adapter with 3/8 in. drive

SUPPLIES: Paper (Item 72, Appendix D)
Pencil (Item 71, Appendix D)

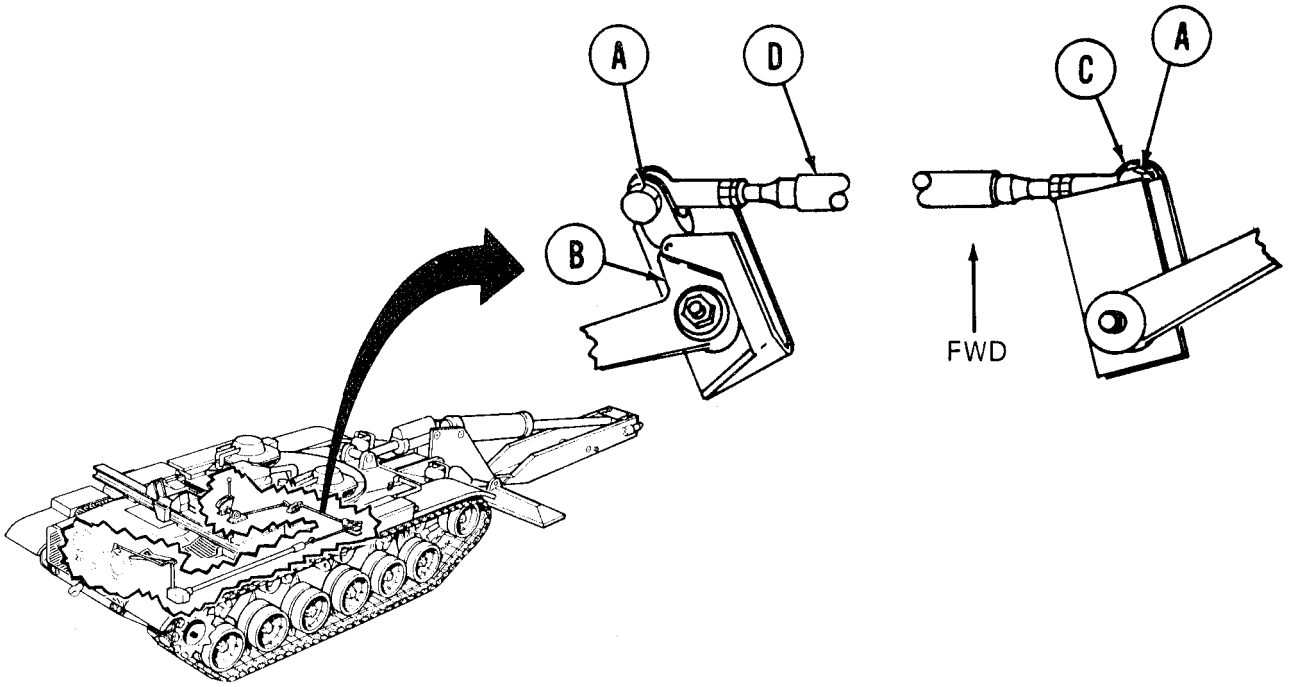
REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Block tracks to prevent vehicle movement (TM 5-5420-202-10)

Go on to sheet 2

SHIFTING FORWARD CROSS TUBE REPLACEMENT (Sheet 2 of 4)

REMOVAL:



1. Using 9/16 inch wrench, remove bolts (A) from bell crank (B) and lever (C) at each end of tube (D).
2. Remove tube (D).
3. Using steel tape, measure center-to-center distance of rod end holes.
4. Using pencil and paper, write down center-to-center distance.

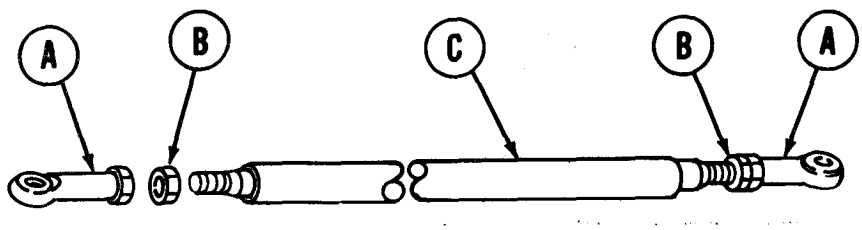
Go on to Sheet 3

TA249288

SHIFTING FORWARD CROSS TUBE REPLACEMENT (Sheet 3 of 4)

DISASSEMBLY:

1. Holding rod ends (A) with 9/16 inch wrench, use 9/16 inch wrench to back off nuts (B).
2. Using 9/16 inch wrench, remove rod ends (A) and nuts (B) from tube (C).



INSPECTION:

Inspect rod ends (A), nuts (B), and tube (C) for damage or wear. Replace if required.

ASSEMBLY:

Manually install nuts (B) and rod ends (A) on tube (C).

Go on to Sheet 4

TA249289

SHIFTING FORWARD CROSS TUBE REPLACEMENT (Sheet 4 of 4)

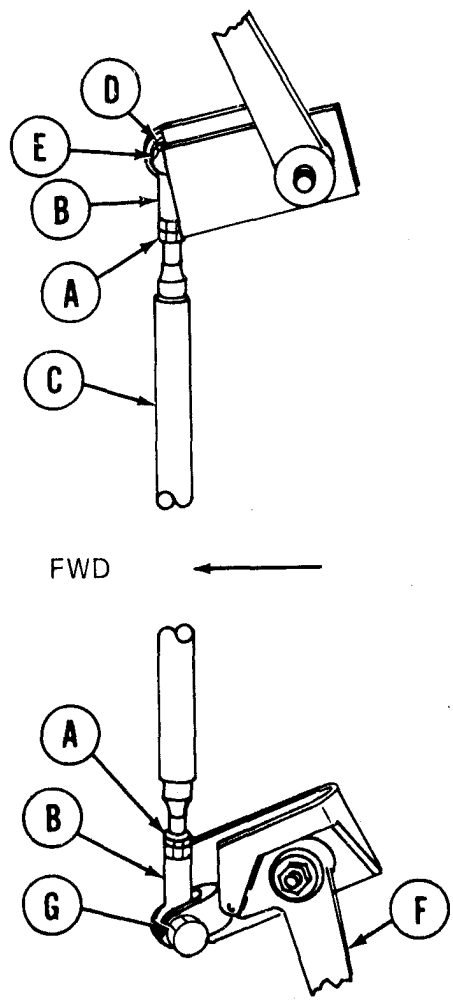
ADJUSTMENT:

NOTE

When adjusting clevises or rod ends, make certain that threads on control tubes extend past the "U" of the clevis, or past the gage opening in the rod end to ensure a positive grip.

1. Using two 9/16 inch wrenches and steel tape, adjust rod ends to the center-to-center distance measured and recorded in steps 3 and 4 of REMOVAL.

2. Using torque wrench and crowfoot adapter, tighten nuts (A) against each rod end (B) to 16-18 lbs-ft (23-24 N·m).



INSTALLATION:

1. Position one rod end of tube (C) in lever (D).
2. Using 9/16 inch wrench, install bolt (E).
3. Position other rod end of tube (C) in bell crank (F).
4. Using 9/16 inch wrench, install bolt (G).
5. Adjust shifting controls and linkages (page 11-53).
6. Remove blocks from tracks.

End of Task

TA249290

SHIFTING CONTROL TO FORWARD INBOARD BELL CRANK ASSEMBLY ROD REPLACEMENT (Sheet 1 of 5)

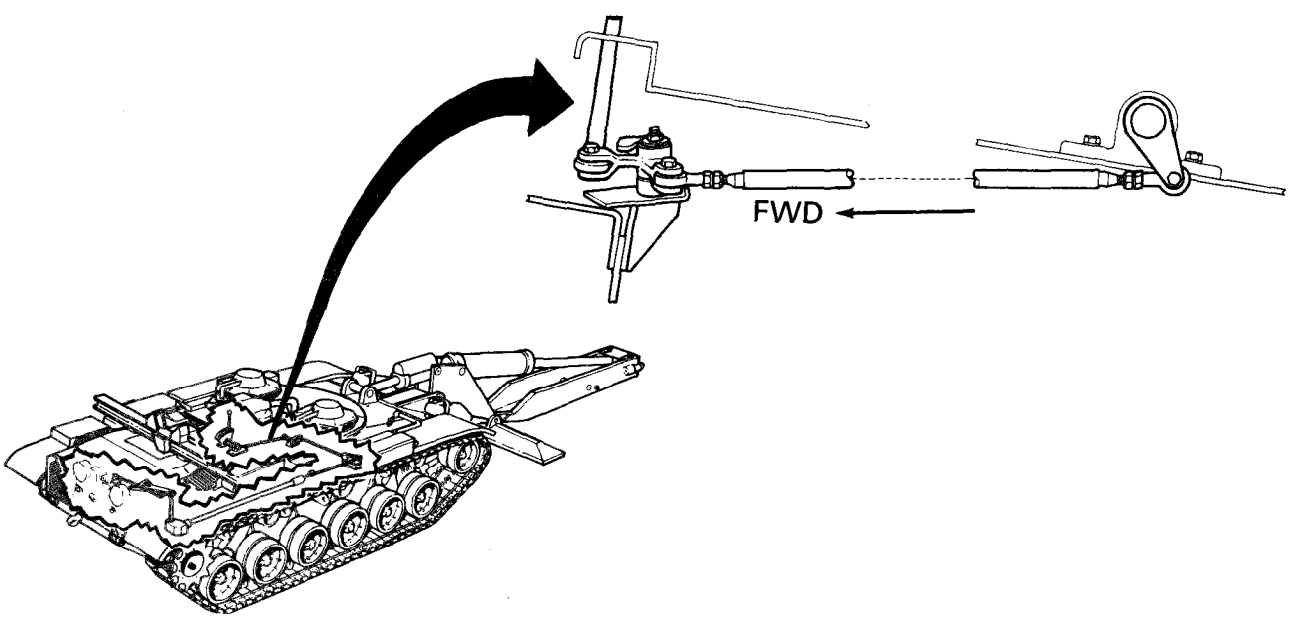
PROCEDURE INDEX

TOOLS: 9/16 in. crowfoot adapter with 1/2 in. drive
9/16 in. combination box and open end wrench (2 required)
Steel tape
Torque wrench with 1/2 in. drive (0-175 lb-ft)
6 in. cross-tip screwdriver

SUPPLIES: Paper (Item 72, Appendix D)
Pencil (Item 71, Appendix D)

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Block tracks to prevent vehicle movement (TM 5-5420-202-10)
Remove operators floor access plate (page 17-10)



TA249291

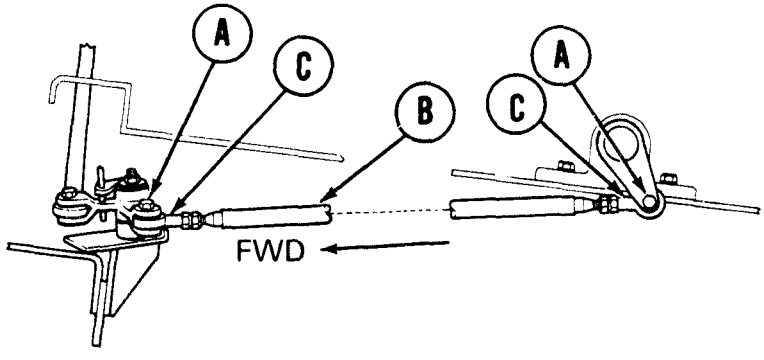
Go on to Sheet 2

SHIFTING CONTROL TO FORWARD INBOARD BELL CRANK ASSEMBLY ROD REPLACEMENT (Sheet 2 of 5)

REMOVAL:

NOTE

Place shifting lever in R position. This will make bolts easier to take out by moving tube forward.



1. Using 9/16 inch wrench, remove two bolts (A).
2. Remove rod (B).
3. Using steel tape, measure center-to-center distance between holes in rod ends (C).
4. Using pencil and paper, write down center-to-center distance.

Go on to Sheet 3

TA249292

SHIFTING CONTROL TO FORWARD INBOARD BELL CRANK ASSEMBLY ROD REPLACEMENT
(Sheet 3 of 5)

DISASSEMBLY:

1. Holding rod ends (A) with 9/1 6 inch wrench, use 9/16 inch wrench to back off nuts (B).

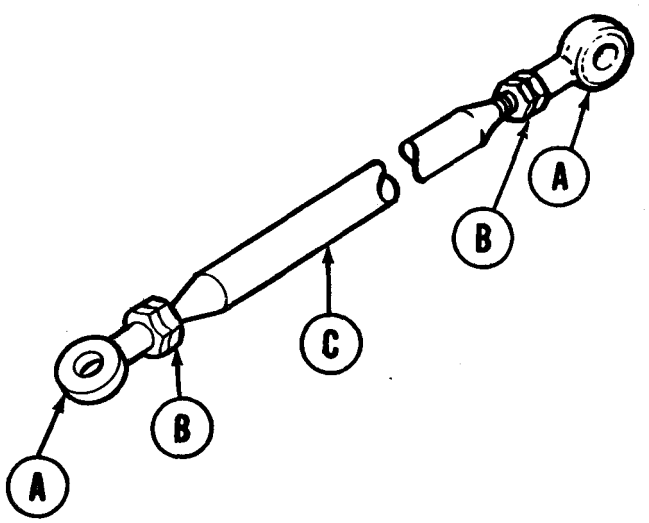
2. Using 9/16 inch wrench, remove rod ends (A) and nuts (B) from rod (C).

lNSPECTION:

Inspect rod ends (A), nuts (B), and rod (C) for wear or damage. Replace if required.

ASSEMBLY:

1. Using fingers, install nuts (B) and rod ends (A) on rod (C).



Go on to Sheet 4

TA249293

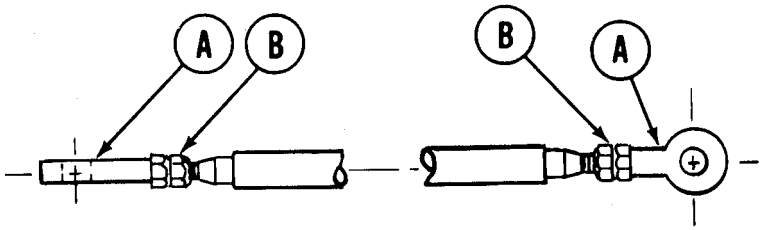
SHIFTING CONTROL TO FORWARD INBOARD BELL CRANK ASSEMBLY ROD REPLACEMENT (Sheet 4 of 5)

ADJUSTMENT:

NOTE

When adjusting rod ends, make certain that threads on control tubes extend past the gage opening in the rod end to ensure a positive grip.

1. Using two 9/16 inch wrenches and steel tape, adjust rod ends (A) to obtain the same center-to-center distance between holes as measured and recorded in steps 5 and 6, REMOVAL.



2. Using torque wrench and crow foot adapter, tighten nuts (B) against rod ends (A) to 16-18 lb-ft (23-24 N·m).

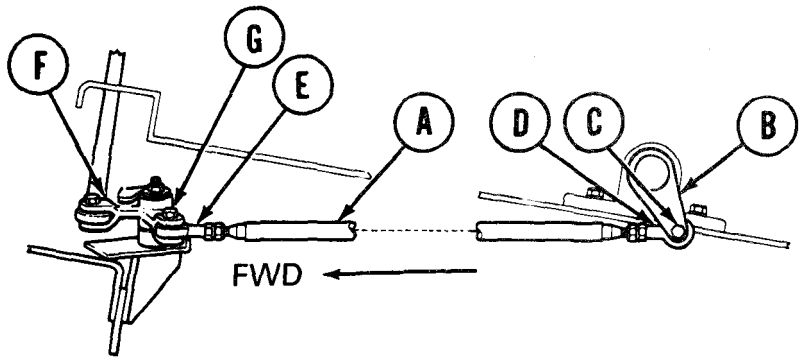
Go on to Sheet 5

TA249294

SHIFTING CONTROL TO FORWARD INBOARD BELL CRANK ASSEMBLY ROD REPLACEMENT (Sheet 5 of 5)

INSTALLATION:

1. Position one end of rod (A) in shifting remote control lever (B).



2. Using 9/16 inch wrench, install bolt (C) thru rod end (D) into lever (B).
3. Position rod end (E) in front belI crank (F).
4. Using 9/16 inch wrench, install bolt (G) thru rod end (E) into front bell crank (F).
5. Adjust shifting controls and linkages (page 11-52).
6. Install operators floor access plate (page 17-10).
7. Remove blocks from tracks.

END OF TASK

TA249295

SHIFTING FORWARD OUTBOARD ROD REPLACEMENT (Sheet 1 of 4)

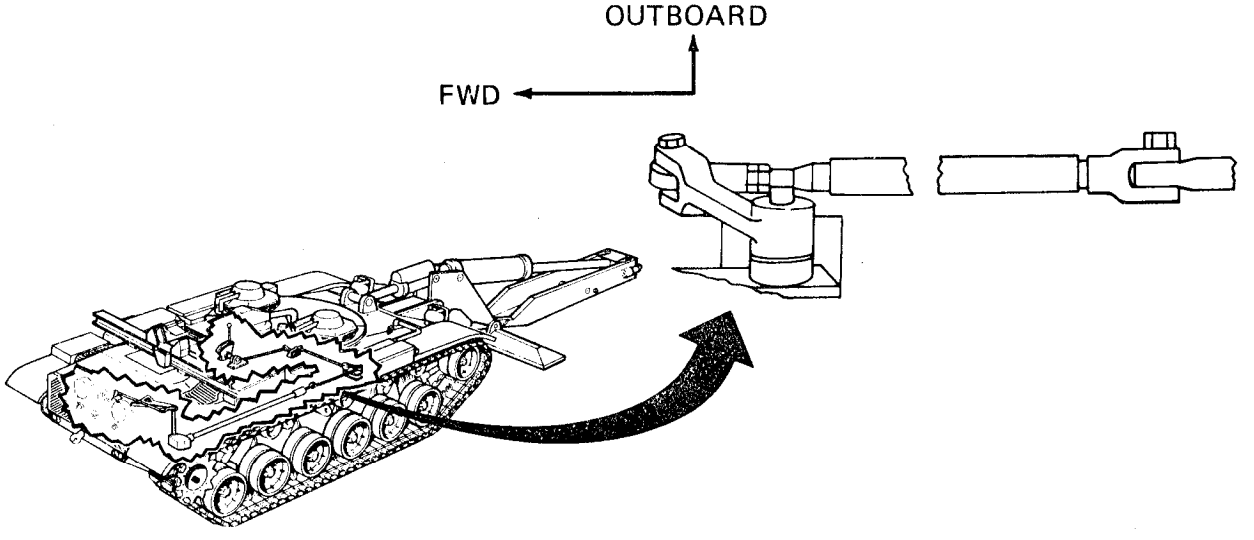
PROCEDURE INDEX

TOOLS: 9/16 in. combination box and open end wrench (2 required)
Steel tape
Torque wrench with 1/2 in. drive (0-17 5 lb-ft)
9/16 in. crowfoot adapter with 1/2 in. drive

SUPPLIES: Paper (Itern 72, Appendix D)
Pencil (Item 71, Appendix D)

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Block tracks to prevent vehicle movement (TM 5-5420-202-10)



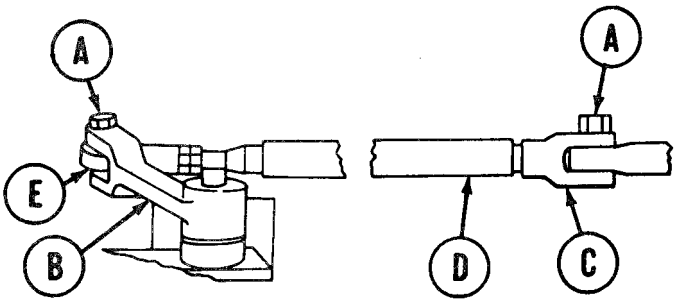
Go on to Sheet 2

TA249296

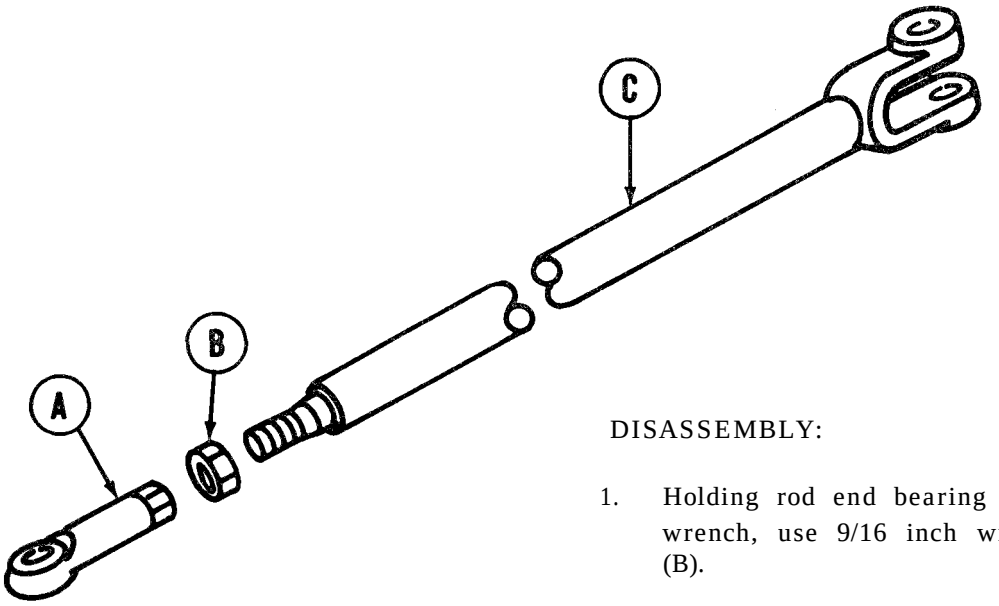
SHIFTING FORWARD OUTBOARD ROD REPLACEMENT (Sheet 2 of 4)

REMOVAL:

1. Using 9/16 inch wrench, remove two bolts (A) from lever (B) and clevis (C).
2. Remove rod (D).
3. Using steel tape, measure center-to-center distance between holes in rod end (E) and clevis (C).



4. Using pencil and paper, write down center-to-center distance.



DISASSEMBLY:

1. Holding rod end bearing (A) with 9/16 inch wrench, use 9/16 inch wrench to back off nut (B).
2. Using 9/16 inch wrench, remove rod end bearing (A) and nut (B) from rod (C).

INSPECTION:

Inspect rod end (A), nut (B), and rod (C) for ear or damage. Replace if required.

ASSEMBLY:

1. Using fingers install nut (B) and rod end (A) on rod (C).

Go on to Sheet 3

TA249297

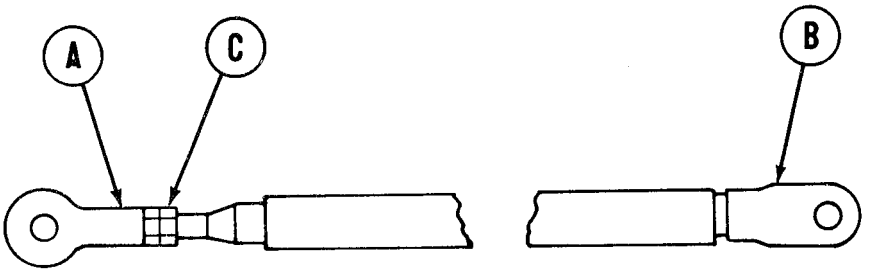
SHIFTING FORWARD OUTBOARD ROD REPLACEMENT (Sheet 3 of 4)

ADJUSTMENT:

NOTE

When adjusting rod end, make certain that threads on control rods extend past the gage opening in the rod end to ensure a positive grip.

1. Using two 9/16 inch wrenches and steel tape, adjust rod end bearing (A) to obtain same center-to-center distance between holes in rod end bearing (A) and clevis (B) as measured and recorded in steps 3 and 4, REMOVAL.



2. Using torque wrench and crowfoot adapter, tighten nut (C) against rod end bearing (A) to 16-18 lb-ft (23-24 N·m).

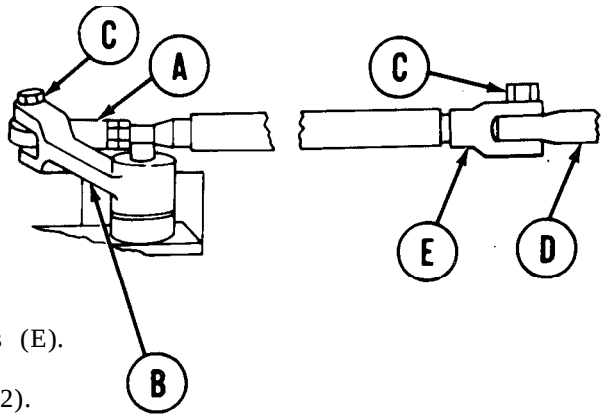
Go on to Sheet 4

TA249298

SHIFTING FORWARD OUTBOARD ROD REPLACEMENT (Sheet 4 of 4)

INSTALLATION:

1. Position rod end bearing (A) in lever (B).
2. Using 9/16 inch wrench, install bolt (C) in lever (B).
3. Position rod end (D) of connecting link assembly in clevis (E).



4. Using 9/16 inch wrench, install bolt (C) in clevis (E).
5. Adjust shifting controls and linkages (page 11-52).
6. Remove blocks from tracks.

End of Task

TA249299

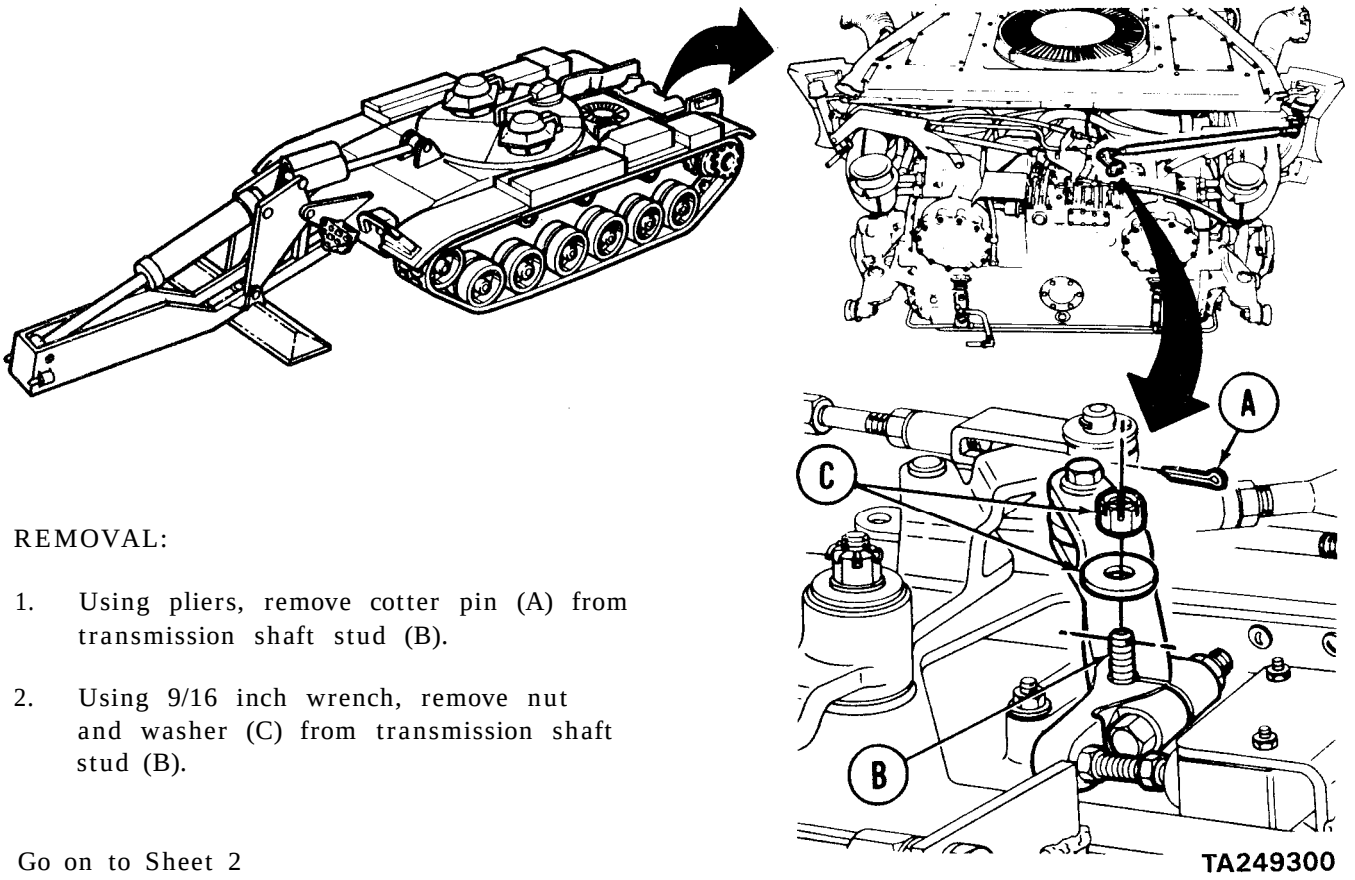
SHIFTING CONTROL REAR ROD AND LEVERS REPLACEMENT (Sheet 1 of 4)

PROCEDURE INDEX

TOOLS: Slip joint pliers
7/16 in. open end wrench
9/16 in. open end wrench (2 required)
Flat-tip screwdriver

SUPPLIES: Spring pin

PRELIMINARY PROCEDURES: Block tracks to prevent vehicle movement (TM 5-5420-202-10)
Place shift lever in reverse (TM 5-5420-202-10)
Remove top deck (page 16-21)
Remove transmission shroud (page 9-2)

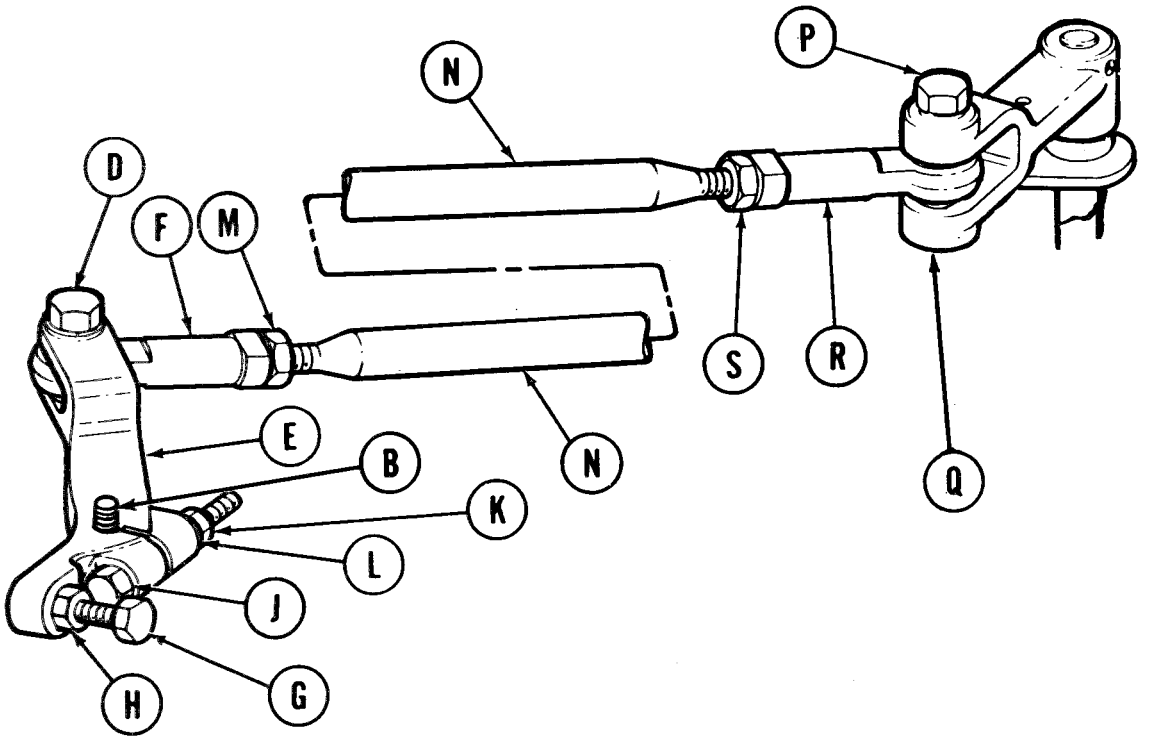


REMOVAL:

1. Using pliers, remove cotter pin (A) from transmission shaft stud (B).
2. Using 9/16 inch wrench, remove nut and washer (C) from transmission shaft stud (B).

Go on to Sheet 2

SHIFTING CONTROL REAR ROD AND LEVERS REPLACEMENT (Sheet 2 of 4)



3. Using 9/16 inch wrench, remove bolt (D) from lever (E) and rod end (F), and separate rod end (F) from lever (E).

4. Using 7/16 inch wrench, remove screw (G) and nut (H) from lever (E).

5. Using 9/16 inch wrench, hold screw (J). Using 9/16 inch wrench, remove nut (K) and washer (L) from screw (J). Remove screw (J) and lever (E) from transmission shaft stud (B).

6. Using 9/16 inch wrench on flats of rod end (F) and 9/16 inch wrench on jamnut (M), loosen jamnut (M) and remove rod end (F) from rod (N).

7. Using 9/16 inch wrench, remove jamnut (M) from rod (N).

8. Using 9/16 inch wrench, remove bolt (P) and lever (Q).

9. Using 9/16 inch wrench on flats of rod end (R) and 9/16 inch wrench on jamnut (S), loosen jamnut (S) and remove rod end (R) from rod (N).

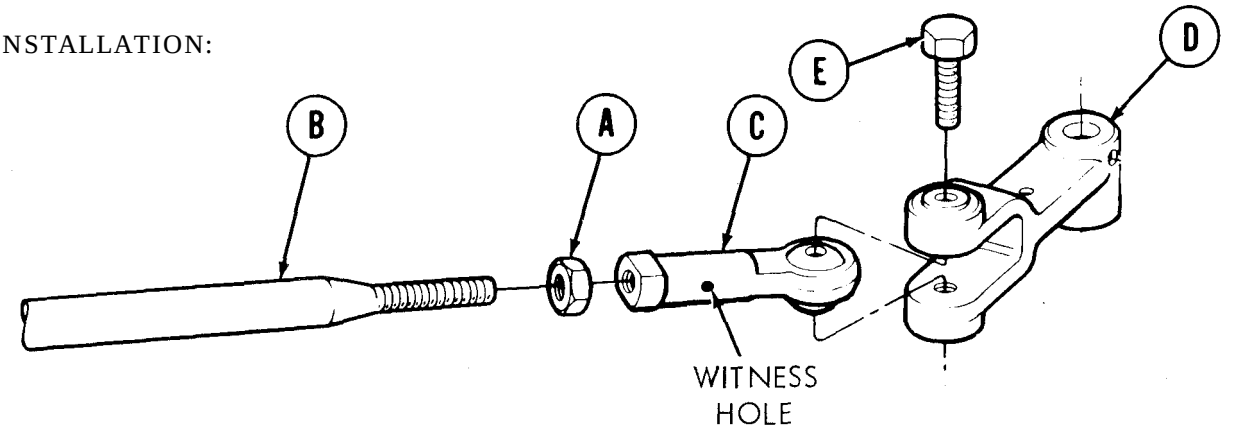
10. Using 9/16 inch wrench, remove jamnut (S) from rod (N).

Go on to Sheet 3

TA249301

SHIFTING CONTROL REAR ROD AND LEVERS REPLACEMENT (Sheet 3 of 4)

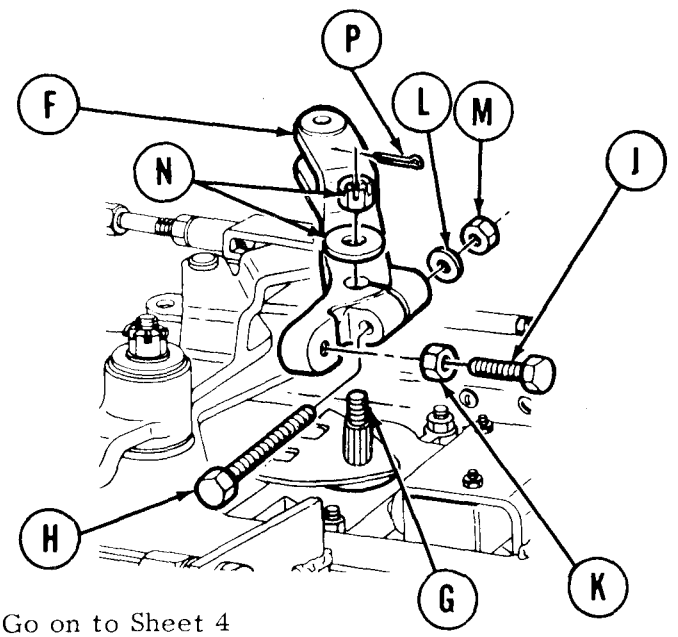
INSTALLATION:



1. Using 9/16 inch wrench, install jamnut (A) onto rod (B).
2. Using 9/16 inch wrench, install rod end (C) onto rod (B) past witness holes.
3. Position rod end (C) into lever (D).
4. Using 9/16 inch wrench, install bolt (E) through lever (D) and rod end (C).

NOTE

Make sure that clevis opening on lever (F) is alined with spline on transmission stud (G) before installing lever (F).

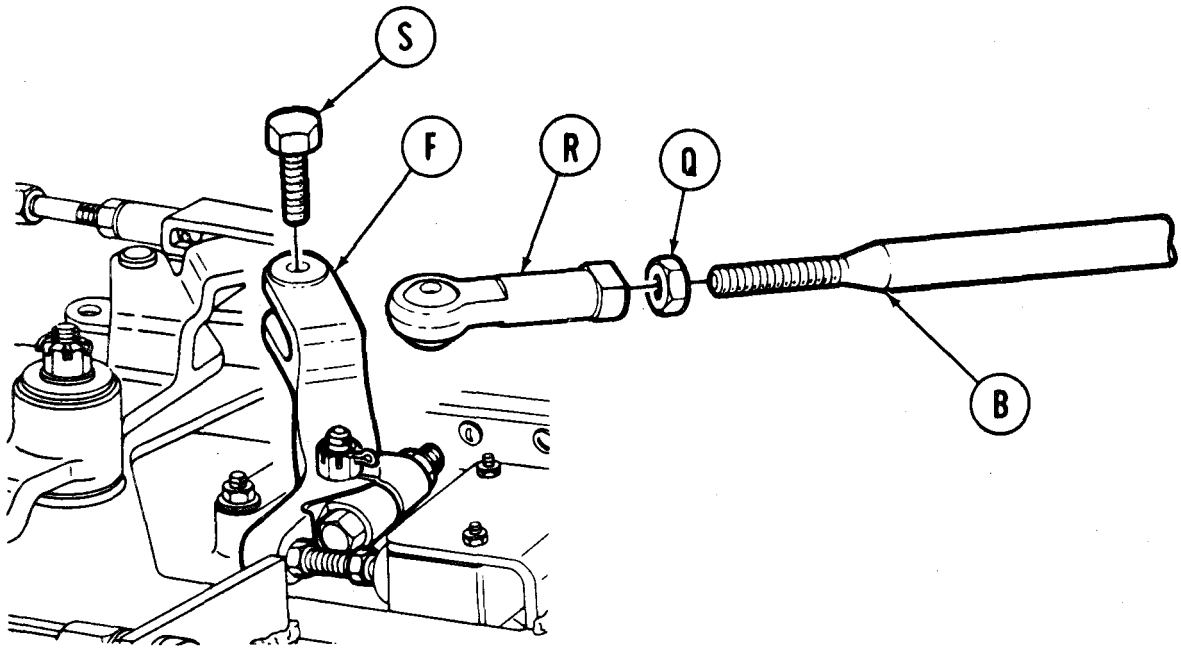


5. Install lever (F) onto transmission shaft stud (G). Using hand, install screw (H) through lever (F).
6. Using 7/16 inch wrench, install screw (J) and jamnut (K) into lever (F).
7. Install washer (L) and nut (M) onto screw (H). Using two 9/16 inch wrenches, tighten nut (M).
8. Using 9/16 inch wrench, install washer and nut (N) onto transmission shaft stud (G).
9. Using pliers, install new cotter pin (P) through nut (N) and transmission shaft stud (G) .

Go on to Sheet 4

TA249302

SHIFTING CONTROL REAR ROD AND LEVERS REPLACEMENT (Sheet 4 of 4)



10. Using 9/16 inch wrench, install jamnut (Q) onto rod (B).

11. Using 9/16 inch wrench, install rod end (R) onto rod (B).

12. Adjust and position rod end (R) into clevis of lever (F). Using 9/16 inch wrench, install bolt (S) through clevis of lever (F) and rod end (R).

13. Perform shifting linkage adjustments (page 11-52).

14. Perform neutral shift switch adjustment (page 11-80).

15. Replace transmission shroud (page 9-6).

16. Replace top deck (page 16-23).

End of Task

TA249303

SHIFTING CONTROL BRACKET ASSEMBLY AND CONNECTING LINK REPLACEMENT (Sheet 1 of 2)

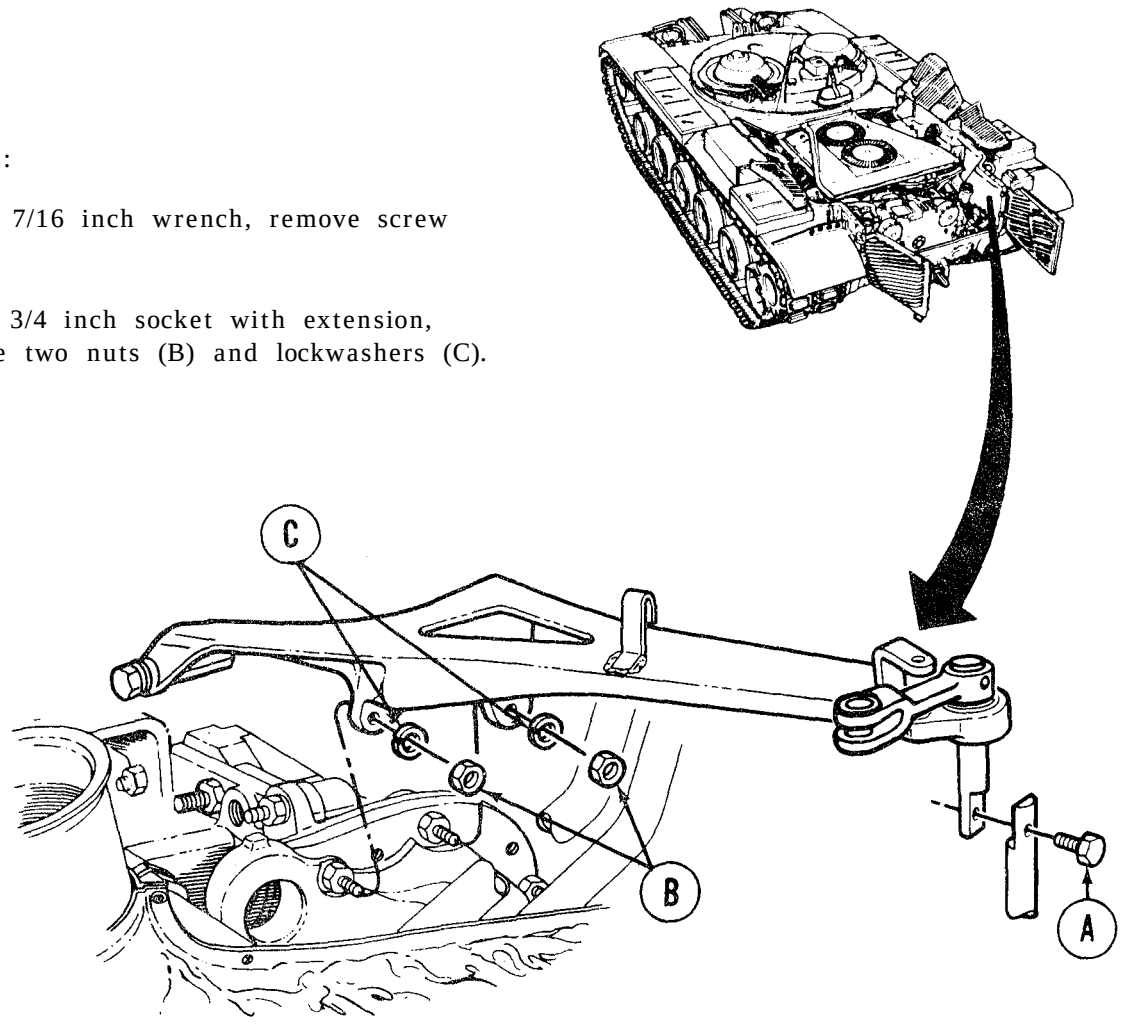
TOOLS: Hammer
1/8 in. drive punch
Ratchet with 1/2 in. drive
3/4 in. socket with 1/2 in. drive
2 in. extension with 1/2 in. drive
3/4 in. combination box and open end wrench (2 required)
7/16 in. combination box and open end wrench

SUPPLIES: Lockwashers (3 required)

PRELIMINARY PROCEDURE: Remove shifting control lever (page 11-34)

REMOVAL:

1. Using 7/16 inch wrench, remove screw (A).
2. Using 3/4 inch socket with extension, remove two nuts (B) and lockwashers (C).



Go on to Sheet 2

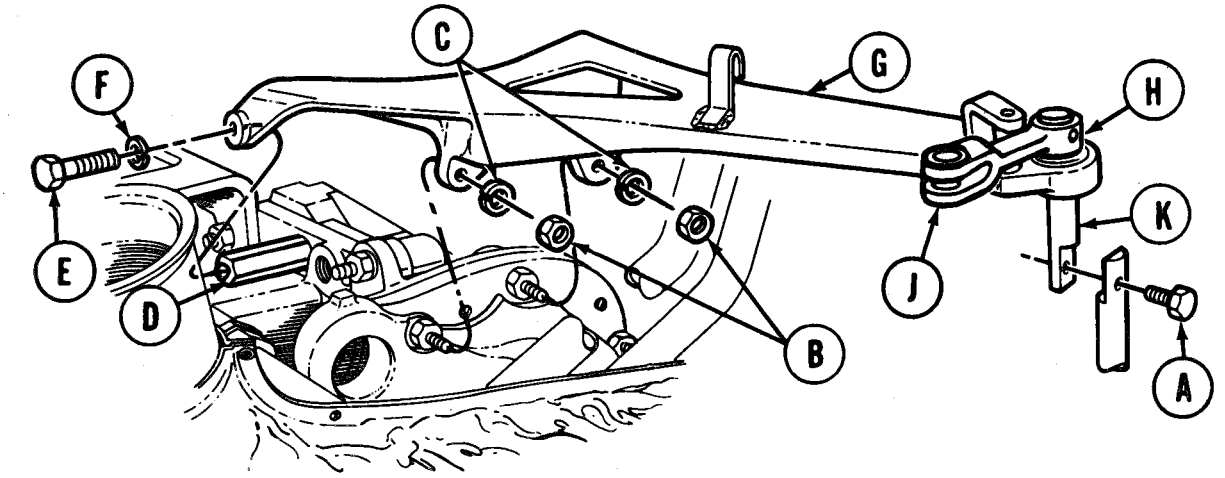
TA249304

SHIFTING CONTROL BRACKET ASSEMBLY AND CONNECTING LINK REPLACEMENT (Sheet 2 of 2)

3. Using 3/4 inch wrench to hold stud (D), use 3/4 inch wrench to remove screw (E) and lockwasher (F).
4. Remove bracket assembly (G) from transmission.
5. Using punch and hammer, remove spring pin (H). Throw pin away.
6. Remove lever (J).
7. Remove shaft (K).

INSTALLATION:

1. Install shaft (K) in bracket assembly (G).
2. Position lever (J) on shaft (K).
3. Using hammer, install new spring pin (H) through lever (J) and shaft (K).



4. Position bracket assembly (G) on transmission.
5. Using 3/4 inch socket with extension, install two nuts (B) and lockwashers (C).
6. Using 3/4 inch wrench, install screw (E) and lockwasher (F).
7. Using 7/16 inch wrench, install screw (A) through both parts of connecting link (K).
8. Install shifting control lever (page 11-37).

End of Task

TA249305

BRACKET ASSEMBLY REPAIR (Sheet 1 of 1)

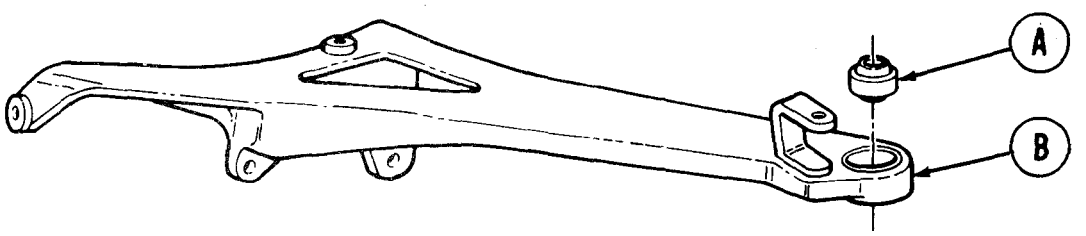
TOOLS: Hammer, 2 lb.
3/4 in. drive pin punch
Vise

REFERENCE: LO 5-5420-202-12

PRELIMINARY PROCEDURE: Remove bracket from vehicle (page 11-38)

INSPECTION:

Inspect bearing (A) for damage or wear.



DISASSEMBLY:

Using hammer and punch, remove bearing (A) from bracket (B).

ASSEMBLY:

1. Using vise, press bearing (A) in bracket (B).
2. Install bracket in vehicle (page 11-39).
3. Lubricate (LO 5-5420-202-12).

End of Task

TA249306

SHIFTING CONTROL BRACKET AND LINK ASSEMBLY REPAIR (Sheet 1 of 11)

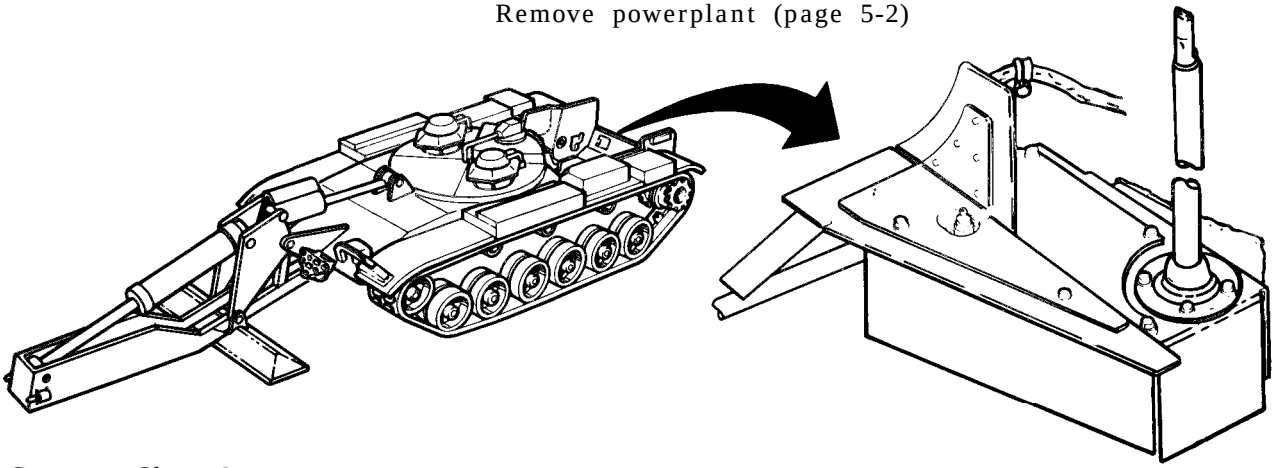
PROCEDURE INDEX

TOOLS:
- 7/16 in. socket with 1/2 in. drive
- 2 in. extension with 1/2 in. drive
- 5 in. extension with 1/2 in. drive
- Ratchet with 1/2 in. drive
- 1/8 in. pin punch
- Hammer
- 9/16 in. combination box and open end wrench (2 required)
- 3/4 in. combination box and open end wrench
- 7/16 in. combination box and open end wrench
- 9/16 in. socket with 1/2 in. drive
- Grease gun
- 9/16 in. crowfoot adapter with 3/8 in. drive
- Torque wrench with 1/2 in. drive (0 to 175 lb-ft) (0 to 237 N·m)
- 9/16 in. crowfoot adapter with 1/2 in. drive
- 3/4 in. punch
- 5/16 in. combination box and open end wrench
- 1/4 in. combination box and open end wrench
- 6 in. rule
- 1/2 in. punch
- Vise

SUPPLIES:
- Grease (Item 37, Appendix D)
- Pencil (Item 71, Appendix D)
- Paper (Item 72, Appendix D)
- Lockwashers (8 required)

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES:
- Block tracks to prevent vehicle movement (TM 5-5420-202-10)
- Remove powerplant (page 5-2)

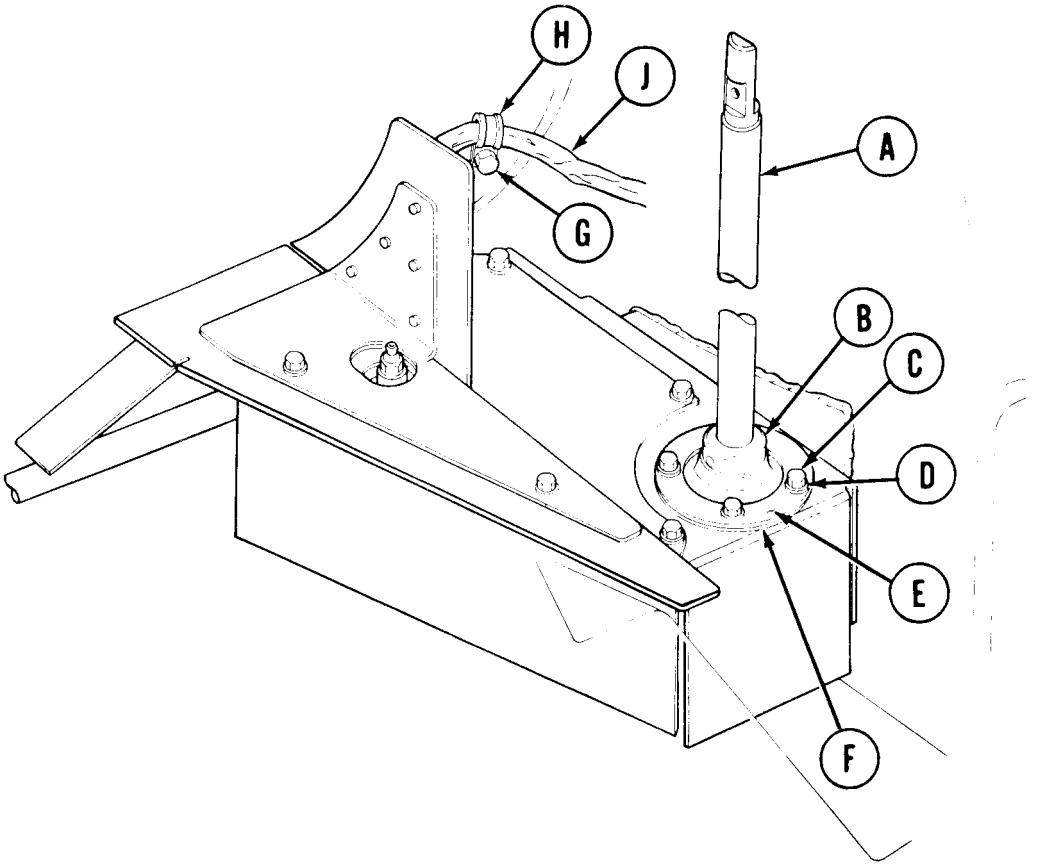


Go on to Sheet 2

SHIFTING CONTROL BRACKET AND LINK ASSEMBLY REPAIR (Sheet 2 of 11)

REMOVAL:

1. Remove shaft (A) from link assembly (B).
2. Using 7/16 inch socket, remove four screws (C) and washers (D) securing spacer (E) and gasket (F).
3. Remove spacer (E) and gasket (F). Throw gasket (F) away.
4. Using 7/16 inch wrench, remove screw (G) in clamp (H).
5. Remove clamp (H).
6. Push cable (J) aside.



Go on to Sheet 3

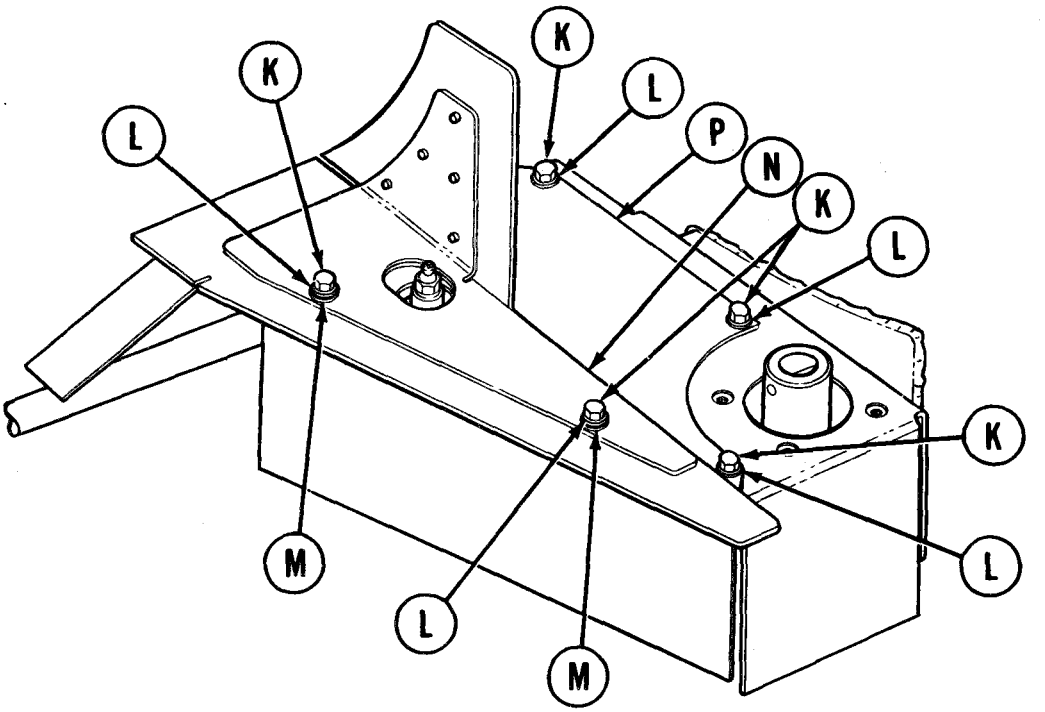
TA249308

SHIFTING CONTROL BRACKET AND LINK ASSEMBLY REPAIR (Sheet 3 of 11)

7. Using 7/16 inch socket, remove five screws (K) and lockwashers (L) and two flat washers (M).

8. Remove seal assembly (N).

9. Remove shield (P).



Go on to Sheet 4

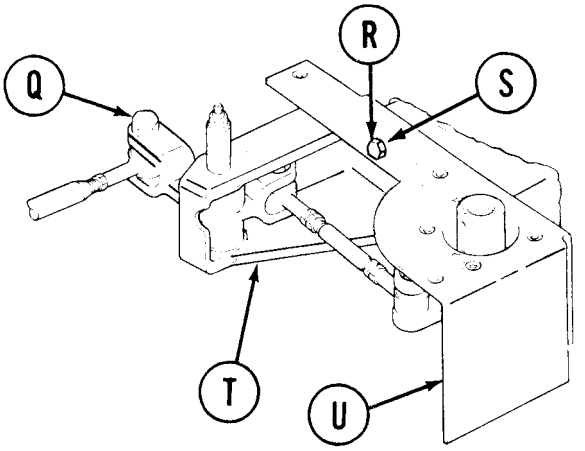
TA249309

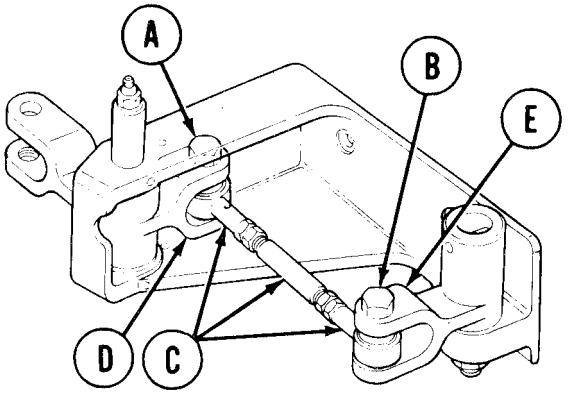
SHIFTING CONTROL BRACKET AND LINK ASSEMBLY REPAIR (Sheet 4 of 11)

10. Using 9/16 inch wrench, remove bolt (Q).

11. Using 9/16 inch socket and extension, remove three screws (R) and lockwashers (S) securing bracket assembly (T) to hull.

12. Remove bracket assembly (T) and shield (U) from hull wall.





DISASSEMBLY:

1. Using 9/16 inch wrench, remove bolts (A) and (B).

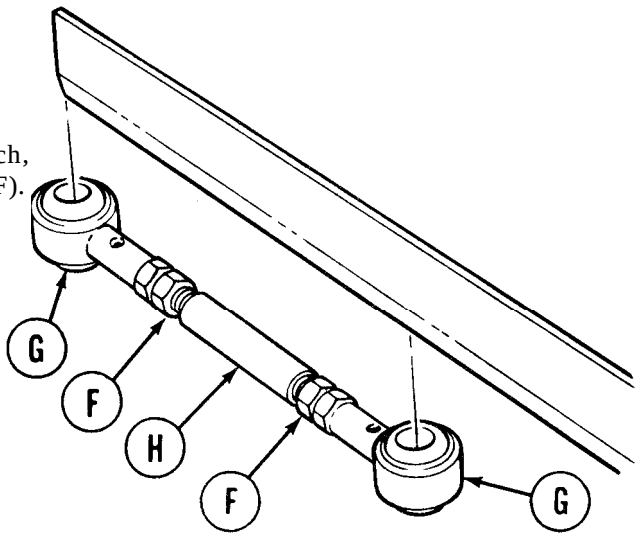
2. Remove stud and rod end bearing assembly (C) from lever (D) and link (E).

3. Using 6 inch rule, measure center-to-center distance between holes in rod ends.

4. Using pencil and paper, write down center–to-center distance.

5. Holding rod ends (G) with one 9/16 inch wrench, use other 9/16 inch wrench to back off nuts (F).

6. Using 9/16 inch wrench, remove rod ends (G) and nuts (F) from stud (H).



Go on to Sheet 5

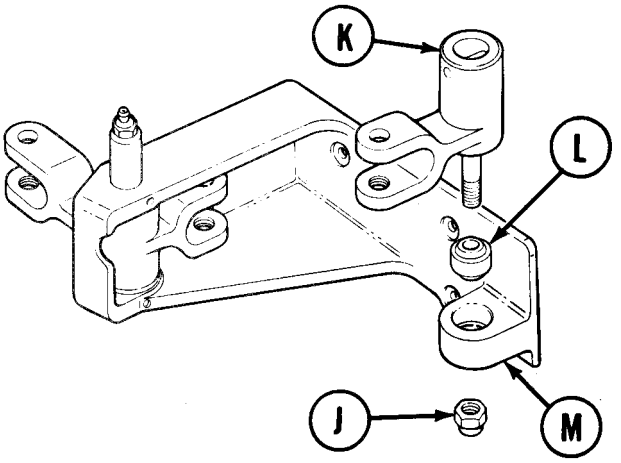
TA249310

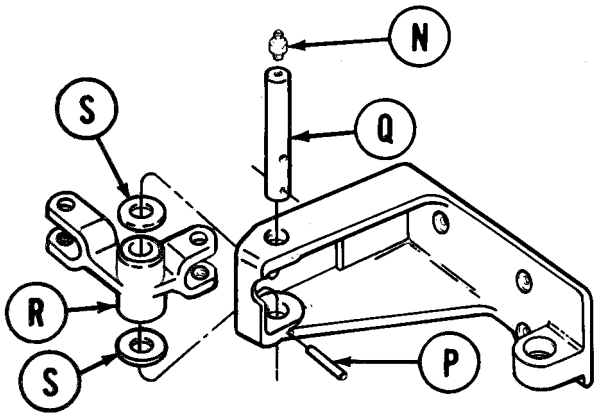
SHIFTING CONTROL BRACKET AND LINK ASSEMBLY REPAIR (Sheet 5 of 11)

7. Using 3/4 inch, wrench, remove nut (J).

8. Remove link assembly (K).

9. Using 3/4 inch punch and hammer, remove bearing (L) from bracket (M).





10. Using 5/16 inch combination wrench, remove grease fitting (N).

11. Using hammer and 1/8 inch punch, remove pin (P).

12. Using hammer and 1/2 inch punch, remove pin (Q).

13. Remove lever (R) and two washers (S).

Go on to Sheet 6

TA249311

SHIFTING CONTROL BRACKET AND LINK ASSEMBLY REPAIR (Sheet 6 of 11)

NOTE

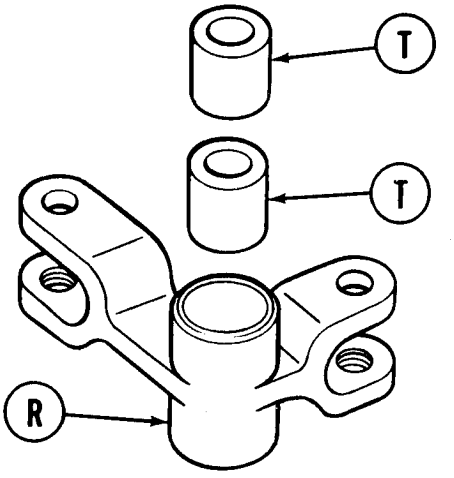
If bearings (T) are to be replaced, perform steps 14 and 15.

14. Place lever (R) in vise and using 1/8 inch punch and hammer, remove bearings (T).

15. Using vise, press two new bearings (T), one at a time, into lever (R). Bearings (T) must be flush with outer surface of lever (R).

INSPECTION:

Inspect bearings, washers, and grease fitting for wear or damage. Replace as necessary.



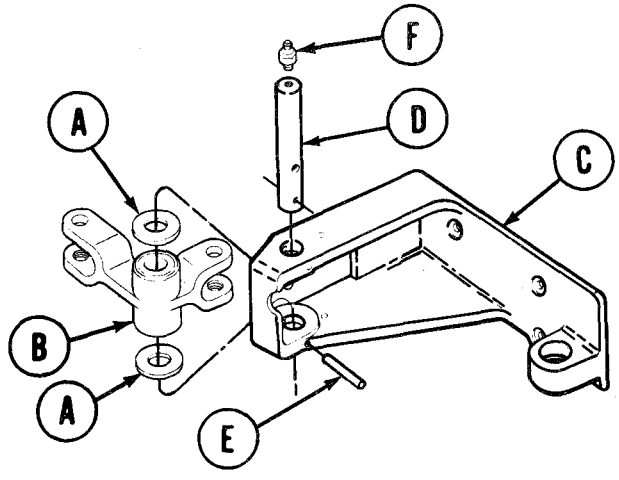
Go on to Sheet 7

TA249312

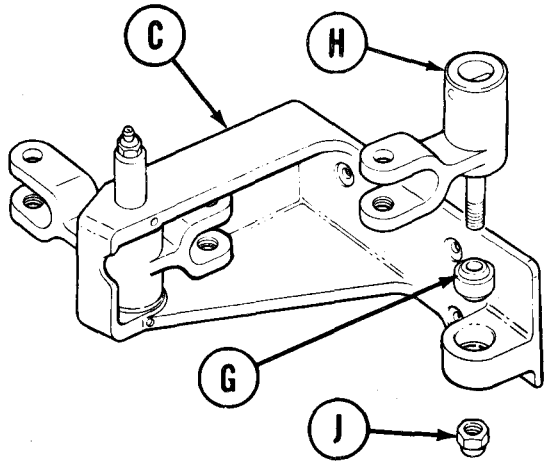
SHIFTING CONTROL BRACKET AND LINK ASSEMBLY REPAIR (Sheet 7 of 11)

ASSEMBLY:

1. Position two washers (A) on lever (B).
2. Carefully position washers (A) and lever (B) in bracket (C) with all holes alined.
3. Position pin (D) under bracket (C) with pin hole alined with pin hole in bracket (C).
4. Using hammer and 1/2 inch punch, install pin (D) through bracket (C), washers (A), and lever (B).
5. Using hammer, install pin (E) through pin hole in bracket (C) and shaft (D).
6. Using 1/4 inch wrench, install grease fitting (F).



7. Using vise, install bearing (G) in bracket (C).
8. Position link assembly (H) on bracket (C).
9. Using 3/4 inch wrench, install nut (J) on link assembly (H).

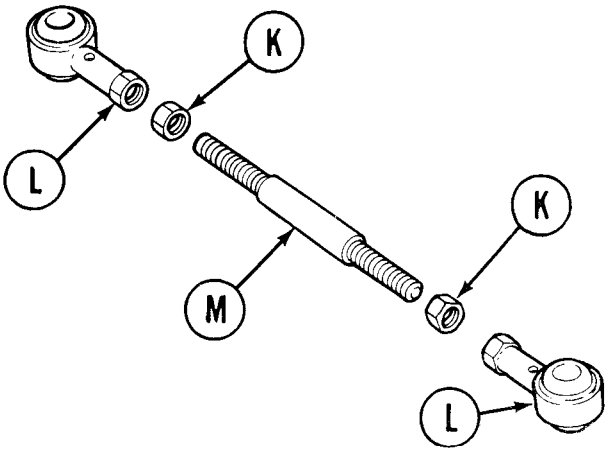


Go on to Sheet 8

TA249313

SHIFT CONTROL BRACKET AND LINK ASSEMBLY REPAIR (Sheet 8 of 11)

10. Using fingers install nuts (K) and rod ends (L) on stud (M).

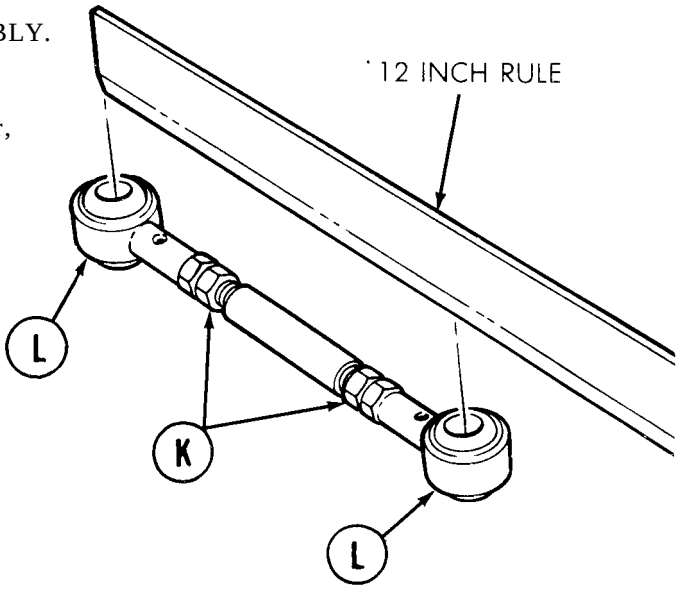


NOTE

When adjusting clevises or rod ends, make certain that threads on control rods extend past the witness hole in the rod end to ensure a positive grip.

1. Using two 9/16 inch wrenches and 6 inch rule, adjust rod ends (L) to obtain the same center-to-center distance between rod end holes as measured and recorded in steps 3 and 4, DISASSEMBLY.

2. Using torque wrench and crow foot adapter, tighten nuts (K) against rod ends (L) to 16-18 lb-ft (22-24 N·m).



Go on to Sheet 9

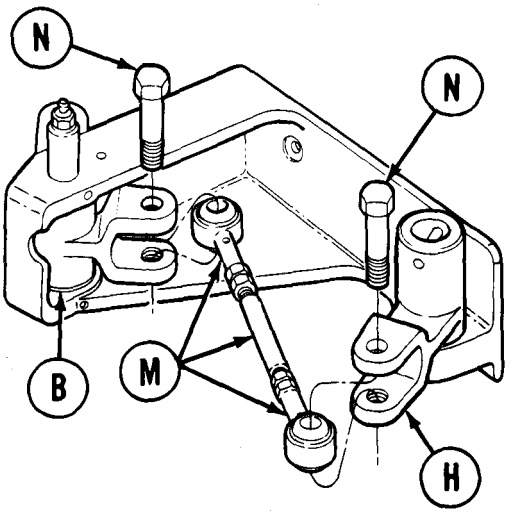
TA249314

SHIFTING CONTROL BRACKET AND LINK ASSEMBLY REPAIR (Sheet 9 of 11)

13. Position stud and rod end bearing assembly (M) with rod end holes alined with the clevis holes in lever assembly (B) and link assembly (H).

14. Using 9/16 inch wrench, install two bolts (N) through link assemblies (H) and lever (B) and stud and rod end bearing assembly (M).

15. Using torque wrench and 9/16 inch socket, tighten two bolts (N) to 15-20 lb-ft (20-27 N·m).



INSTALLATION:

1. Position bracket assembly (A) and shield (B) against hull wall with mounting holes alined.

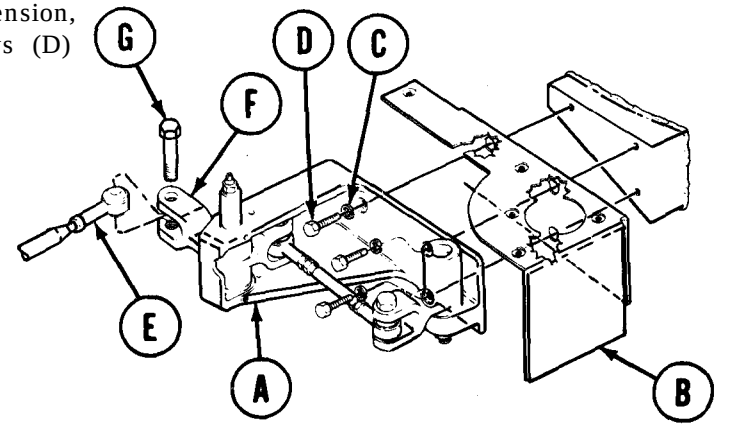
2. Using 9/16 inch socket and 5 inch extension, install three lockwashers (C) and screws (D) through bracket (A) and shield (B).

3. Using torque wrench, tighten three screws (D) to 15-20 lb-ft (20-27 N·m).

4. Position rod end (E) in lever (F).

5. Using 9/16 inch combination wrench, install bolt (G) through lever (F) and rod end (E).

6. Using torque wrench, tighten bolt (G) to 15-20 lb-ft (20-27 N·m).



Go on to Sheet 10

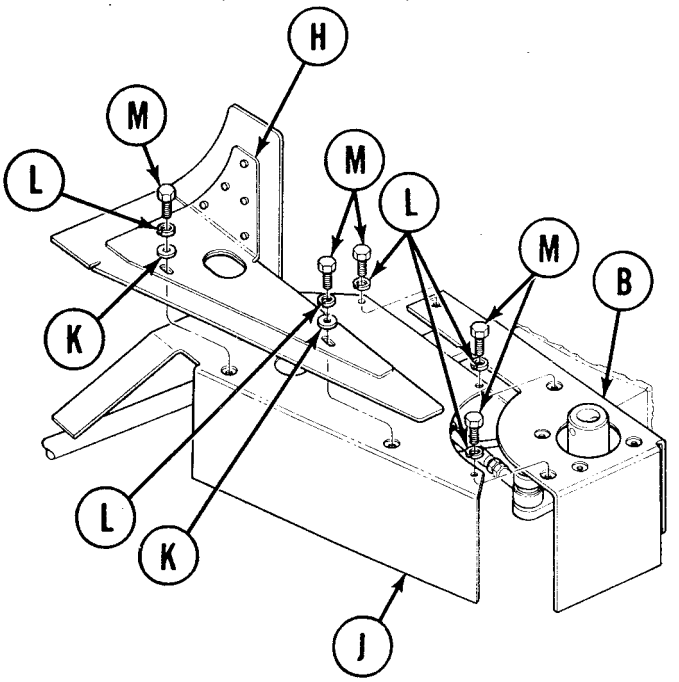
TA249315

SHIFTING CONTROL BRACKET AND LINK ASSEMBLY REPAIR (Sheet 10 of 11)

7. Position seal assembly (H) over shield (J) with holes alined.

8. Position two flat washers (K) on seal assembly (H) with holes alined.

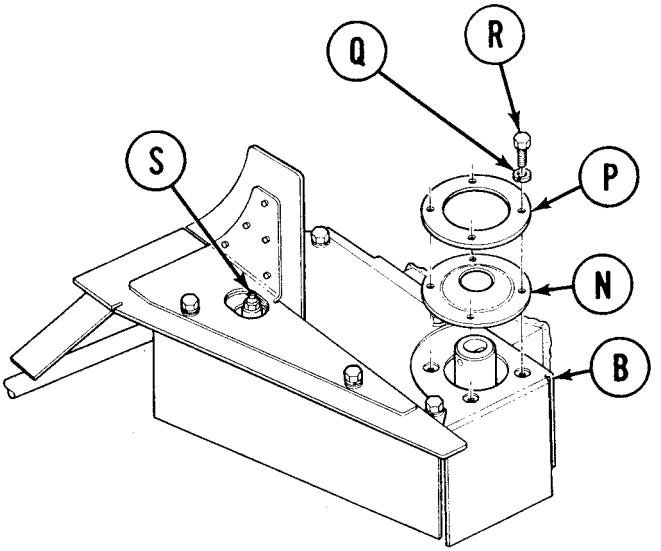
9. Using 7/16 inch socket, install five lockwashers (L) and screws (M) securing seal assembly (H) and shield (J) to shield (E).



10. Position new gasket (N) and spacer (P) on shield (B) with holes alined.

11. Using 7/16 inch socket, install four lockwashers (Q) and screws (R) through spacer (P) and gasket (N) to shield (B).

12. Using grease gun, lubricate lever at grease fitting (S) with type GAA grease.



Go on to Sheet 11

TA249316

SHIFTING CONTROL BRACKET AND LINK ASSEMBLY REPAIR (Sheet 11 of 11)

13. Position cable (T) and clamp (U) on hull wall.

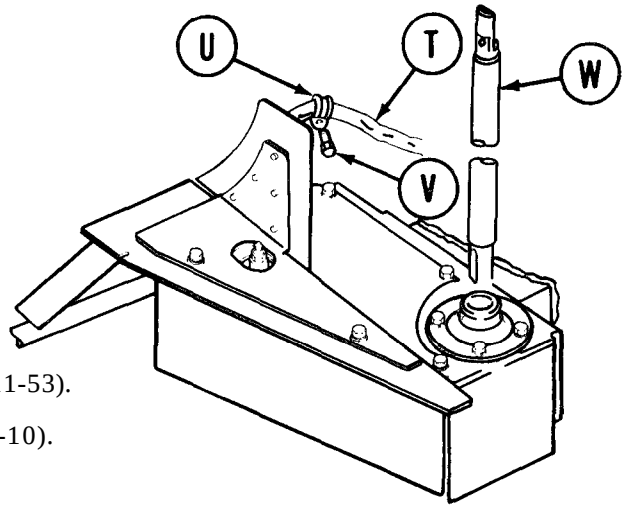
14. Using 7/16 inch combination wrench, install screw (V) through clamp (U).

15. Install shaft (W).

16. Install powerplant (page 5-14).

17. Adjust shifting controls and linkages (page 11-53).

18. Remove blocks from tracks (TM 5-5420-202-10).



End of Task

TA249317

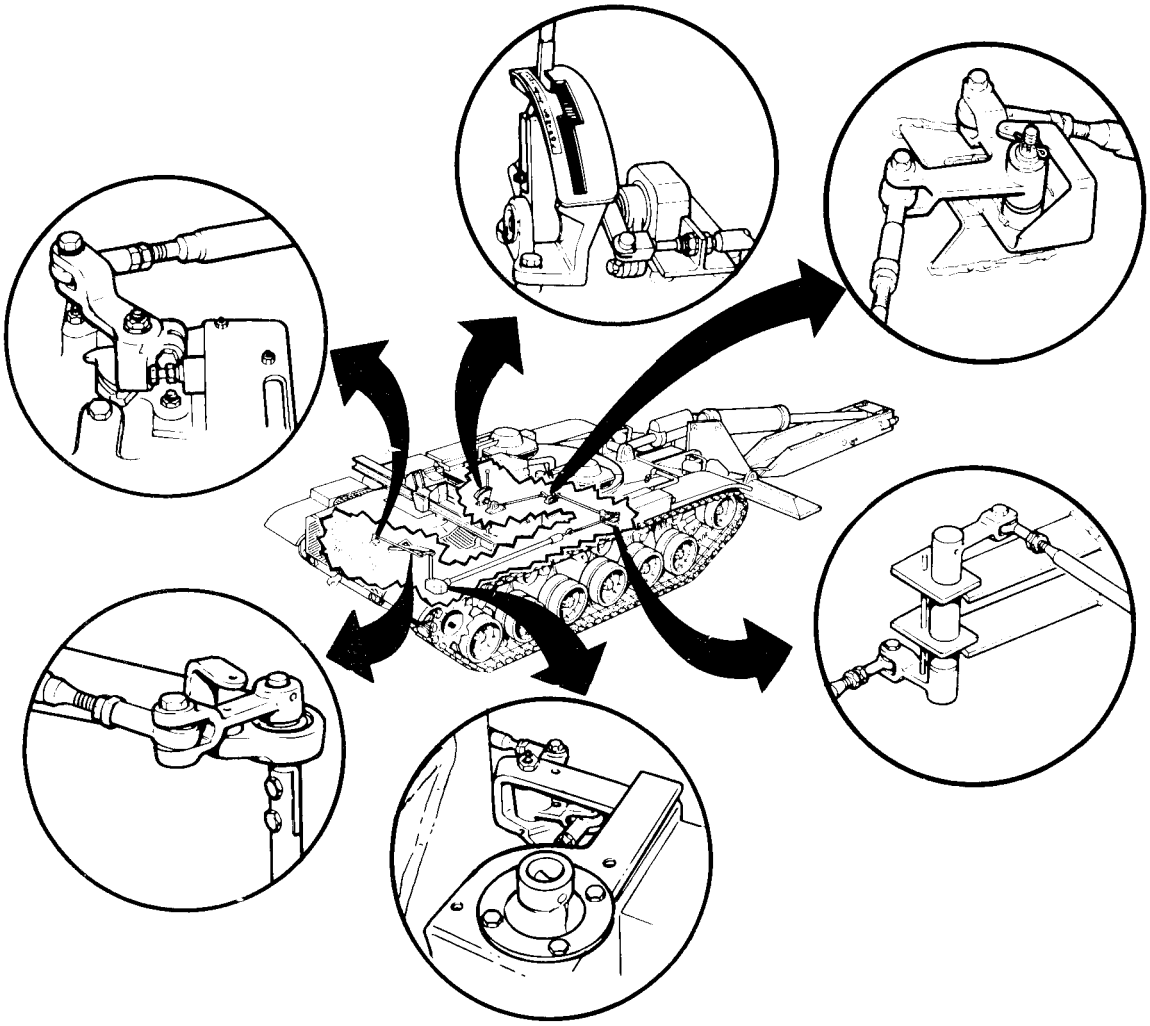
SHIFT LINKAGE ADJUSTMENT (Sheet 1 of 28)

TOOLS: 7/16-in. socket with 1/2-in. drive
Ratchet with 1/2-in. drive
9/16-in. combination box and open end wrench (2 required)
Torque wrench with 1/2-in. drive (0 to 175 lb-ft) (0 to 237 N·m)
7/16 in. combination box and open end wrench
Bench vise
9/16-in. socket with 1/2-in. drive
9/16 in. crowfoot adapter with 3/8 in. drive

SUPPLIES: Locating pins (1/8-in. diameter by 2-1/2 in. long copper rod). Wire (0.06 in. diameter by 2-in. long) (Item 61, Appendix D)

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Block tracks and place transmission shift lever in neutral (TM 5-5420-202-10)
Remove top deck (page 16-21)
Remove transmission shroud (page 9-2)

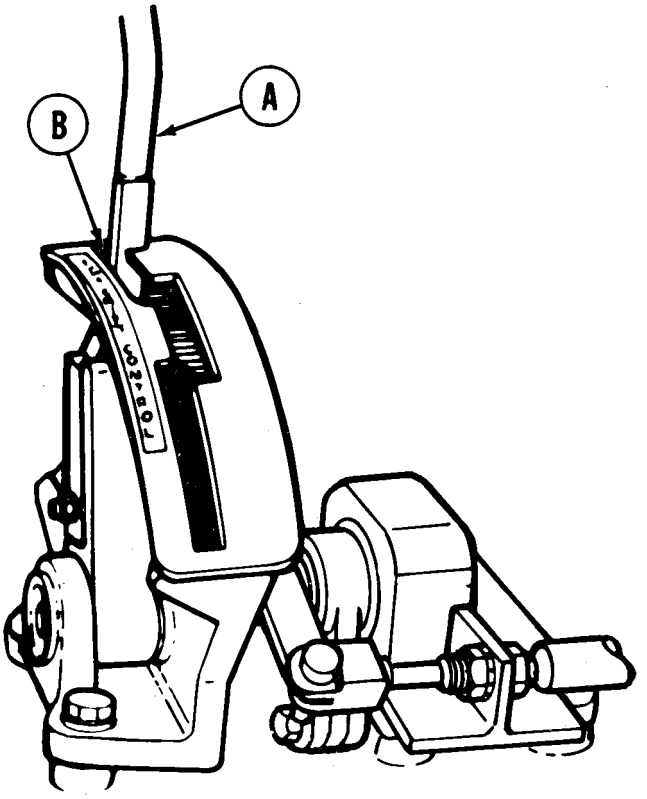


Go on to Sheet 2

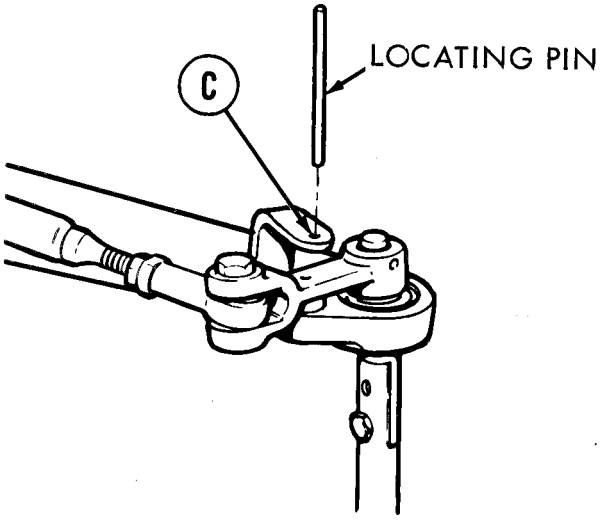
SHIFT LINKAGE ADJUSTMENT (Sheet 2 of 28)

ADJUSTMENT:

1. Try to move transmission shift lever (A) to P position (B). If transmission shift lever can not be moved to P position, go to step 4. If transmission shift lever can be moved to P position go on to step 2.



DRIVER'S STATION



RIGHT REAR OF VEHICLE

2. Go to right rear of vehicle and try to insert locating pin into alignment hole (C). If locating pin can not be inserted, go to step 9. If locating pin can be inserted, remove locating pin and go on to step 3.

Go on to Sheet 3

TA249319

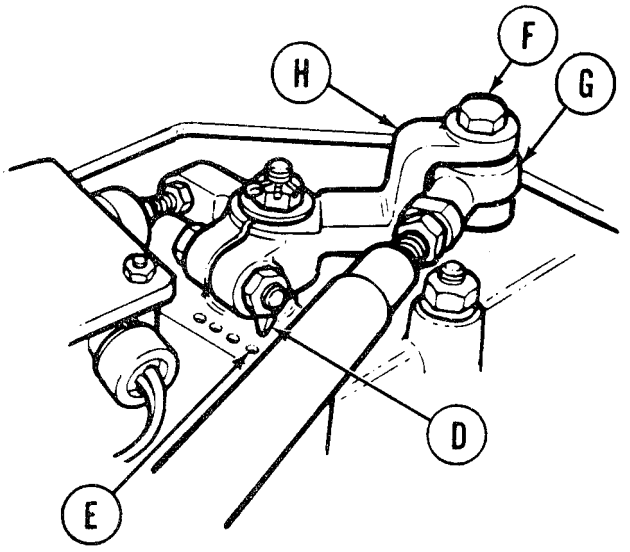
SHIFT LINKAGE ADJUSTMENT (Sheet 3 of 28)

3. At top of transmission, check position of shifting position indicator (D). If shifting position indicator (D) is pointing to most forward dot (E), notify support maintenance.

NOTE

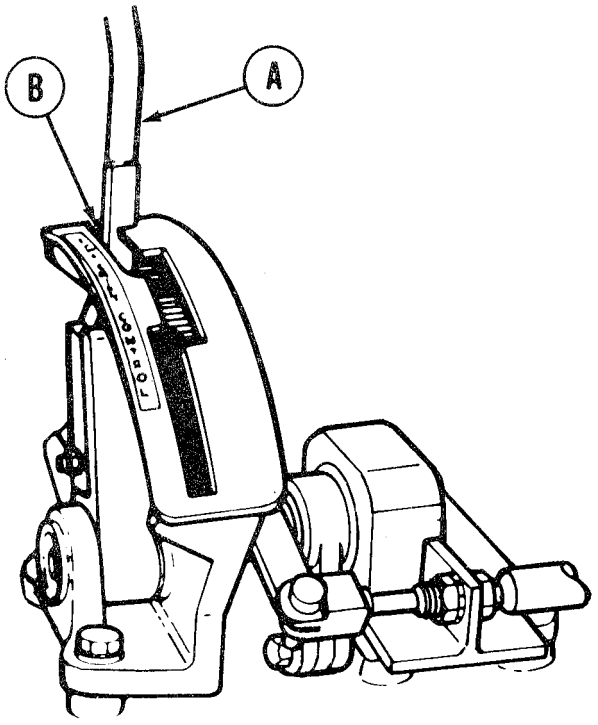
Linkage is in adjustment, but transmission malfunction is indicated.

If shifting position indicator (D) is not pointing to most forward dot (E), go to step 127.



TOP OF TRANSMISSION

4. At top of transmission using 9/16 inch wrench, remove screw (F) and remove shifting rod bearing end (G) from clevis (H).



DRIVER'S STATION

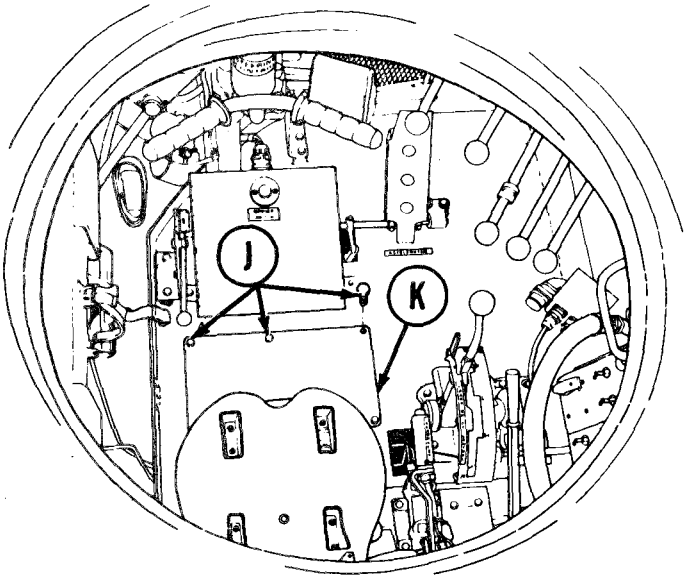
5. At driver's station, move transmission shift lever (A) to P position (B).

Go on to Sheet 4

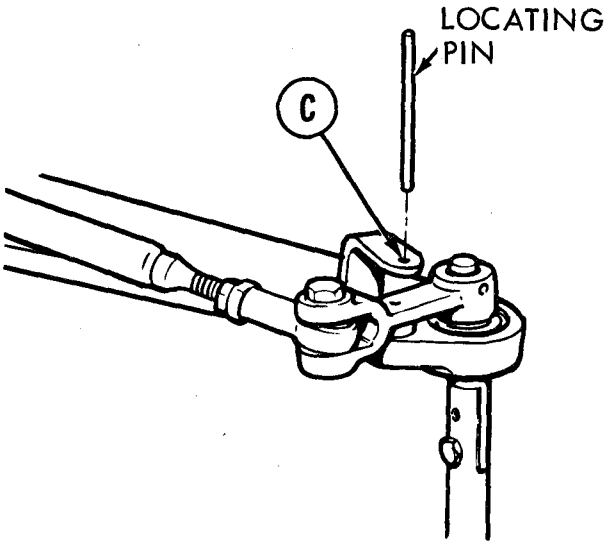
TA249320

SHIFT LINKAGE ADJUSTMENT (Sheet 4 of 28)

6. Go to right rear of vehicle and try to insert locating pin into alinement hole (C). If locating pin cannot be inserted, go to step 7. If locating pin can be inserted, go to step 127.



DRIVER'S STATION

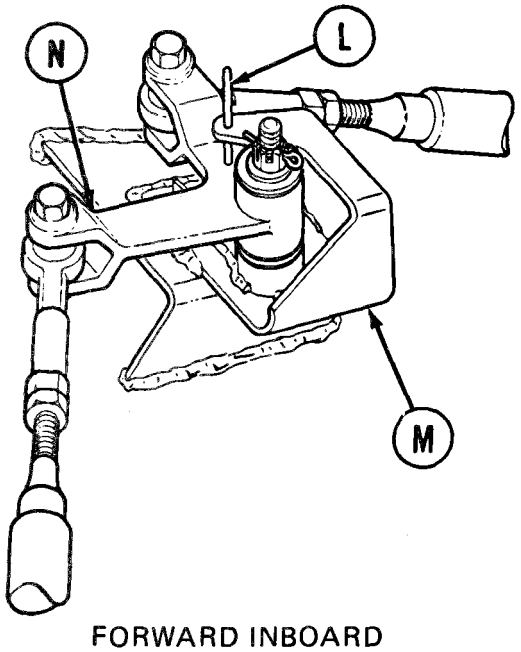


RIGHT REAR OF VEHICLE

7. At driver's station, using 9/16 inch wrench, remove six bolts (J) securing access plate and gasket (K) to floor in front of driver's seat.

8. Remove access plate and gasket (K).

9. At forward inboard link assembly, try to insert locating pin (L) into alinement holes in bracket (M) and link (N). If locating pin (L) can be inserted, remove locating pin (L) and go to step 39. If locating pin (L) cannot be inserted, go on to step 10.

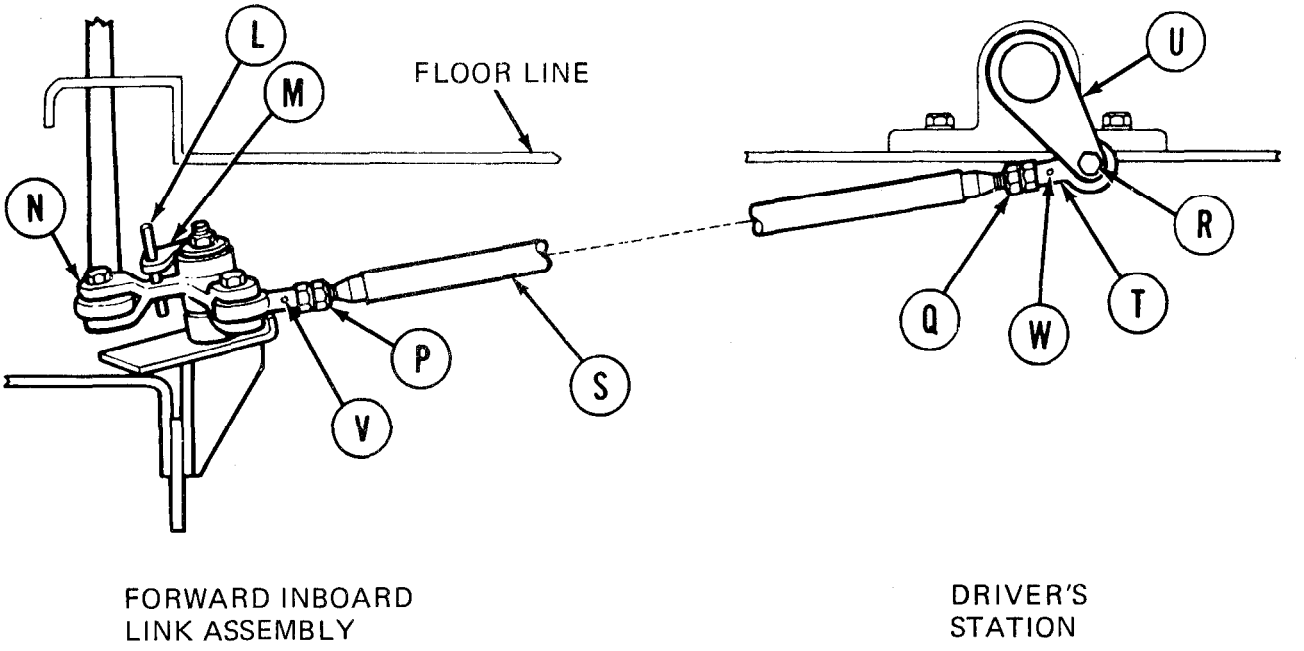


FORWARD INBOARD LINK ASSEMBLY

Go on to Sheet 5

TA249321

SHIFT LINKAGE ADJUSTMENT (Sheet 5 of 28)



10. Using 9/16 inch wrench, loosen jamnuts (P) and (Q).

11. Using 9/16 inch wrench, remove screw (R).

12. Using hands move shifting rod (S) and insert locating pin (L) into alinement holes in bracket (M) and link (N).

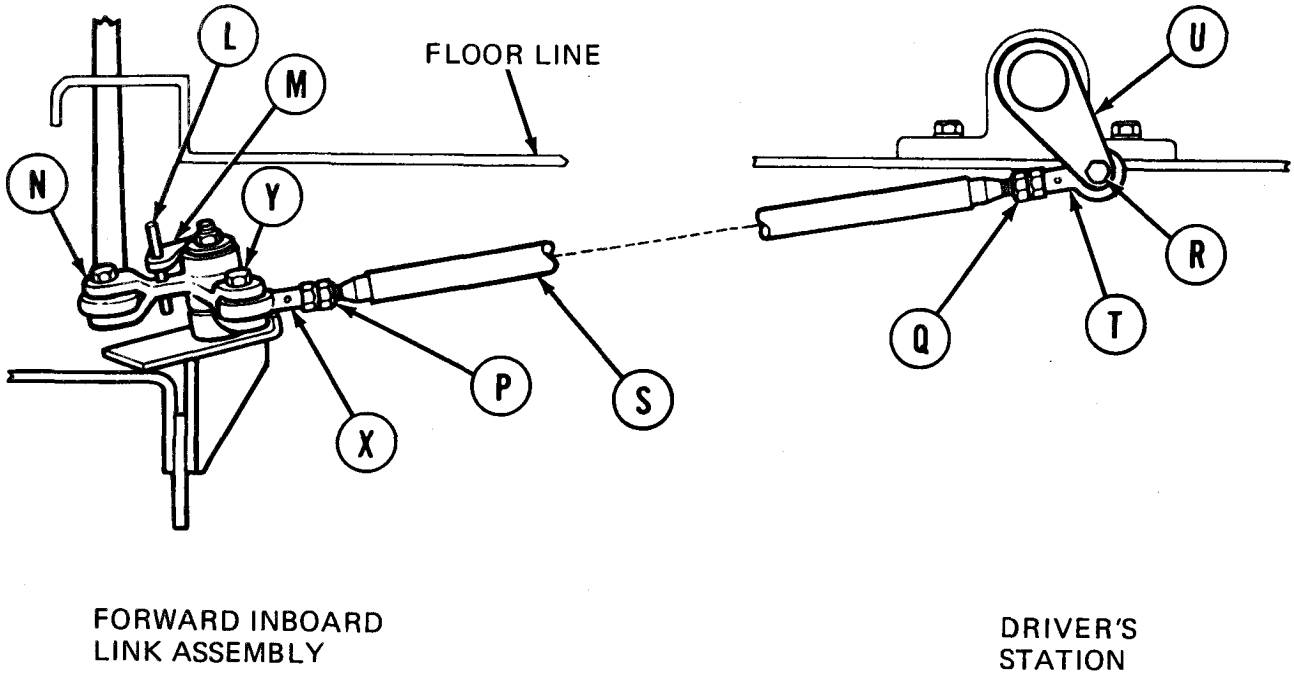
13. Using 9/16 inch wrench, adjust shifting rod bearing end (T) by turning clockwise or counterclockwise until screw (R) will slip freely through link (U) and shifting rod bearing end (T).

14. Using small diameter wire, check to see if shifting rod (S) is past witness holes (V) and (W). If shifting rod (S) is past holes (V) and (W), do steps 15 thru 18. If shifting rod (S) is not past hole (W), do steps 19 thru 28. If shifting rod (S) is not past hole (V) go to step 29.

Go on to Sheet 6

TA249322

SHIFT LINKAGE ADJUSTMENT (Sheet 6 of 28)



15. Using 9/16 inch wrench, install screw (R) through link (U) and shifting rod bearing end (T).

16. Holding rod bearing ends (T) and (X) with 9/16 inch wrench, use torque wrench and 9/16 inch crowfoot adapter to tighten jamnuts (P) and (Q) to 16-18 lb-ft (22-24 N·m).

17. Remove locating pin (L) from alinement holes in bracket (M) and link (N).

18. Using torque wrench and 9/16 inch socket, tighten screw (R) to 16-18 lb-ft (22-24 N·m) and go to step 39.

19. Using 9/16 inch wrench, adjust shifting rod bearing end (T) clockwise until shifting rod (S) is past hole (W).

20. Using 9/16 inch wrench, remove screw (Y).

21. Using 9/16 inch wrench, install screw (R) through link (U) and shifting rod bearing end (T).

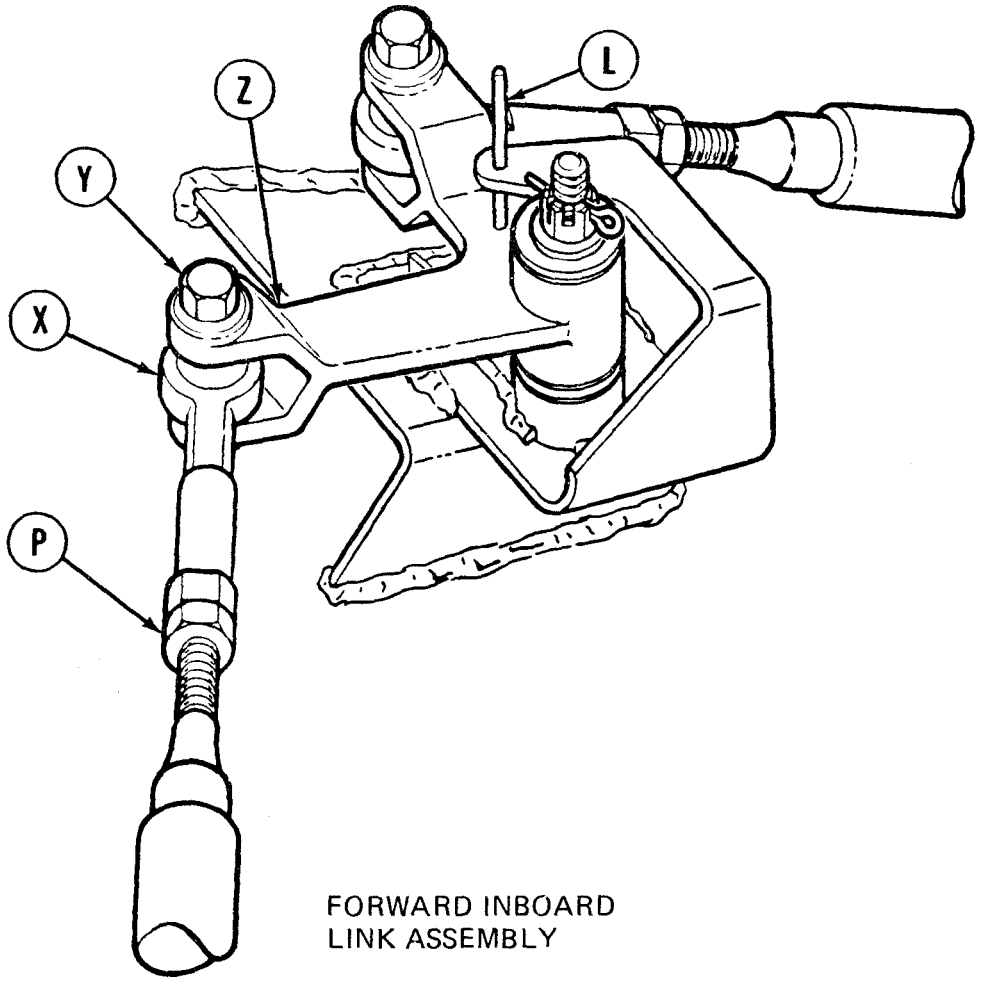
22. Holding rod bearing end (T) with 9/16 inch wrench, use torque wrench and 9/16 inch crow foot adapter to tighten jamnut (Q) to 16-18 lb-ft (22-24 N·m).

23. Using torque wrench and 9/16 inch socket, tighten screw (R) to 16-18 lb-ft (22-24 N·m).

Go on to sheet 7

TA249323

SHIFT LINKAGE ADJUSTMENT (Sheet 7 of 28)



24. Using 9/16 inch wrench, adjust shifting rod bearing end (X) by turning clockwise or counter-clockwise until screw (Y) will drop freely through clevis (Z) and shifting rod bearing end (X).

25. Using 9/16 inch wrench, install screw (Y) through clevis (Z) and shifting rod bearing end (X).

26. Holding rod bearing end (X) with 9/16 inch wrench, use torque wrench and 9/16 inch crowfoot adapter to tighten jamnut (P) to 16-18 lb-ft (22-24 N·m).

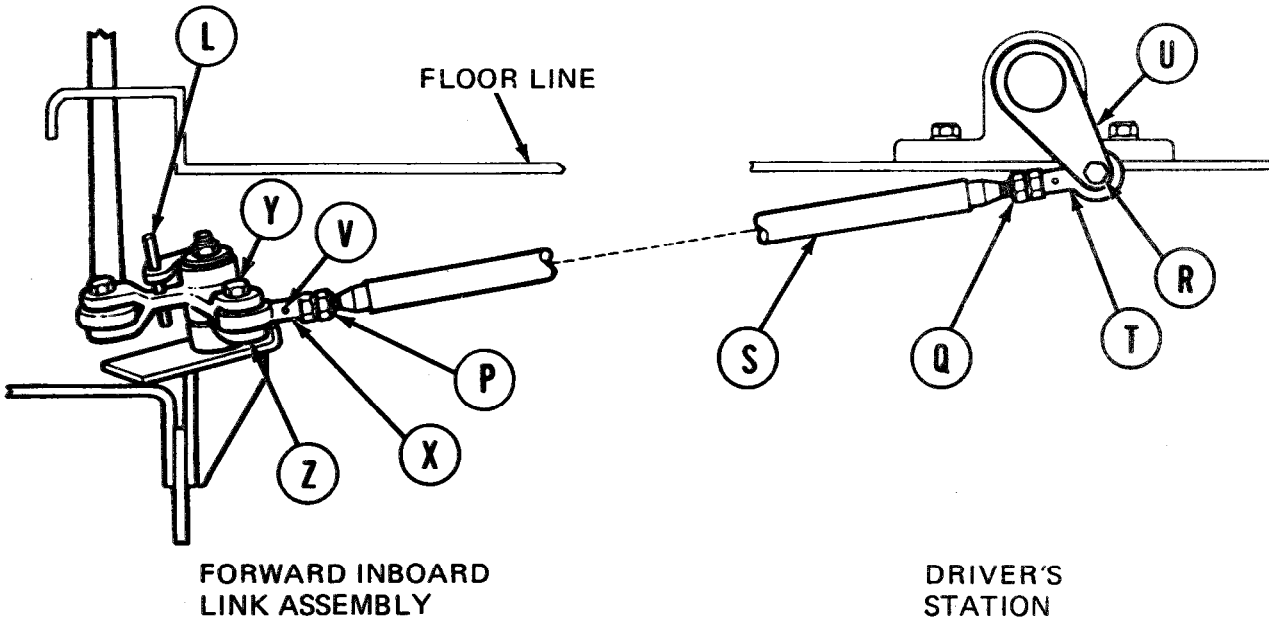
27. Remove locating pin (L) from alinement holes.

28. Using torque wrench and 9/16 inch socket, tighten screw (Y) to 16-18 lb-ft (22-24 N·m) and go to step 39.

Go on to Sheet 8

TA249324

SHIFT LINKAGE ADJUSTMENT (Sheet 8 of 28)



29. Using 9/16 inch wrench, remove screw (Y) and remove shifting rod bearing end (X) from clevis (Z).

30. Using 9/16 inch wrench, adjust shifting rod bearing end (X) clockwise until shifting rod (S) is past hole (V).

31. Using 9/16 inch wrench, install screw (Y) through clevis (Z) and shifting rod bearing end (X).

32. Holding rod bearing end (X) with 9/16 inch wrench, use torque wrench and 9/16 inch crow foot adapter to tighten jamnut (P) to 16-18 lb-ft (22-24 N·m).

33. Using torque wrench and 9/16 inch socket, tighten screw (Y) to 16-18 lb-ft (22-24 N·m).

34. Using 9/16 inch wrench, adjust shifting rod bearing end (T) by turning clockwise or counter-clockwise until screw (R) will slide freely through clevis (U) and shifting rod bearing end (T).

35. Using 9/16 inch wrench, install screw (R) through clevis (U) and shifting rod bearing end (T).

36. Holding rod bearing end (T) with 9/16 inch wrench, use torque wrench and 9/16 inch crow foot adapter to tighten jamnut (Q) to 16-18 lb-ft (22-24 N·m).

37. Remove locating pin (L) from alinement holes.

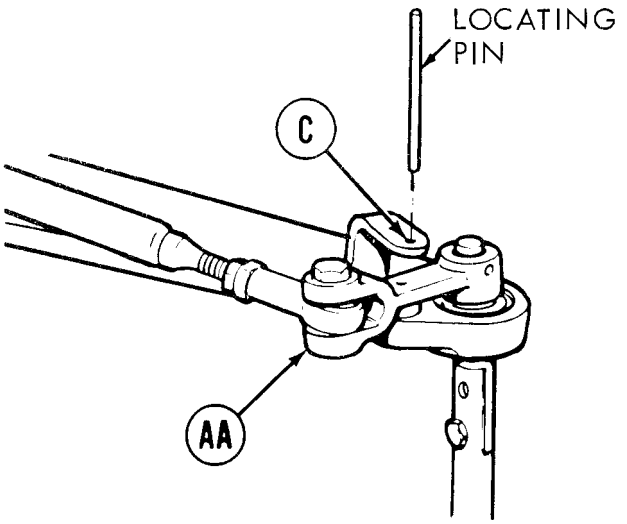
38. Using torque wrench and 9/16 inch socket, tighten screw (R) to 16-18 lb-ft (22-24 N·m).

Go on to Sheet 9

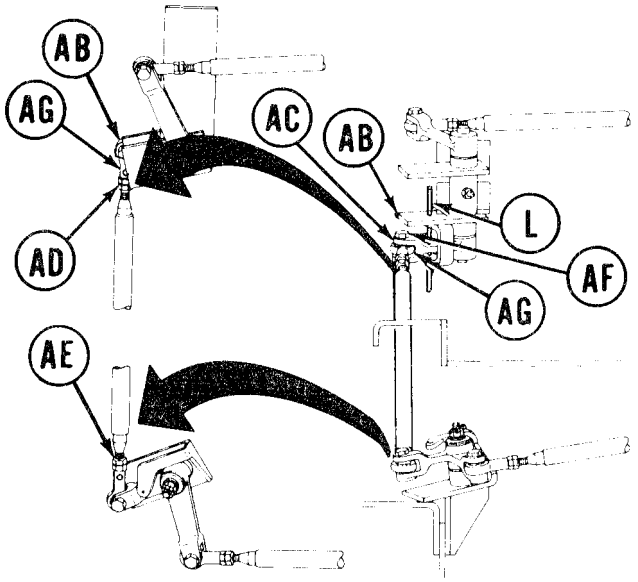
TA249325

SHIFT LINKAGE ADJUSTMENT (Sheet 9 of 28)

39. Go to right rear of vehicle and try to insert locating pin into alinement hole (C) and through clevis (AA). If locating pin can be inserted, shift linkage is in adjustment. Remove locating pin and go to step 126. If locating pin cannot be inserted, go on to step 40.



RIGHT REAR OF VEHICLE



FORWARD INBOARD LINK ASSEMBLY

40. Try to insert locating pin (L) into alinement holes in support (AB) and link (AC). If locating pin (L) can be inserted, remove locating pin (L) and go to step 67. If locating pin (L) cannot be inserted, go on to step 41.

41. Using 9/16 inch wrench, loosen jamnuts (AD) and (AE).

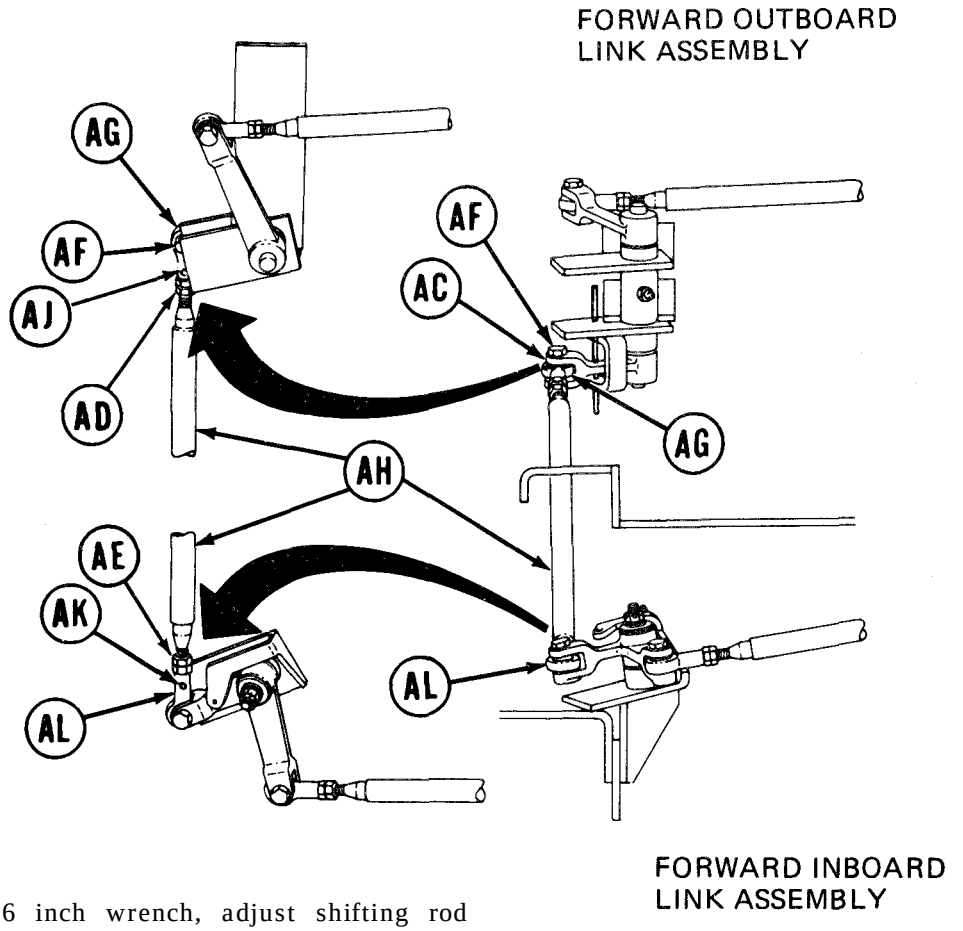
42. Using 9/16 inch wrench, remove screw (AF) and remove shifting rod bearing end (AG) from clevis (AC).

43. Using hands move clevis (AC) and insert locating pin (L) into alinement holes in support (AB) and link (AC).

Go on to Sheet 10

TA249326

SHIFT LINKAGE ADJUSTMENT (Sheet 10 of 28)



44. Using 9/16 inch wrench, adjust shifting rod bearing end (AG) by turning clockwise or counterclockwise until screw (AF) will drop freely through clevis (AC) and shifting rod bearing end (AG).

45. Using small diameter wire, check to see if shifting rod (AH) is past holes (AJ) and (AK). If shifting rod (AH) is past holes (AJ) and (AK), do steps 46 thru 48. If shifting rod (AH) is not past hole (AJ), do steps 49 thru 57. If shifting rod (AH) is not past hole (AK), go on to step 58.

46. Using 9/16 inch wrench, install screw (AF) through clevis (AC) and shifting rod bearing end (AG).

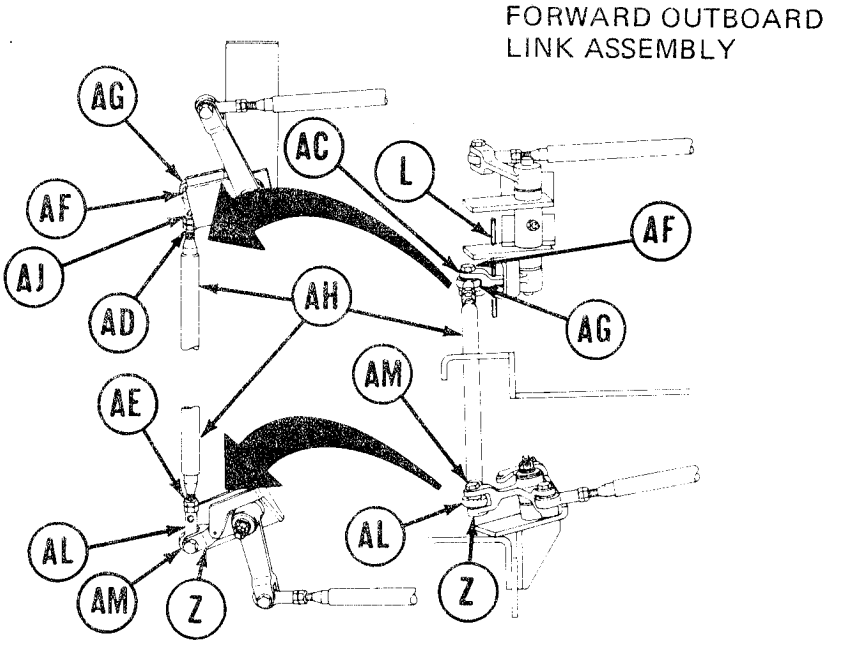
47. Holding rod bearing ends (AG) and (AL) with 9/16 inch wrench, use torque wrench and 9/16 inch crow foot adapter to tighten jamnuts (AD) and (AE) to 16-18 lb-ft (22-24 N·m).

48. Using torque wrench and 9/16 inch socket, tighten screw (AF) to 16-18 lb-ft (22-24 N·m) and go on to step 68.

Go on to Sheet 11

TA249327

SHIFT LINKAGE ADJUSTMENT (Sheet 11 of 28)



49. Using 9/16 inch wrench, adjust shifting rod bearing end (AG) clockwise until shifting rod (AH) is past hole (AJ).

50. Using 9/16 inch wrench, remove screw (AM).

51. Using 9/16 inch wrench, install screw (AF) through clevis (AC) and shifting rod bearing end (AG).

52. Holding rod bearing end (AG) with 9/16 inch wrench, use torque wrench and 9/16 inch crow foot adapter to tighten jamnut (AD) to 16-18 lb-ft (22-24 N·m).

53. Using torque wrench and 9/16 inch socket, tighten screw (AF) to 16-18 lb-ft (22-24 N·m).

54. Using 9/16 inch wrench, adjust shifting rod bearing end (AL) by turning clockwise or counterclockwise until. screw (AM) will drop freely through clevis (Z) and shifting rod bearing end (AL).

55. Using 9/16 inch wrench, install screw (AM).

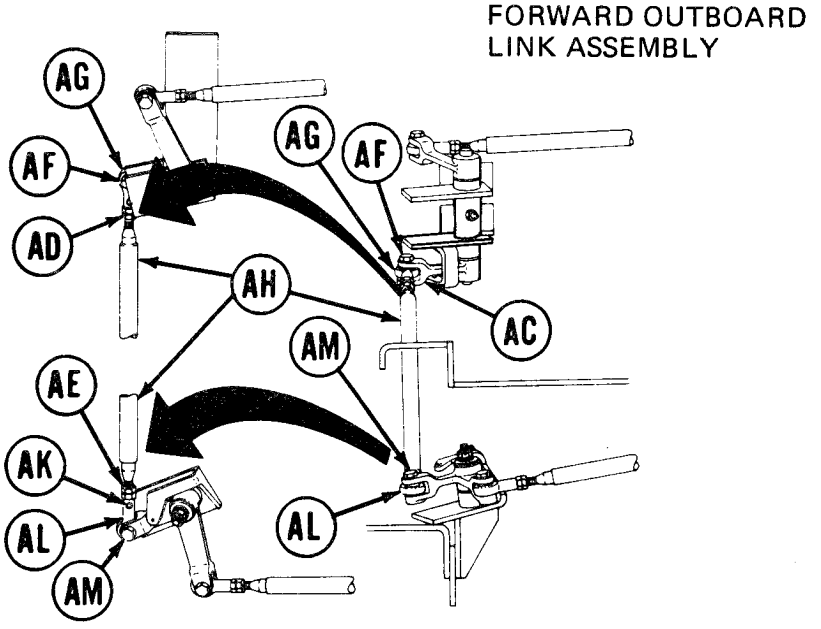
56. Holding rod bearing end (AL) with 9/16 inch wrench, use torque wrench and 9/16 inch crow foot adapter to tighten jamnut (AE) to 16-18 lb-ft (22-24 N·m) and remove locating pin (L).

57. Using torque wrench and 9/16 inch socket, tighten screw (AM) to 16-18 lb-ft (22-24 N·m) and go on to step 68.

Go on to Sheet 12

TA249328

SHIFT LINKAGE ADJUSTMENT (Sheet 12 of 28)



58. Using 9/16 inch wrench, remove screw (AM).

59. Using 9/16 inch wrench, adjust shifting rod bearing end (AL) by turning clockwise until shifting rod (AH) is past hole (AK).

60. Using 9/16 inch wrench, install screw (AM).

61. Holding rod bearing end (AL) with 9/16 inch wrench, use torque wrench and 9/16 inch crowfoot adapter to tighten jamnut (AE) to 16-18 lb-ft (22-24 N·m).

62. Using torque wrench and 9/16 inch socket, tighten screw (AM) to 16-18 lb-ft (22-24 N·m).

63. Using 9/16 inch wrench, adjust shifting rod bearing end (AG) by turning clockwise or counterclockwise until screw (AF) will drop freely through clevis (AC) and shifting rod bearing end (AG).

64. Using 9/16 inch wrench, install screw (AF).

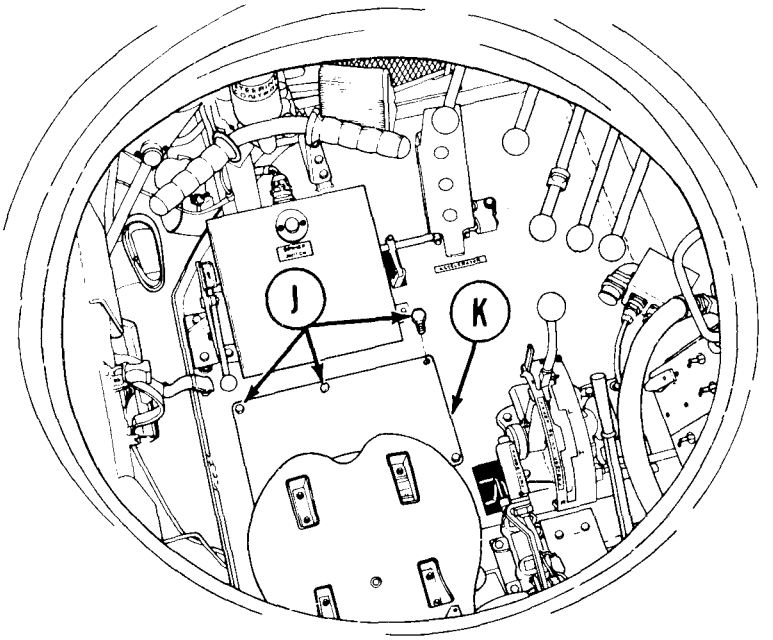
65. Holding rod, bearing end (AG) with 9/16 inch wrench, use torque wrench and 9/16 inch crowfoot adapter to tighten jamnut (AD) to 16-18 lb-ft (22-24 N·m).

66. Using torque wrench and 9/16 inch socket, tighten screw (AF).

Go on to Sheet 13

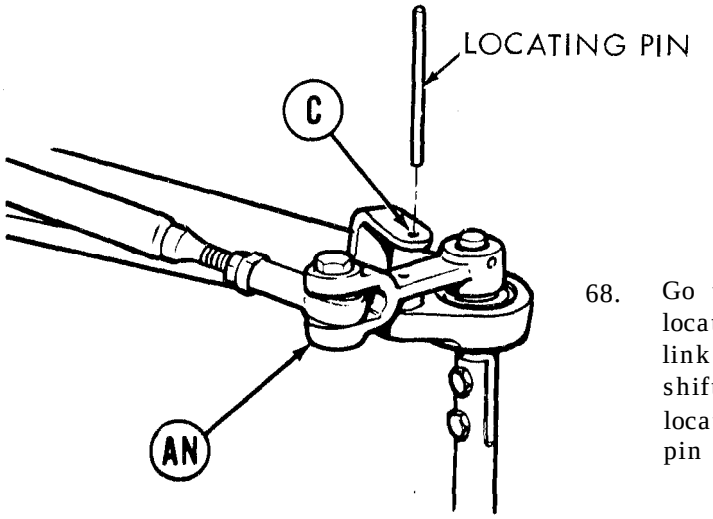
TA249329

SHIFT LINKAGE ADJUSTMENT (Sheet 13 of 28)



DRIVER'S STATION

67. At driver's station, use 9/16 inch wrench to install six bolts (J) and secure access plate and gasket (K) to floor in front of driver's seat.



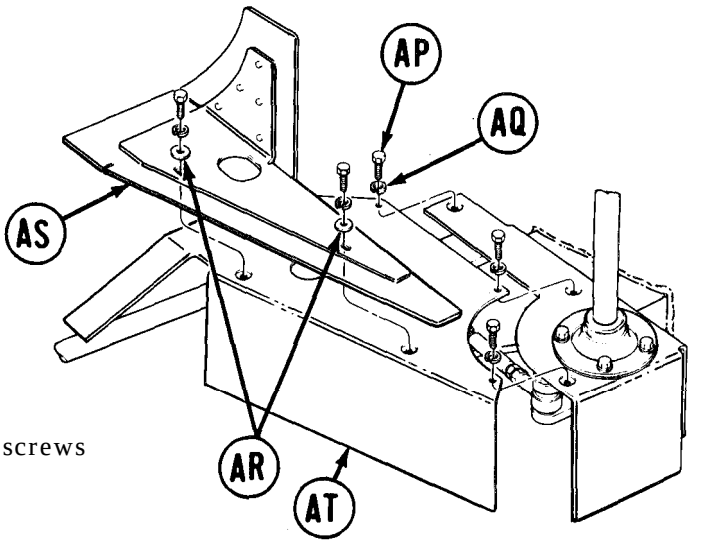
68. Go to right rear of vehicle and try to insert locating pin into alinement hole (C) and through link (AN). If locating pin can be inserted, shift linkage is in adjustment. Remove locating pin and go to step 126. If locating pin can not be inserted, go to step 69.

69. Remove powerplant (page 5-2).

Go on to Sheet 14

TA249330

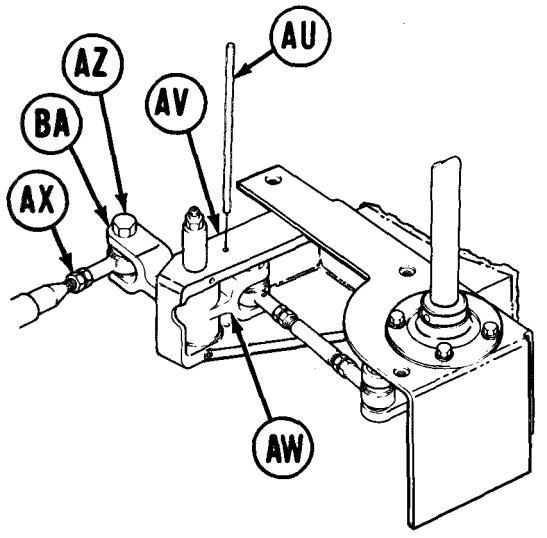
SHIFT LINKAGE ADJUSTMENT (Sheet 14 of 28)

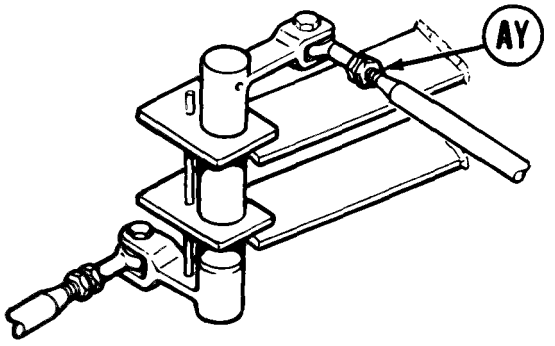


RIGHT REAR OF ENGINE COMPARTMENT

70. Using 7/16 inch socket, remove five screws (AP), lockwashers (AQ), and two flat washers (AR).

71. Using hands remove seal assembly (AS) and shield (AT).





FORWARD OUTBOARD LINK ASSEMBLY

72. Try to insert locating pin (AU) into alinement holes in bracket (AV) and link (AW). If locating pin (AU) can be inserted, go to step 103. If locating pin cannot be inserted, go on to step 73.

73. Using 9/16 inch wrench, loosen jamnuts (AX) and (AY).

74. Using 9/16 inch wrench, remove screw (AZ).

75. Using hands move clevis (BA) and insert locating pin (AU) into alinement holes in bracket (AV) and link (AW).

Go on to Sheet 15

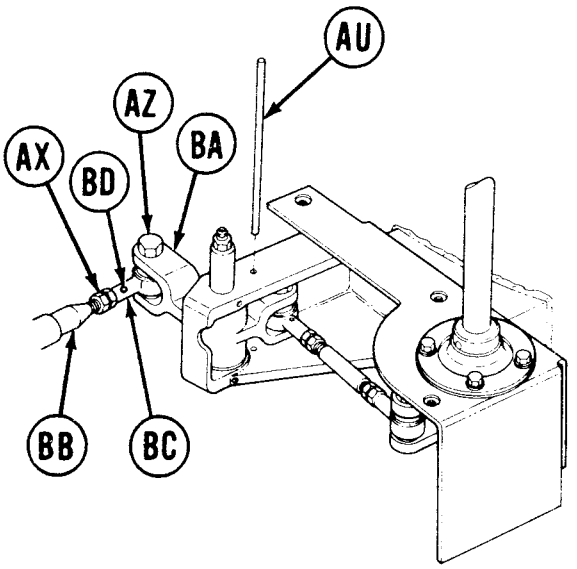
TA249331

SHIFT LINKAGE ADJUSTMENT (Sheet 15 of 28)

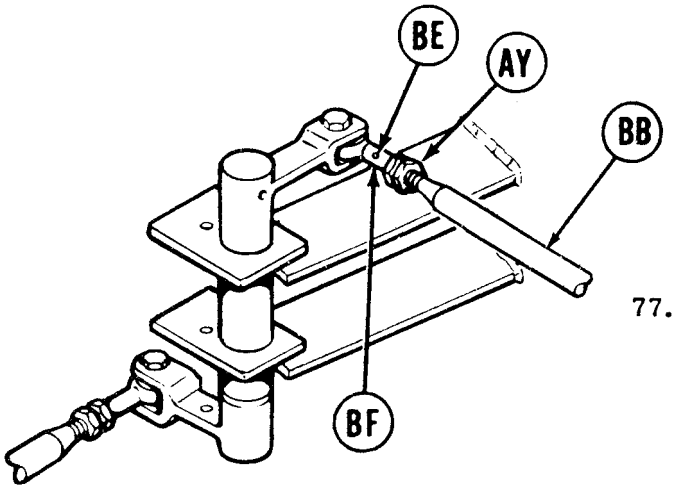
NOTE

Do not allow shifting rod (BB) to turn while doing step 76. Shifting rod (BB) is made up of more than one piece and may come apart if allowed to turn.

76. Using 9/16 inch wrench, adjust shifting rod bearing end (BC) by turning clockwise or counterclockwise until screw (AZ) will drop freely through clevis (BA) and shifting rod bearing end (BC).



RIGHT REAR OF
ENGINE COMPARTMENT



FORWARD OUTBOARD
LINK ASSEMBLY

77. Using small diameter wire, check to see if shifting rod (BB) is past holes (BD) and (BE). If shifting rod (BB) is past holes (BD) and (BE), do steps 78 thru 80. If shifting rod (BB) is not past hole (BD), do steps 82 thru 91. If shifting rod (BB) is not past hole (BE), go on to step 92.

78. Using 9/16 inch wrench, install screw (AZ).

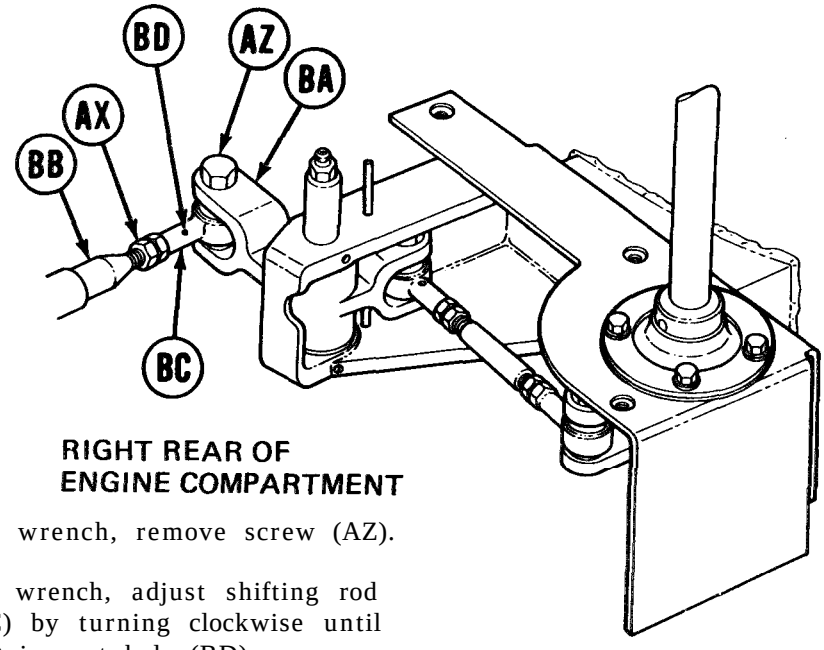
79. Holding rod bearing ends (BC) and (BF) with 9/16 inch wrench, use torque wrench and 9/16 inch crow foot adapter to tighten jamnuts (AX) and (AY) to 16-18 lb-ft (22-24 N·m) and remove locating pin (AU) from alinement holes.

80. Using torque wrench and 9/16 inch socket, tighten screw (AZ) to 16-18 lb-ft (22-24 N·m) and go to step 103.

Go on to Sheet 16

TA249332

SHIFT LINKAGE ADJUSTMENT (Sheet 16 of 28)

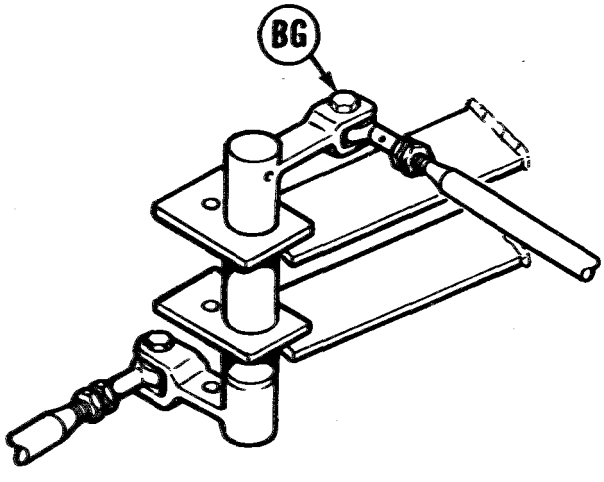


RIGHT REAR OF
ENGINE COMPARTMENT

81. Using 9/16 inch wrench, remove screw (AZ).

82. Using 9/16 inch wrench, adjust shifting rod bearing end (BC) by turning clockwise until shifting rod (BB) is past hole (BD).

83. Using 9/16 inch wrench, remove screw (BG).



FORWARD OUTBOARD
LINK ASEMBLY

84. Using 9/16 inch wrench, install screw (AZ) through clevis (BA) and shifting rod bearing end (BC).

85. Holding rod bearing end (BC) with 9/16 inch wrench, use torque wrench and 9/16 inch crowfoot adapter to tighten jamnut (AX) to 16-18 lb-ft (22-24 N·m).

86. Using torque wrench and 9/16 inch socket, tighten screw (AZ) to 16-18 lb-ft (22-24 N·m).

Go on to Sheet 17

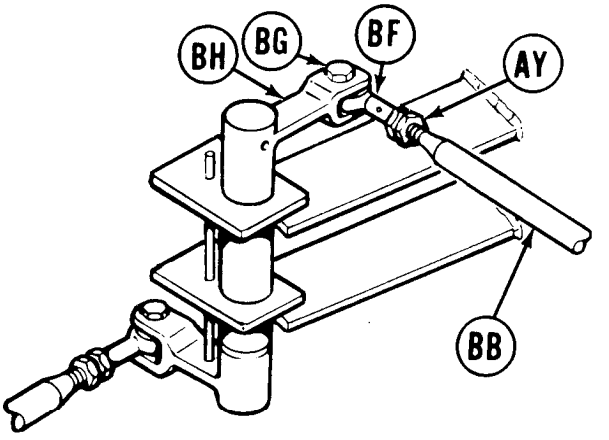
TA249333

SHIFT LINKAGE ADJUSTMENT (Sheet 17 of 28)

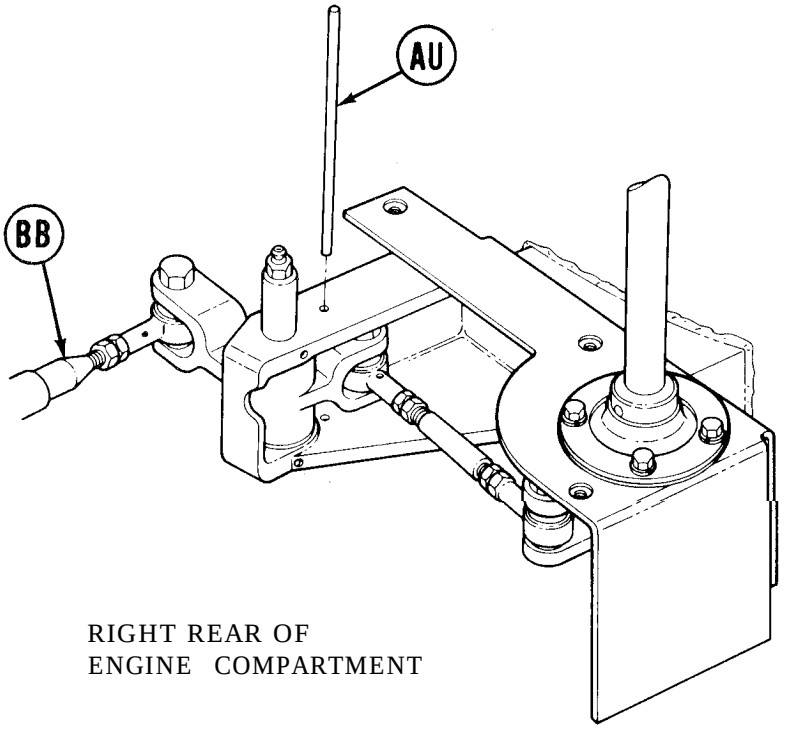
NOTE

Do not allow shifting rod (BB) to turn while doing step 87. Shifting rod (BB) is made up of more than one piece and may come apart if allowed to turn.

87. Using 9/16 inch wrench, adjust shifting rod bearing end (BF) by turning clockwise or counterclockwise until screw (BG) will drop freely through clevis (BH) and shifting rod bearing end (BF).



FORWARD OUTBOARD
LINK ASSEMBLY



RIGHT REAR OF
ENGINE COMPARTMENT

88. Using 9/16 inch wrench, install screw (BG).

89. Holding rod bearing end (BF) with 9/16 inch wrench, use torque wrench and 9/16 inch crow-foot adapter to tighten jamnut (AY) to 16-18 lb-ft (22-24 N·m).

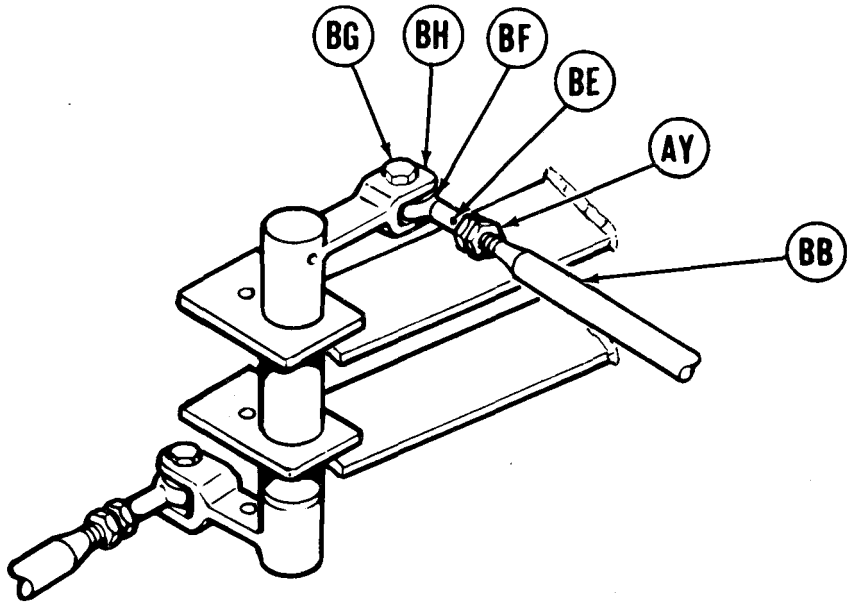
90. Remove locating pin (AU) from alinement holes.

91. Using torque wrench and 9/16 inch socket, tighten screw (BG) to 16-18 lb-ft (22-24 N·m) and go on to step 103.

TA249334

Go on to Sheet 18

SHIFT LINKAGE ADJUSTMENT (Sheet 18 of 28)



FORWARD OUTBOARD
LINK ASSEMBLY

92. Using 9/16 inch wrench, remove screw (BG).

NOTE

Do not allow shifting rod (BB) to turn while doing step 93. Shifting rod (BB) is made up of more than one piece and may come apart if allowed to turn.

93. Using 9/16 inch wrench, adjust shifting rod bearing end (BF) by turning clockwise until shifting rod (BB) is past hole (BE).

94. Using 9/16 inch wrench, install screw (BG) through clevis (BH) and shifting rod bearing end (BF).

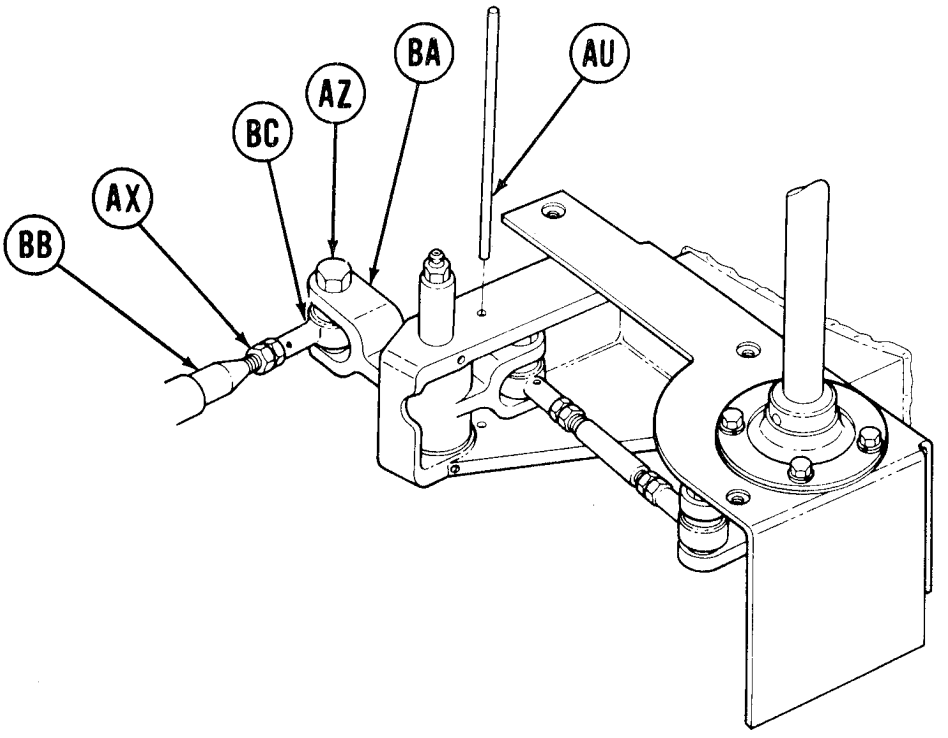
95. Holding rod bearing end (BF) with 9/16 inch wrench use torque wrench and 9/16 inch crow foot adapter to tighten jamnut (AY) to 16-18 lb-in (N·m).

96. Using torque wrench and 9/16 inch socket, tighten screw (BG) to 16-18 lb-ft (22-24 N·m).

Go on to Sheet 19

TA249335

SHIFT LINKAGE ADJUSTMENT (Sheet 19 of 28)



RIGHT REAR OF
ENGINE COMPARTMENT

97. Using 9/16 inch wrench, remove screw (AZ).

NOTE

Do not allow shifting rod (66) to turn while doing step 98. Shifting rod (66) is made up of more than one piece and may come apart if allowed to turn.

98. Using 9/16 inch wrench, adjust shifting rod bearing rod end (BC) by turning clockwise or counterclockwise, until screw (AZ) will drop freely through clevis (BA) and shifting rod bearing end (BC).

99. Using 9/16 inch wrench, install screw (AZ).

100. Holding rod bearing end (BC) with 9/16 inch wrench, use torque wrench and 9/16 inch crow foot adapter to tighten jamnut (AX) to 16-18 lb-ft (22-24 N·m).

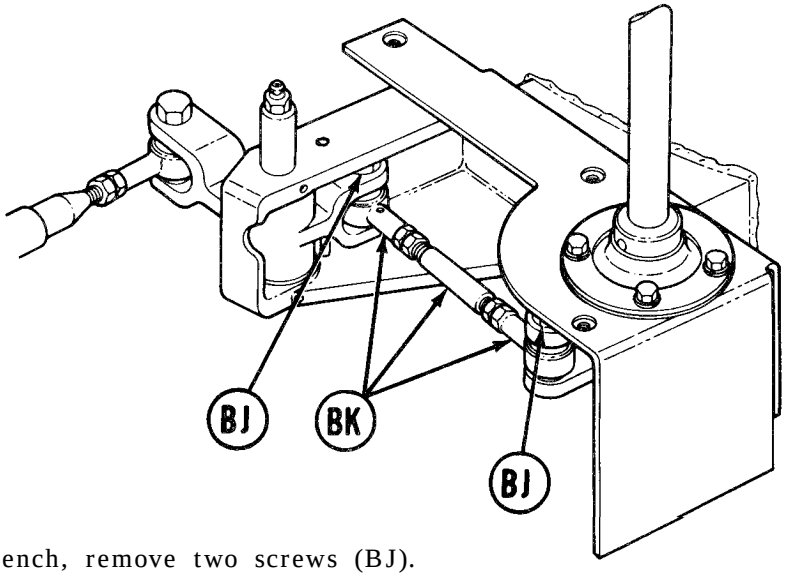
101. Remove locating pin (AU) from alinement holes.

102. Using torque wrench and 9/16 inch socket, tighten screw (AZ) to 16-18 lb-ft (22-24 N·m).

Go on to Sheet 20

TA249336

SHIFT LINKAGE ADJUSTMENT (Sheet 20 of 28)

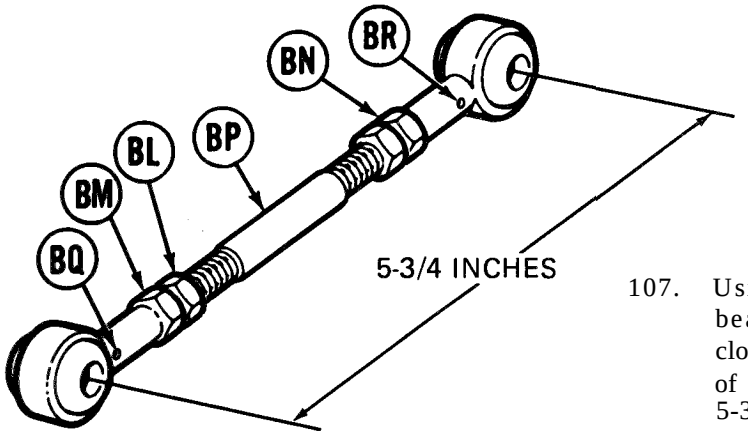


103. Using 9/16 inch wrench, remove two screws (BJ).

104. Using fingers remove stud and rod end bearing assembly (BK).

105. Using 6 inch rule, measure center to center distance between rod end holes. If measurement is 5-3/4 inches, assembly is in adjustment and go to step 120. If measurement is not 5-3/4 inches, go on to step 106.

106. Using vise and 9/16 inch wrench, loosen jamnut (BL).



107. Using vise and 9/16 inch wrench, turn rod bearing end (BM) clockwise or counterclockwise until distance between centers of rod bearing ends (BM) and (BN) measures 5-3/4 inches.

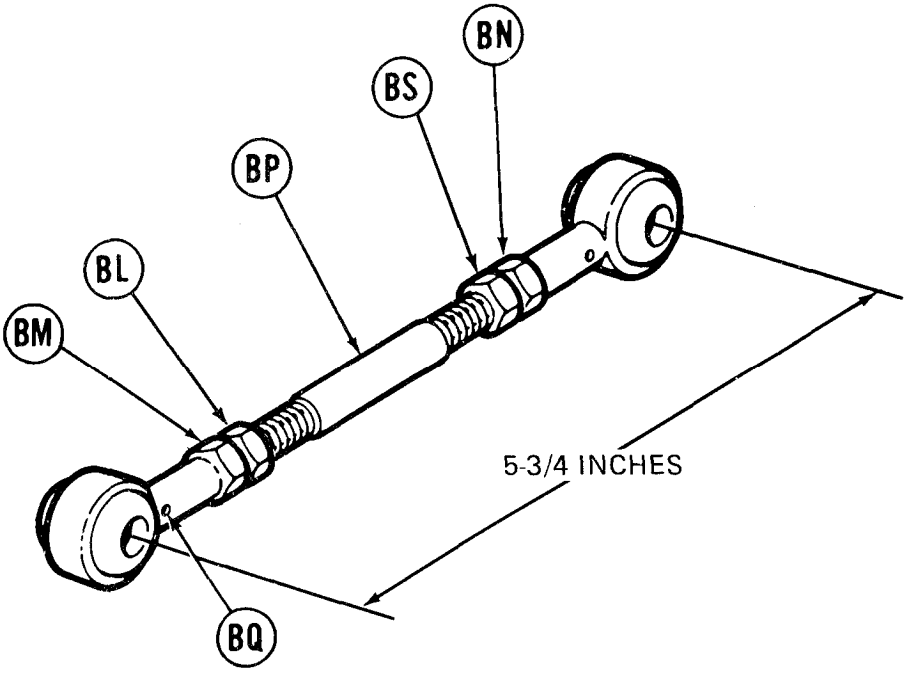
108. Using small diameter wire, check to see if rod (BP) is past holes (BQ) and (BR). If rod (BP) is past holes (BQ) and (BR), go on to step 109. If rod (BP) is not past hole (BQ), do steps 110 thru 114. If rod (BP) is not past hole (BR), go on to step 115.

109. Using vise, torque wrench, and 9/16 inch crowfoot adapter, tighten jamnut (BL) to 16-18 lb-ft (22-24 N·m) while maintaining 5-3/4 inch measurement. Go on to step 120.

Go on to Sheet 21

TA249337

SHIFT LINKAGE ADJUSTMENT (Sheet 21 of 28)



110. Using 9/16 inch wrench, turn rod bearing end (EM) clockwise until rod (BP) is past hole (BQ).

111. Using vise, torque wrench, and 9/16 inch crow foot adapter, tighten jamnut (BL) to 16-18 lb-ft (22-24 N·m).

112. Using vise and 9/16 inch wrench, loosen jamnut (BS).

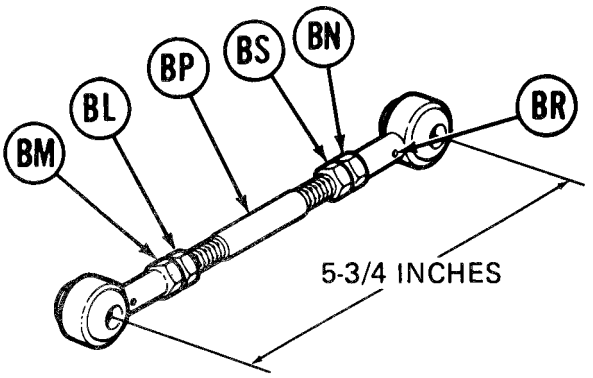
113. Using vise and 9/16 inch wrench, turn rod bearing end (BN) clockwise or counterclockwise until distance between centers of rod end bearings (BM) and (BN) measures 5-3/4 inches.

114. Using vise, torque wrench, and 9/16 inch crow foot adapter, tighten jamnut (BS) to 16-18 lb-ft (22-24 N·m) while maintaining 5-3/4 inch measurement. Go to step 120.

Go on to Sheet 22

TA249338

SHIFT LINKAGE ADJUSTMENT (Sheet 22 of 28)

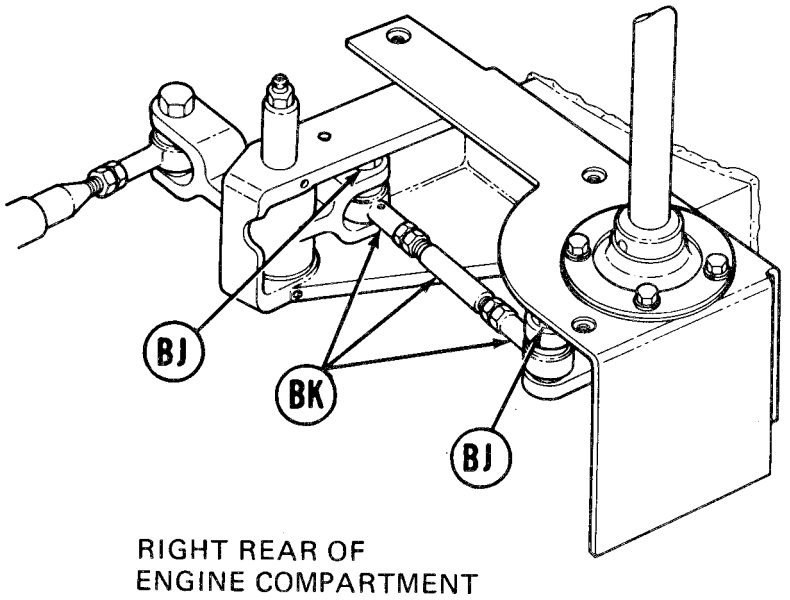


115. Using vise and 9/16 inch wrench, loosen jamnut (BS).

116. Using 9/16 inch wrench, turn rod bearing end (BN) clockwise until rod (BP) is past hole (BR).

117. Using vise, torque wrench, and 9/16 inch crowfoot adapter, tighten jamnut (BS) to 16-18 lb-ft (22-24 N·m).

118. Using 9/16 inch wrench, turn rod bearing end (BM) clockwise or counterclockwise until distance between centers of rod bearing ends (BM) and (BN) measures 5-3/4 inches.



119. Using vise, torque wrench, and 9/16 inch crowfoot adapter, tighten jamnut (BL) to 16-18 lb-ft (22-24 N·m) while maintaining 5-3/4 inch measurement.

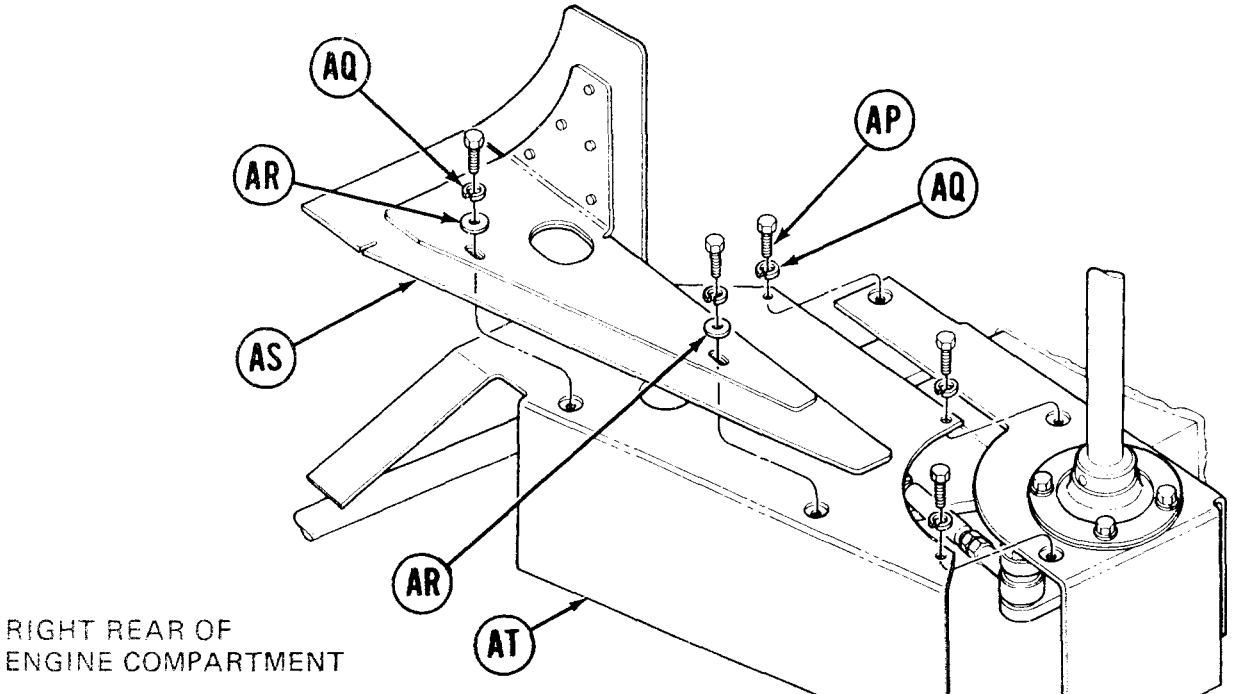
120. Using fingers install stud and rod end bearing assembly (BK).

121. Using 9/16 inch wrench, install two screws (BJ).

Go on to Sheet 23

TA249339

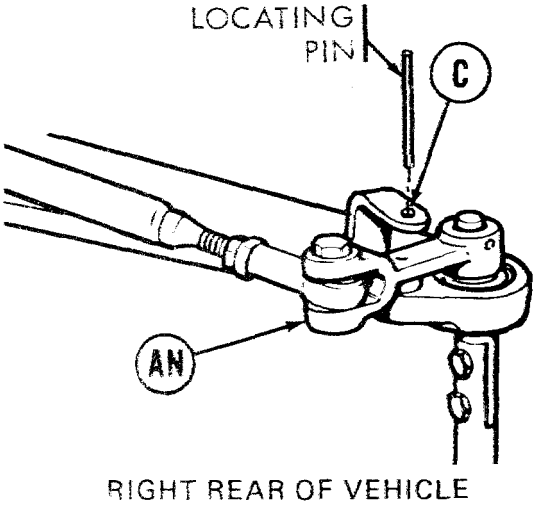
SHIFT LINKAGE ADJUSTMENT (Sheet 23 of 28)



122. Using hands position shield (AT) and seal assembly (AS).

123. Using 7/16 inch socket install five screws (AP), two flat washers (AR), and five lockwashers (AQ) to secure seal assembly (AS) and shield (AT).

124. Install powerplant (page 5-14)



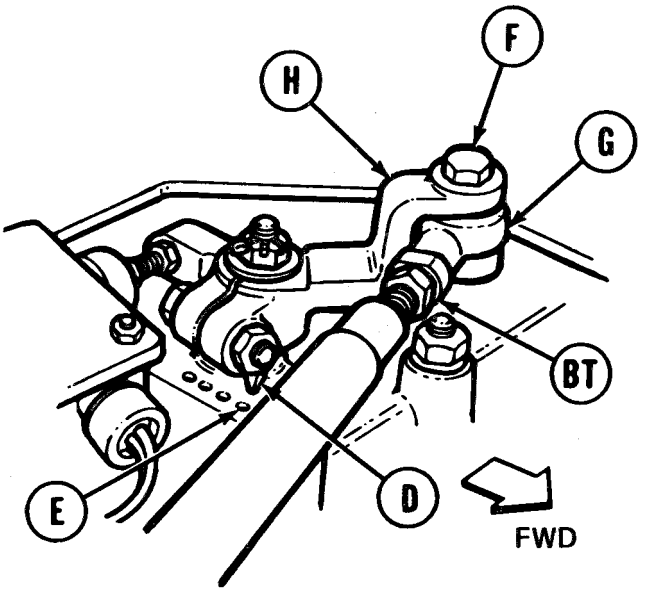
125. At top of transmission, try to insert locating pin in alinement hole (C) and through link (AN). If locating pin can be inserted, go on to step 126. If locating pin cannot be inserted go to step 127.

Go on to Sheet 24

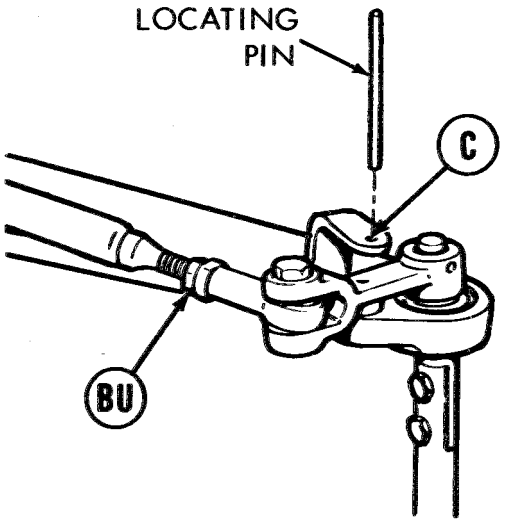
TA249340

SHIFT LINKAGE ADJUSTMENT (Sheet 24 of 28)

126. At top of transmission, check position of shifting position indicator (D). If shifting position indicator (D) is pointing to forward most dot (E), linkage is in adjustment. Go to step 156. If shifting position indicator (D) is not pointing to most forward dot (E), go on to step 127.



TOP OF TRANSMISSION



RIGHT REAR OF VEHICLE

127. Using 9/16 inch wrench, loosen jamnuts (BT) and (BU).

128. Using 9/16 inch wrench, remove screw (F) if not removed in step 4.

129. Manually move shifting position indicator

130. Insert locating pin alinement hole (C), if not inserted in step 125.

NOTE

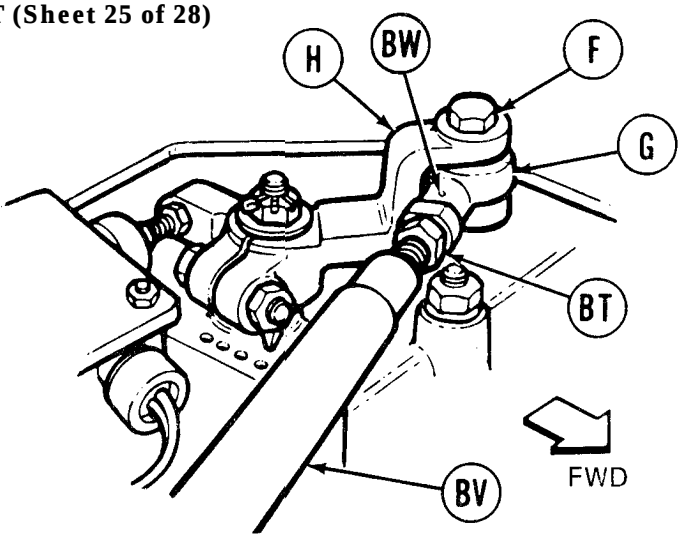
It may be necessary to move shifting position indicator (D) to rear most dot to adjust shifting rod bearing end (G) and then back forward most dot (E) to check adjustment in step 131.

131. Using 9/16 inch wrench, adjust shifting rod bearing end (G) by turning clockwise or counter-clockwise unitl screw (F) will drop freely through shifting rod bearing end (G) and clevis (H).

Go on to sheet 25

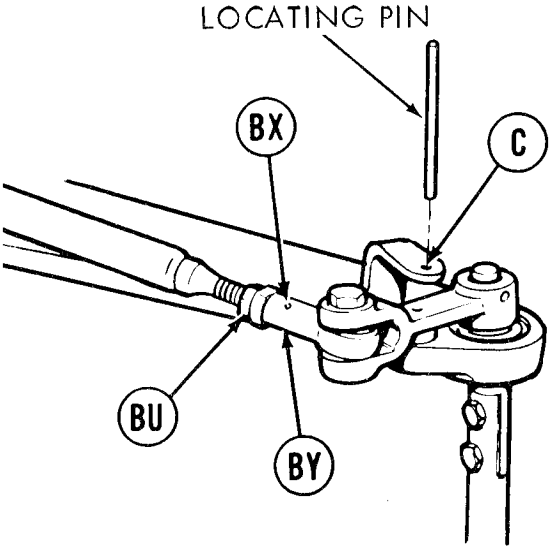
TA249341

SHIFT LINKAGE ADJUSTMENT (Sheet 25 of 28)



TOP OF TRANSMISSION

132. Using small diameter wire, check to see if shifting rod (BV) is past holes (BW) and (BX). If shifting rod (BV) is past holes (BW) and (BX), do steps 133 thru 136. If shifting rod (BV) is not past hole (BW), do steps 137 thru 146. If shifting rod (BV) is not past hole (BX), go on to step 147.



RIGHT REAR OF VEHICLE

133. Using 9/16 inch wrench, install screw (F) through clevis (H) and shifting rod bearing end (G).

134. Holding rod bearing ends (G) and (BY) with 9/16 inch wrench, use torque wrench and 9/16 inch crowfoot adapter to tighten jamnuts (BT) and (BU) to 16-18 lb-ft (22-24 N·m).

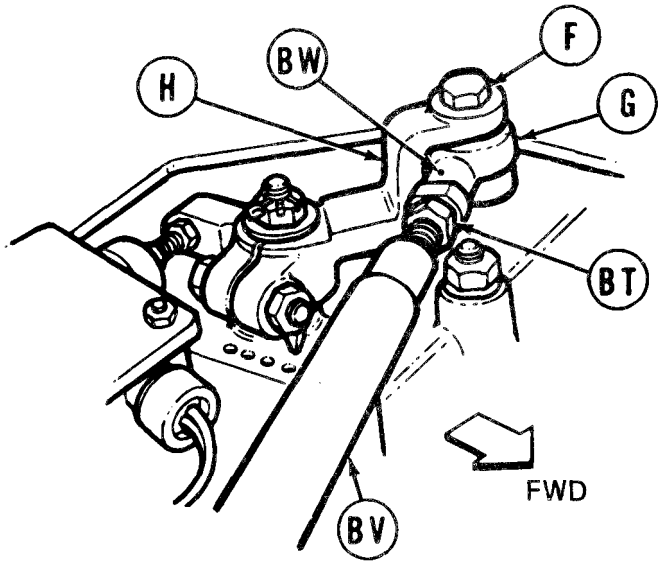
135. Remove locating pin from alinement hole (C).

136. Using torque wrench and 9/16 inch socket, tighten screw (F) to 16-18 lb-ft (22-24 N·m) and go to step 156.

Go on to Sheet 26

TA249342

SHIFT LINKAGE ADJUSTMENT (Sheet 26 of 28)

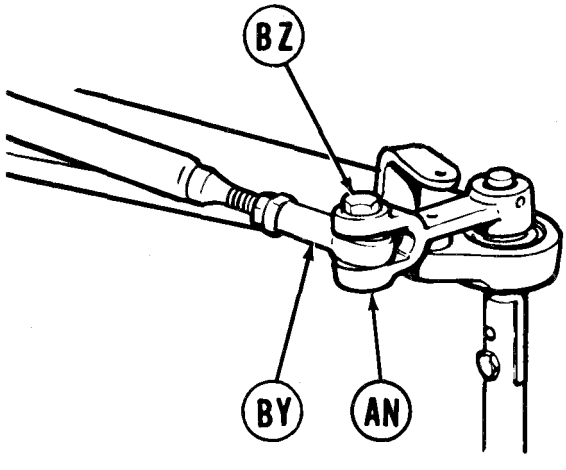


TOP OF TRANSMISSION

137. Using 9/16 inch wrench, adjust shifting rod bearing end (G) by turning clockwise until shifting rod (BV) is past hole (BW).

138. Using 9/16 inch wrench, remove screw (BZ) and remove shifting rod bearing end (BY) from clevis (AN).

139. Using 9/16 inch wrench, install screw (F) through clevis (H) and shifting rod bearing end (G).



RIGHT REAR OF VEHICLE

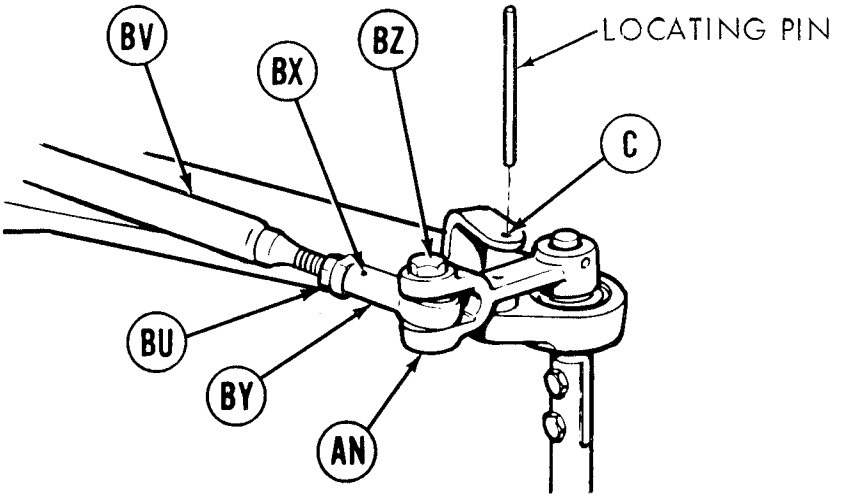
140. Holding rod bearing end (G) with 9/16 inch wrench, use torque wrench and 9/16 inch crowfoot adapter to tighten jamnut (BT) to 16-18 lb-ft (22-24 N·m).

141. Using torque wrench and 9/16 inch socket, tighten screw (F) to 16-18 lb-ft (22-24 N·m).

Go on to Sheet 27

TA249343

SHIFT LINKAGE ADJUSTMENT (Sheet 27 of 28)



RIGHT REAR OF VEHICLE

142. Using 9/16 inch wrench, adjust shifting rod bearing end (BY) by turning clockwise or counterclockwise until screw (BZ) will drop freely through clevis (AN) and shifting rod bearing end (BY).

143. Using 9/16 inch wrench, install screw (BZ) through clevis (AN) and shifting rod bearing end (BY).

144. Holding rod bearing end (BY) with 9/16 inch wrench, use torque wrench and 9/16 inch crowfoot adapter to tighten jamnut (BU) to 16-18 lb-ft (22-24 N·m).

145. Remove locating pin from alinement hole (C).

146. Using torque wrench and 9/16 inch socket, tighten screw (BZ) to 16-18 lb-ft (22-24 N·m) and go to step 156.

147. Using 9/16 inch wrench, remove screw (BZ) and remove shifting rod bearing end (BY) from clevis (AN).

148. Using 9/16 inch wrench, adjust shifting rod bearing end (BY) by turning clockwise until shifting rod (BV) is past hole (BX).

149. Using 9/16 inch wrench, install screw (BZ) through clevis (AN) and shifting rod bearing end (BY).

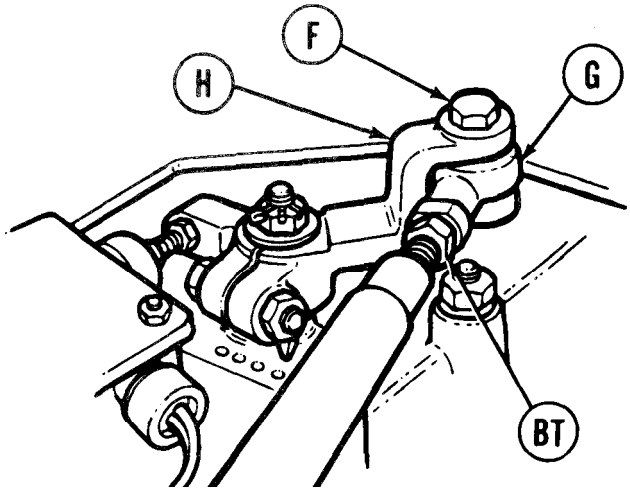
150. Holding rod bearing end (BY) with 9/16 inch wrench, use torque wrench and 9/16 inch crowfoot adapter to tighten jamnut (BU) to 16-18 lb-ft (22-24 N·m).

151. Using torque wrench and 9/16 inch socket, tighten screw (BZ) to 16-18 lb-ft (22-24 N·m).

Go on to Sheet 28

TA249344

SHIFT LINKAGE ADJUSTMENT (Sheet 28 of 28)



TOP OF TRANSMISSION

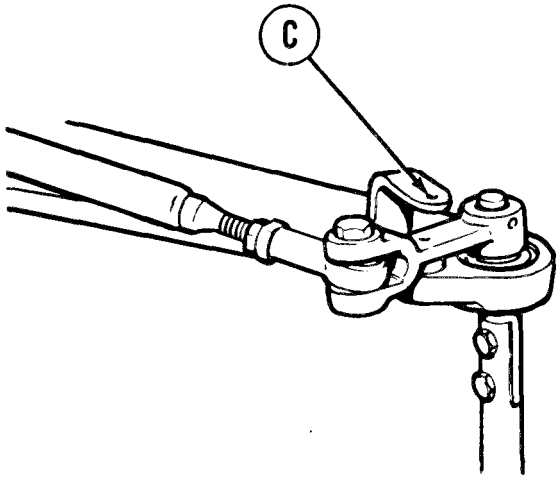
NOTE

It may be necessary to move indicator pointer to rear most positioned dot to adjust rod end, and then back to forward most positioned dot to check adjustment in step 152.

152. Using 9/16 inch wrench, adjust shifting rod bearing end (G) by turning clockwise or counterclockwise until screw (F) will drop freely through clevis (H) and shifting rod bearing end (G).

153. Using 9/16 inch wrench, install screw (F) through clevis (H) and shifting rod bearing end (G).

154. Holding rod bearing end (G) with 9/16 inch wrench, use torque wrench and 9/16 inch crowfoot adapter to tighten jamnut (BT) to 16-18 lb-ft (22-24 N·m).



155. Using torque wrench and 9/16 inch socket, tighten screw (F) to 16-18 lb-ft (22-24 N·m).

156. Remove blocks from tracks.

157. Check shifting pattern response (TM 5-5420-202-10). If transmission still does not shift correctly, notify support maintenance. If transmission does shift correctly, go on to step 158.

158. Install top deck (page 16-23).

159. Install transmission shroud (page 9-6).

TA249345

End of Task

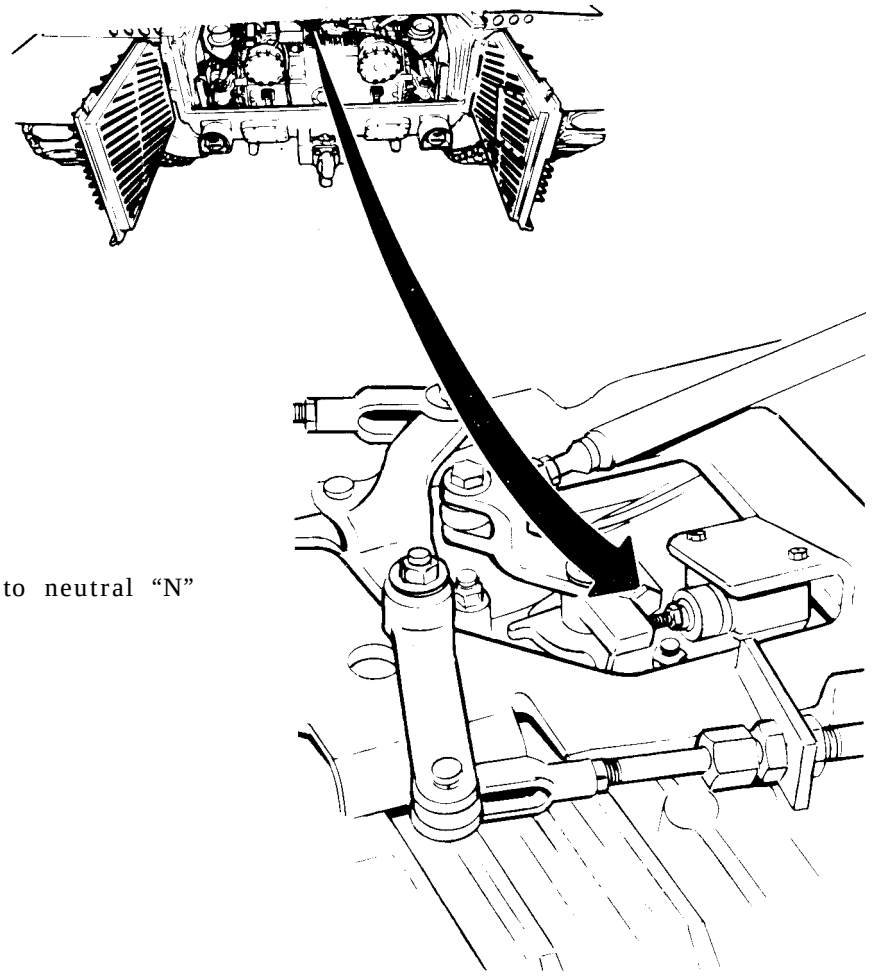
NEUTRAL SHIFT SWITCH ADJUSTMENT (Sheet 1 of 3)

TOOLS: 7/16 in. combination box and open end wrenches (two)

TEST EQUIPMENT: Multimeter

REFERENCE: TM 5-5420-226-10

PRELIMINARY PROCEDURE: Remove transmission shroud (page 9-2)



ADJUSTMENT:

1. Set transmission lever to neutral “N” (TM 5-5420-202-10).

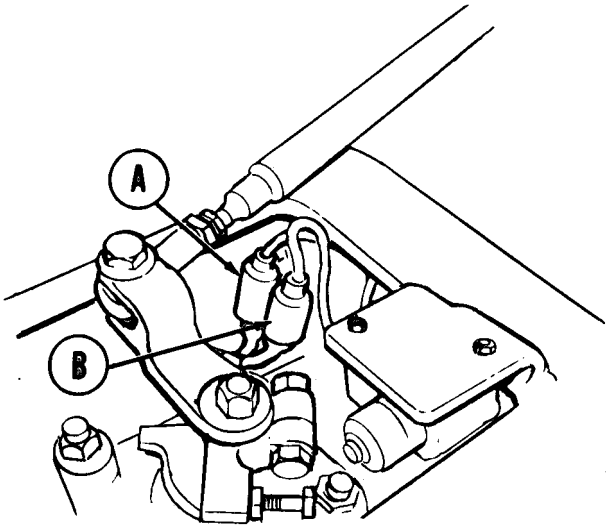
Go on to Sheet 2

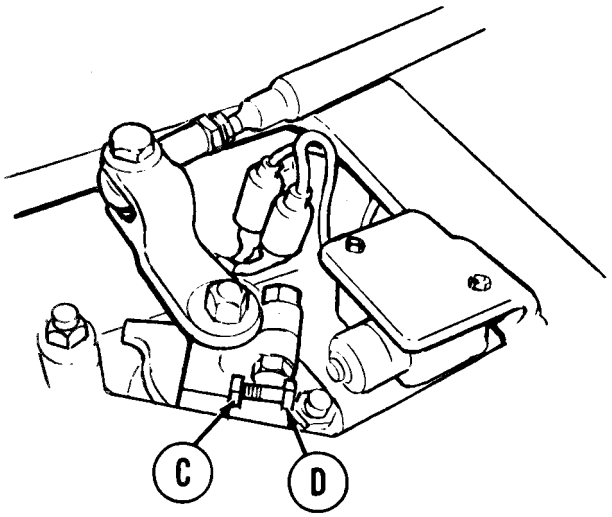
TA249346

NEUTRAL SHIFT SWITCH ADJUSTMENT (Sheet 2 of 3)

2. Disconnect electrical connectors (A) and (B).

3. Set up multimeter for continuity test.

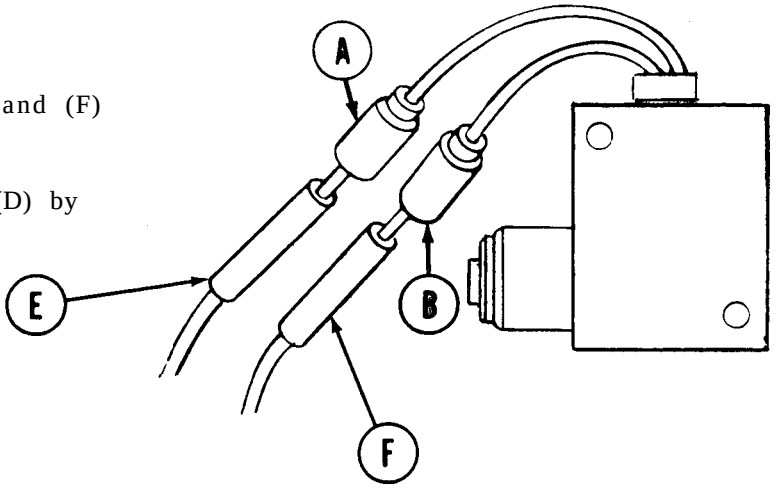




4. Using two wrenches, loosen jamnut (C) while holding screw (D).

5. Connect multimeter leads (E) and (F) to connectors (A) and (B).

6. Using wrench, shorten screw (D) by turning clockwise.



Go on to Sheet 3

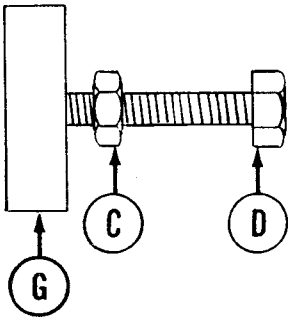
TA249347

NEUTRAL SHIFT SWITCH ADJUSTMENT (Sheet 3 of 3)

7. Lengthen screw (D) until meter just reads zero.

8. Lengthen screw (D) by three complete turns.

9. Using two wrenches, tighten jamnut (C) toward bracket (G) while holding screw (D).



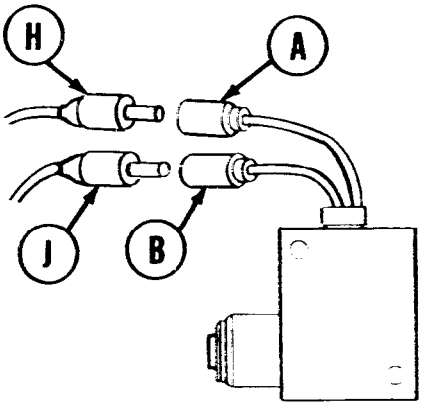
10. Set transmission lever to other positions; meter should read zero in neutral "N" and park "P" only. Replace neutral shift switch (page 10-236) if any other readings are found.

11. Disconnect meter probes from electrical connectors.

12. Connect connectors (A) and (B) to (H) and (J).

13. Test adjustment by attempting to start engine in all transmission lever positions. Engine should start only in neutral "N" and park "P" positions.

14. Install transmission shroud (page 9-6).



End of Task

TA249348

SERVOBANDS ADJUSTMENT (Sheet 1 of 3)

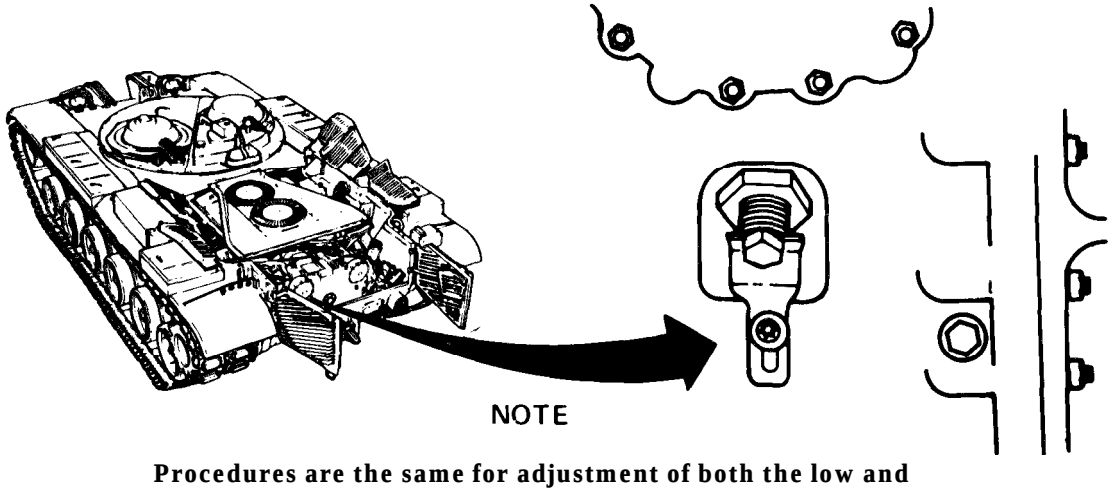
TOOLS: Torque wrench with 1/2 in. drive (0 to 175 lb-ft) (0 to 237 N·m)
9/16 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
1-1/16 in. socket with 1/2 in. drive
1-1/16 in. open end wrench

SPECIAL TOOLS: Socket wrench socket (Item 6, Chapter 3, Section I)

SUPPLIES: Self-locking bolt

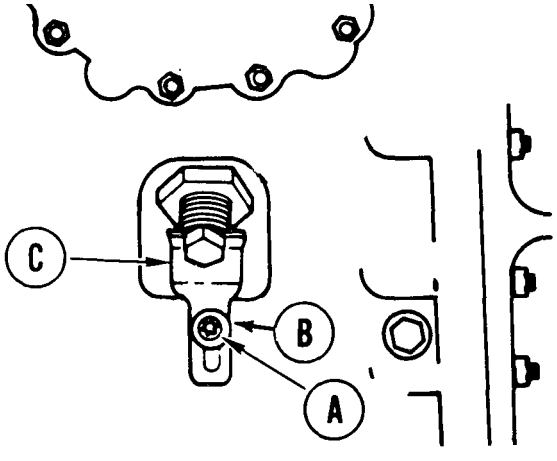
REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Set shift lever in "P" park position (TM 5-5420-202-10)
Remove transmission shroud (page 9-2)



NOTE

Procedures are the same for adjustment of both the low and reverse bands.

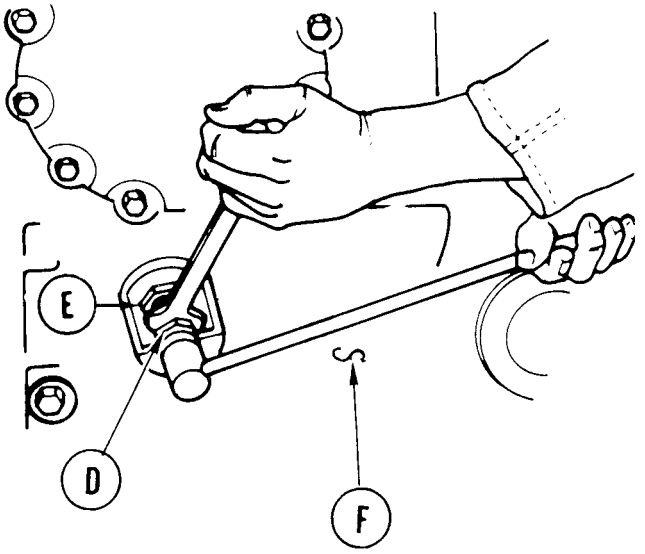


1. Using 9/16 inch socket, remove self-locking bolt (A) and washer (B) holding lock plate (C). Remove lock plate (C). Throw self-locking bolt (A) away.

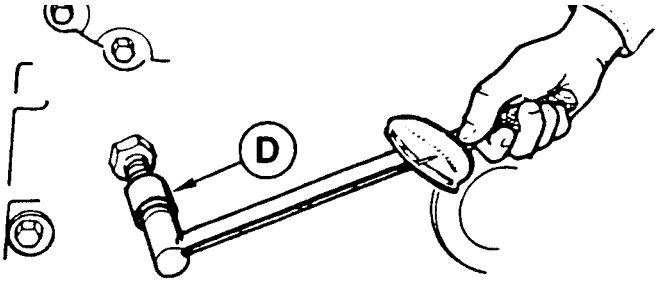
Go on to Sheet 2

SERVOBANDS ADJUSTMENT (Sheet 2 of 3)

2. Using 1-1/16 inch wrench to hold adjusting screw (D) and socket wrench socket on locknut (E), loosen locknut (E) enough to allow adjustment of adjusting screw (D) without locknut (E) coming in contact with transmission case (F).

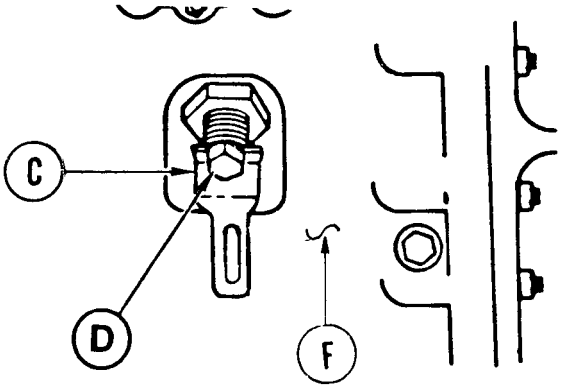


3. Using torque wrenchand 1-1/16 inch socket on adjusting screw (D), torque adjusting screw (D) 25-30 lb-ft (34-41 N·m).



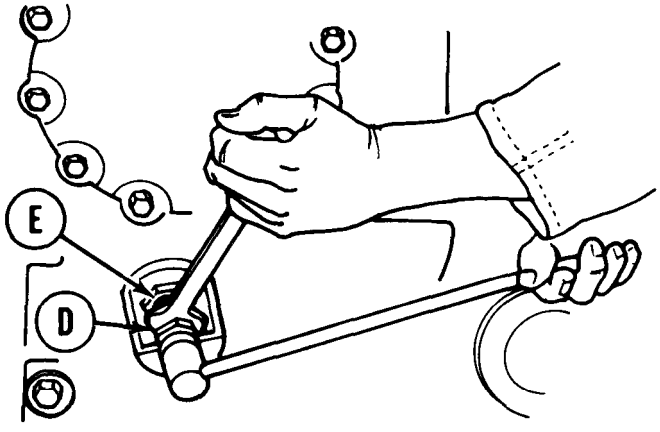
4. Back off adjusting screw (D) to nearest flat that will aline with lock plate (C) when lock plate (C) is installed.

5. Scribe mark on adjusting screw (D) and transmission case (F) to record alined position.



Go on to Sheet 3

SERVOBANDS ADJUSTMENT (Sheet 3 of 3)



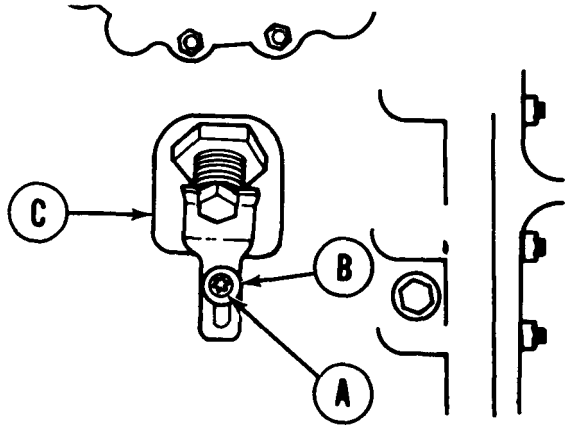
6. Use 1-1/16 inch wrench to hold adjusting screw (D), while using torque wrench and socket wrench socket to torque locknut (E) to 145-155 lb-ft (197-210 N·m).

7. Check scribe mark on adjusting screw (D) and transmission case (F) for alinement. If not in alinement, repeat complete adjustment procedure.

8. Position lock plate (C) over adjusting screw (D) and secure using new self-locking bolt (A) and washer (B).

9. Wing 9/16 inch socket, and torque wrench, tighten self-locking bolt (A) to 18-22 lb-ft (25-29 N·m).

10. Install transmission shroud (page 9-6).



End of Task

THRUST WASHER BEARING SEAL (OUTPUT FLANGE) (Sheet 1 of 2)

PROCEDURE INDEX

TOOLS:
7/8 in. socket with ½ in. drive
½ in. drive breaker bar
Diagonal pliers
Machinists hammer
Brass drift
½ in. drive torque wrench
Mechanical puller

SUPPLIES:
Nonelectrical wire
Wooden block
Grease (Item 38, Appendix D)

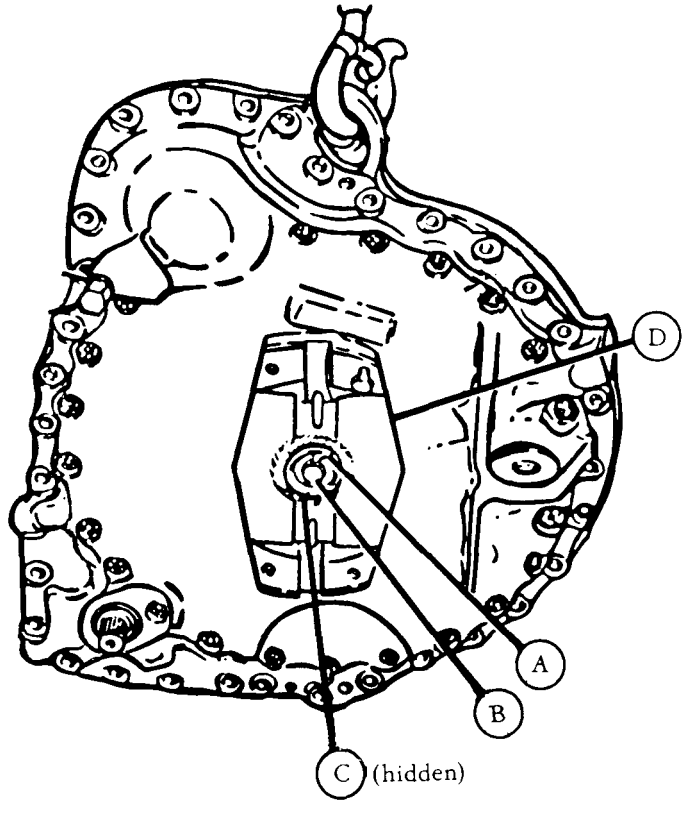
PRELIMINARY PROCEDURES:
Remove powerplant (page 5-2)
Remove universal joint (page 12-16)

REMOVAL:

1. Using diagonal pliers, remove nonelectrical wire (A) from thrust washer bearing screw (B).

2. Using $^{7}/_{8}$, inch socket and breaker bar, remove screw (B), washer (C) and flange (D).

3. Using mechanical puller, remove seal.



Go on to Sheet 2

THRUST WASHER BEARING SEAL (OUTPUT FLANGE) (SHEET 2 of 2)

INSTALLATION:

1. Lubricate oil seal (A) with high-temperature grease.

2. Using hammer and wooden block, tap seal (A) into place.

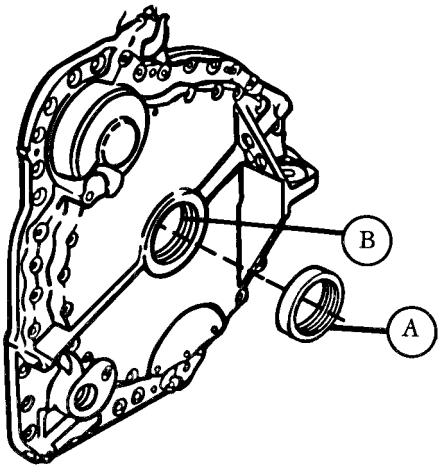
3. Using brass drift, insure seal (A) is seated to the bottom of bore (B).

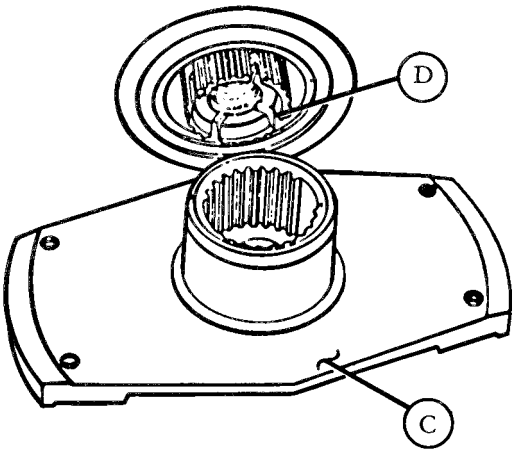
4. Aline -o- mark on output flange (C) with -o- mark on output shaft (D) and install flange (C) on shaft (D) to nearest spline.

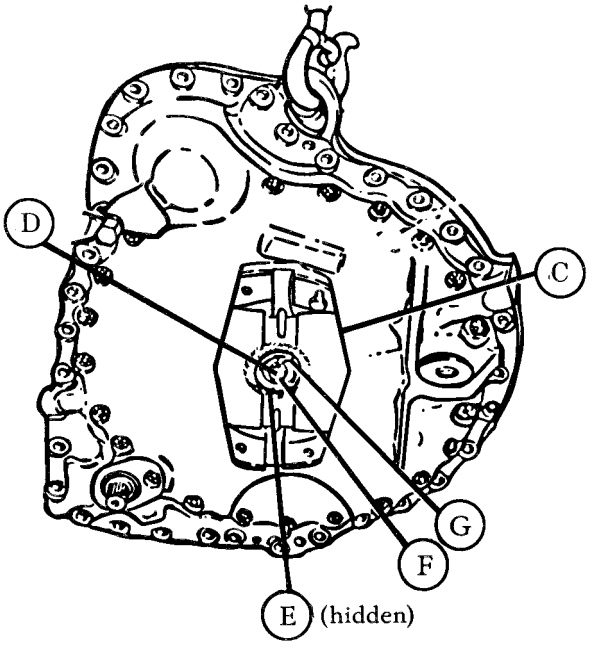
5. Install washer (E) and screw (F) on output shaft (D). Using socket and torque wrench, tighten screw (F) to 150 - 200 ft-lbs(203-271 N·m).

6. Using pliers, install nonelectrical wire (G) to secure screw (F) to flange (C) and trim excess.

End of Task



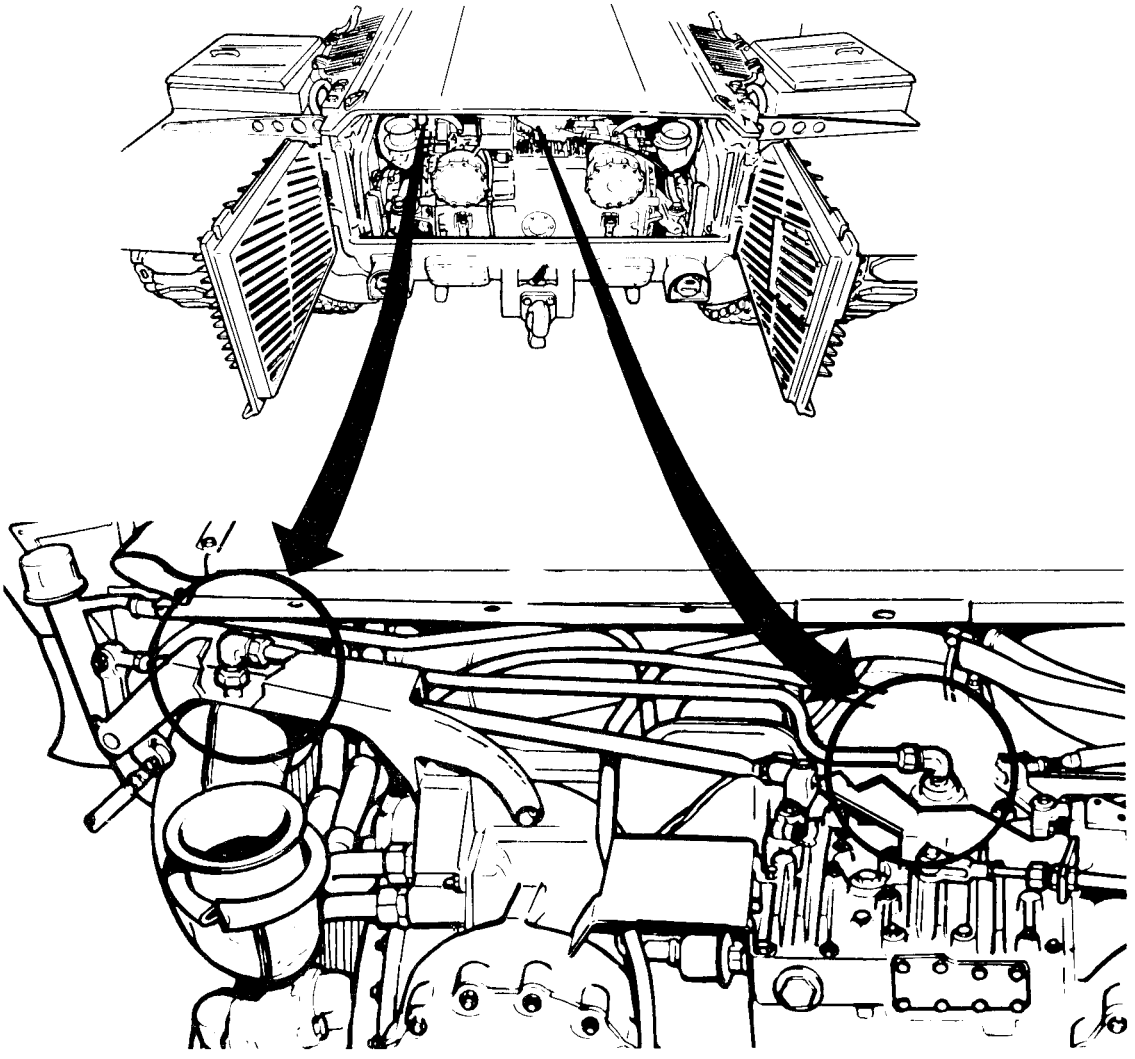




TRANSMISSION OIL BREATHER TUBE REPLACEMENT (Sheet 1 of 3)

TOOLS: 3/4 in. combination box and open end wrench
7/8 in. combination box and open end wrench

PRELIMINARY PROCEDURE: Remove transmission shroud (page 9-2)



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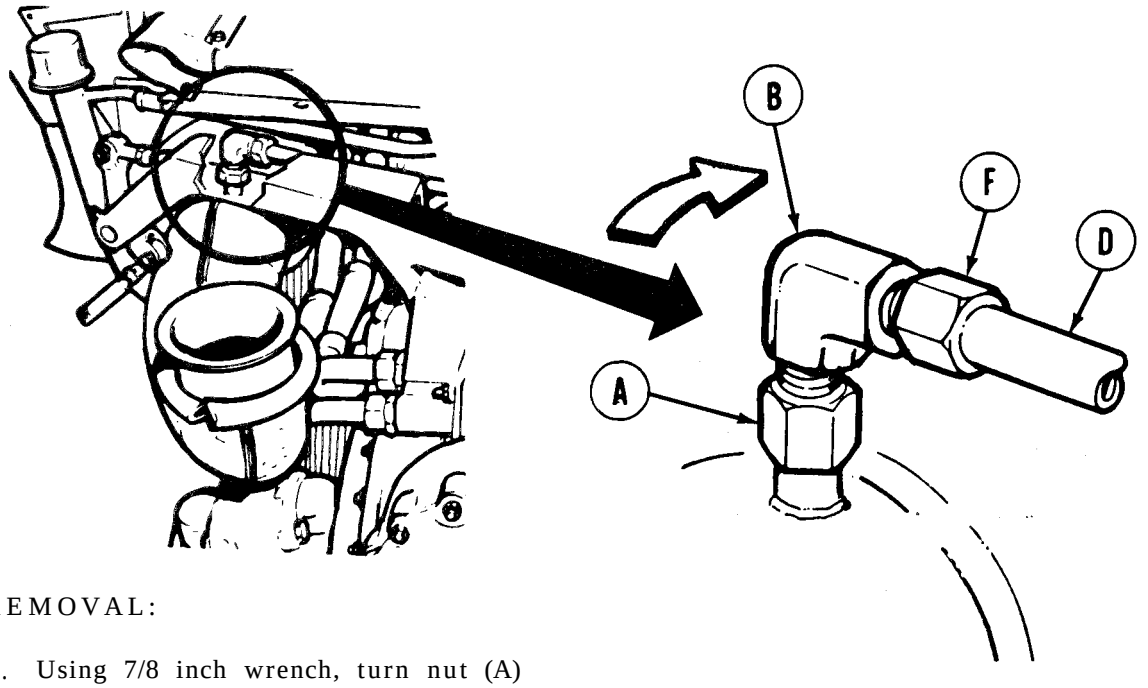
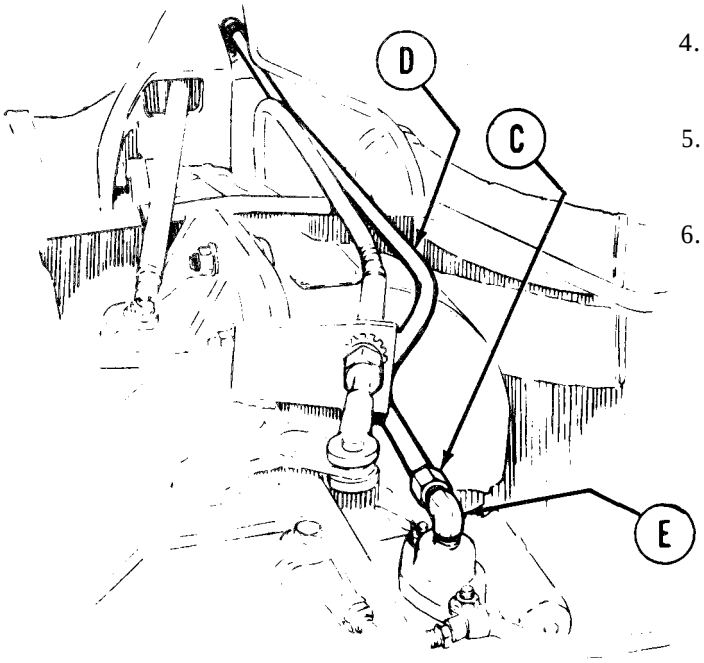
Go on to Sheet 2

TRANSMISSION OIL BREATHER TUBE REPLACEMENT (Sheet 2 of 3)



REMOVAL:

1. Using 7/8 inch wrench, turn nut (A) clockwise until it falls free.
2. Lift elbow (B) off nut (A).
3. Using 7/8 inch wrench, remove coupling nut (C) and transmission oil breather tube (D) from elbow (E).



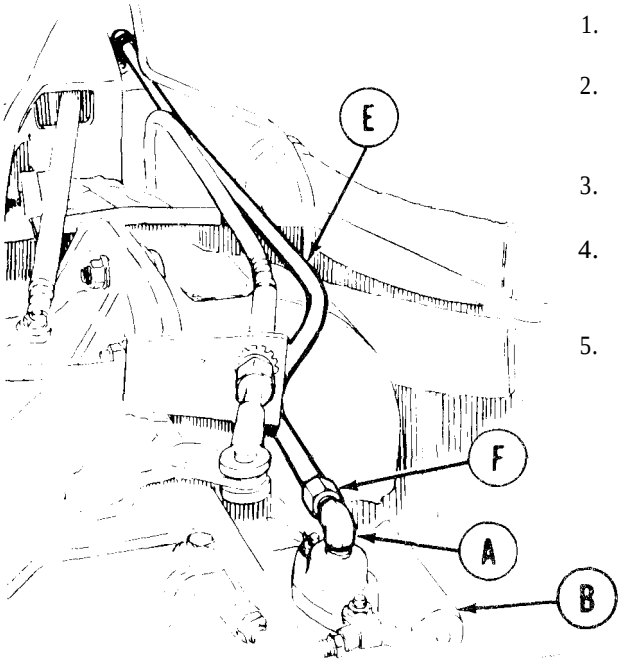
4. Remove transmission oil breather tube (D) from vehicle.
5. Using 7/8 inch wrench on nut (F) and 3/4 inch wrench on elbow (B), remove elbow (B).
6. Using 3/4 inch wrench, remove elbow (E) from transmission.

Go on to Sheet 3

TA249353

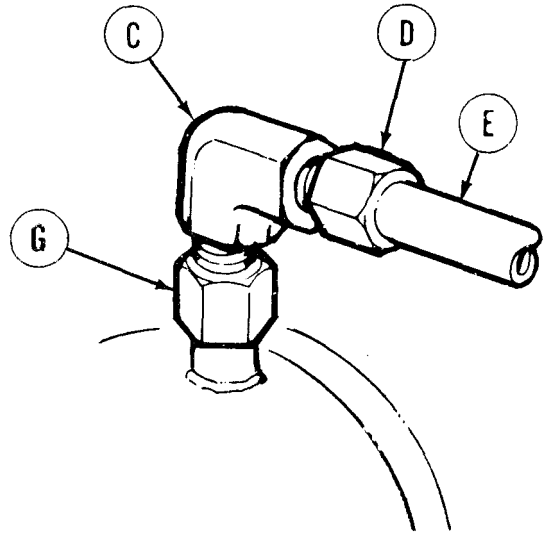
TRANSMISSION OIL BREATHER TUBE REPLACEMENT (Sheet 3 of 3)

INSTALLATION:



1. Using fingers start elbow (A) into transmission (B).
2. Using 3/4 inch wrench, install and aline elbow (A) as shown.
3. Using fingers install elbow (C) into nut (D).
4. Using 7/8 inch wrench on nut (D) and 3/4 inch wrench on elbow (C), tighten nut (D).
5. Position tube (E) between elbow (A) and nut (D). If necessary, use 3/4 inch wrench to aline elbow (A) with nut (F).

   Using fingers start nut (F) on elbow (A) and tighten with 7/8 inch wrench.



7. Using fingers start nut (G) onto elbow (C).
8. Using 7/8 inch wrench, tighten coupling nut (G).
9. Start engine. Check for exhaust leaks at transmission oil breather tube (E) connections.
10. Install transmission shroud (page 9-6).

End of Task

TA249354

TRANSMISSION MAIN OIL FILTER ELEMENT REPLACEMENT (Sheet 1 of 7)

PROCEDURE INDEX

TOOLS: 9/16 in. socket with 1/2 in. drive
7/16 in. socket with 1/2 in. drive
5 in. extension with 1/2 in. drive
1 in. combination box and open end wrench
Torque wrench with 1/2 in. drive
Diagonal cutting pliers
Putty knife
Slip joint pliers
Snapring pliers
Ratchet with 1/2 in. drive

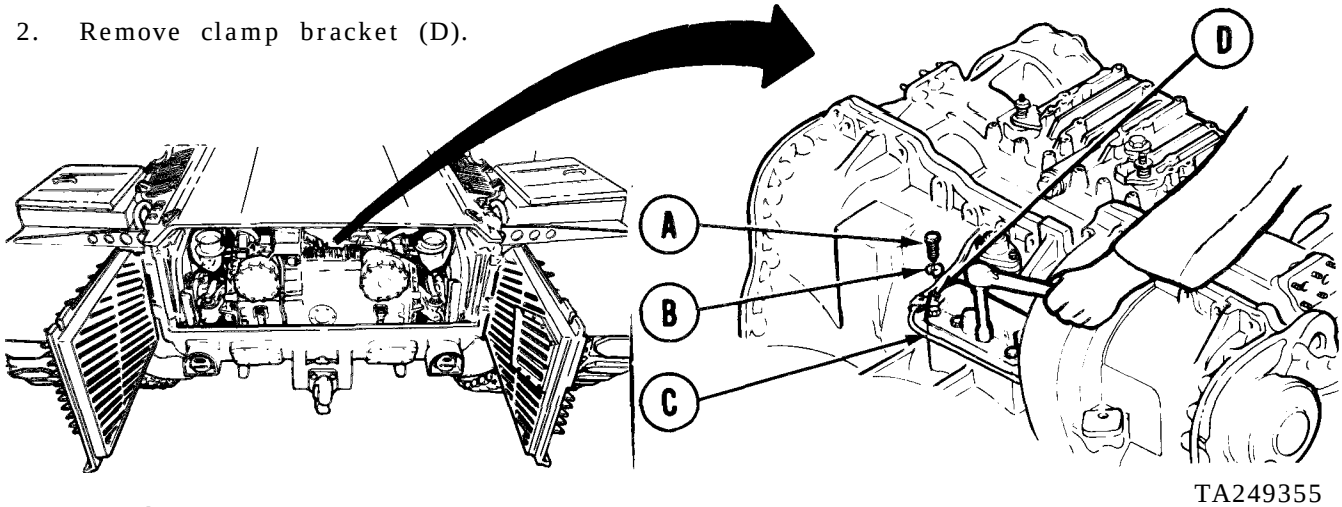
SUPPLIES: Filter cover gasket
Clean rags (Item 65, Appendix D)
Dry cleaning solvent (Item 55, Appendix D)
Locking wire (Item 61, Appendix D)
Two 1/4 in. x 20 NF x 3 in. long bolts
Gloves (Item 69, Appendix D)
Goggles (Item 70, Appendix D)

PRELIMINARY PROCEDURES: Remove top deck (page 16-21)
Remove transmission shroud (page 9-2)

REMOVAL:

NOTE
Some filter assemblies are secured with nuts and threaded studs instead of bolts and lockwashers.

1. Using 9/16 inch socket with 5 inch extension, remove 10 bolts (A) and lockwashers (B) holding filter assembly (C) to front of transmission.
2. Remove clamp bracket (D).



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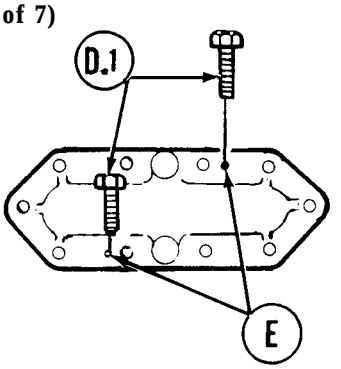
Go on to Sheet 2

TRANSMISSION MAIN OIL FILTER ELEMENT REPLACEMENT (Sheet 2 of 7)

3. Using two 1/4 inch x 20 NF x 3 inch long bolts (D.1) and 7/16 inch socket, loosen filter assembly by installing bolts in holes (E) and tightening evenly to withdraw filter assembly(C).

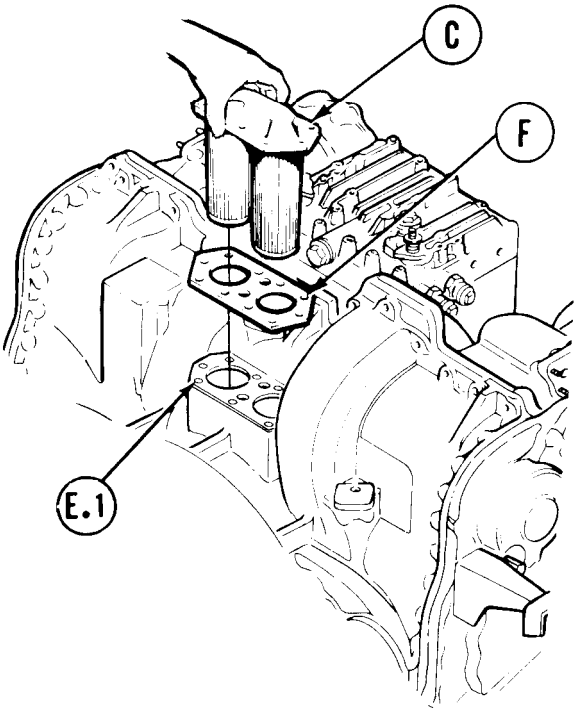


4. Using 7/16 inch socket, remove two 1/4 inch x 20 NF x 3 inch long bolts (D.1) from filters.

NOTE

Lift filter assembly (C) slowly and straight up to reduce the possibility of oil entering bolt holes (E.1).

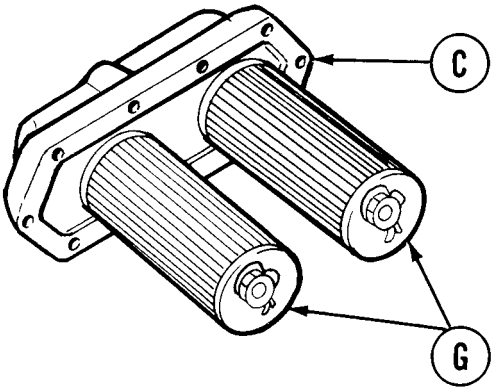
5. Slowly lift filter assembly (C) straight out of transmission. Remove and discard gasket (F).



NOTE

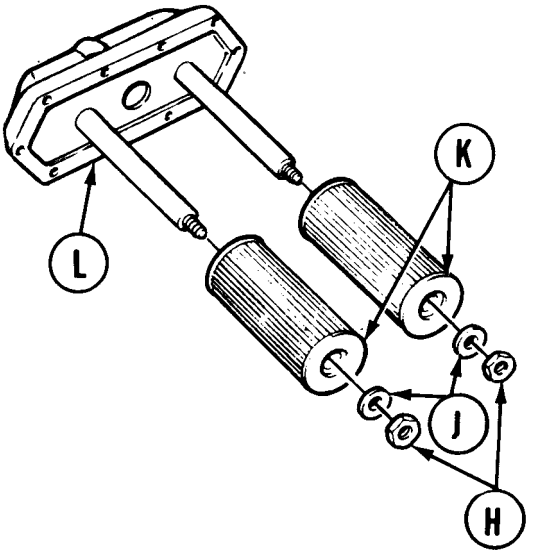
Some filters are secured with self locking nuts and do not require lockwiring.

6. Using diagonal cutting pliers, remove lockwire (G), if present, securing nuts on bottom of filter assembly (C).



Go on to Sheet 3

TRANSMISSION MAIN OIL FILTER ELEMENT REPLACEMENT (Sheet 3 of 7)



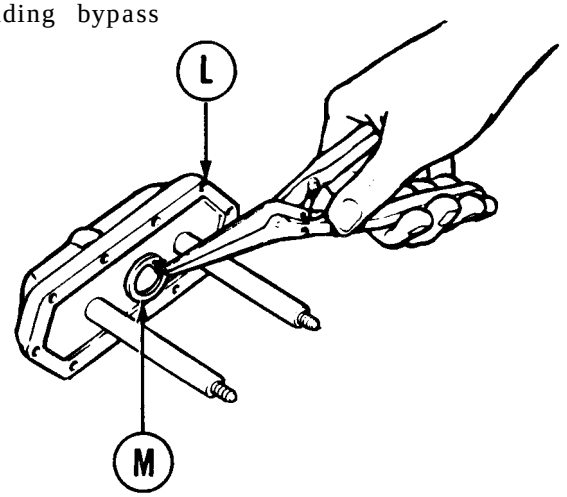
7. Using 1 inch wrench, remove two nuts (H) and washers (J) holding filter elements (K) to filter assembly head (L).

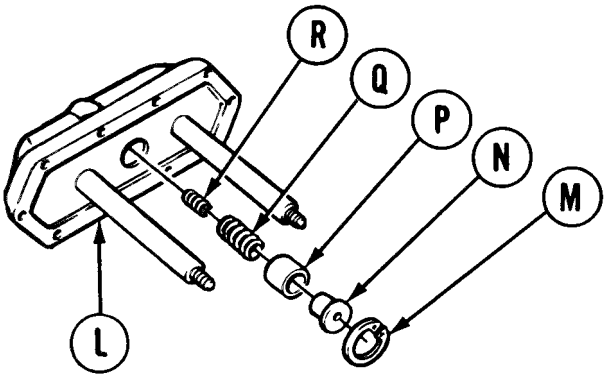
8. Remove two filter elements (K) from filter assembly head (L).

CAUTION

Bypass valve has spring tension. Hold hand over bypass valve while removing.

9. Using snapring pliers, remove retaining ring (M) holding bypass valve in bottom of filter assembly head (L).





10. Remove washer (N), sleeve (P), outer spring (Q), and inner spring (R) from filter assembly head (L).

Go on to Sheet 4

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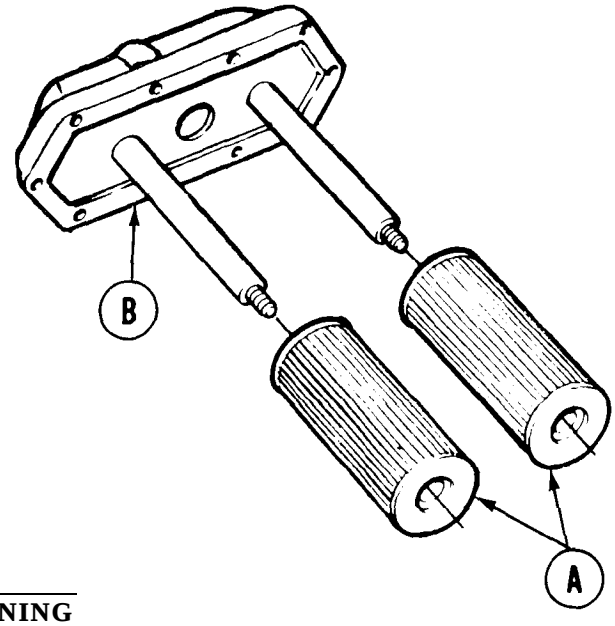
TRANSMISSION MAIN OIL FILTER ELEMENT REPLACEMENT (Sheet 4 of 7)

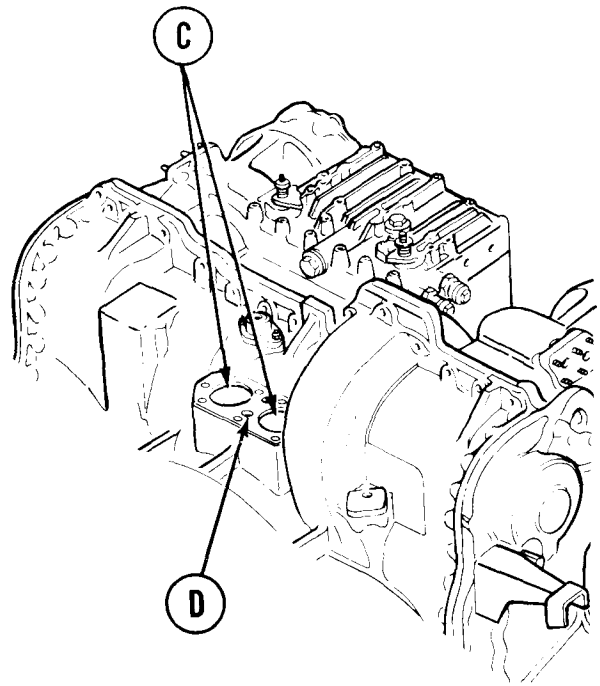


CLEANING AND INSPECTION:

WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. To avoid injury, wear protective goggles and gloves and use in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and do not breathe vapors. Do not use near open fire or excessive heat. The flash point for Type I dry cleaning solvent is 100°F (38°C), and for Type II is 138°F (50°C). If you become dizzy while using dry cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

1. Clean filter elements (A) using dry cleaning solvent. If filter elements are damaged, throw them away.
2. Using putty knife, clean old gasket off filter assembly head (B) mounting surface.
3. Clean dirt and oil off filter assembly head (B).
4. Inspect bypass valve springs for damage. Replace if defective.
5. Stuff clean rags into filter assembly holes (C) on transmission.
6. Using putty knife, clean off gasket mounting surface on transmission.
7. Ensure 10 bolt holes (D) are clean and free of oil.



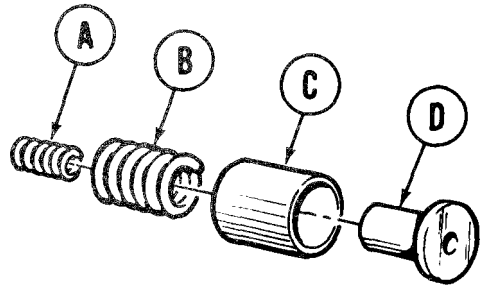
Go on to Sheet 5

TRANSMISSION MAIN OIL FILTER ELEMENT REPLACEMENT (Sheet 5 of 7)

INSTALLATION:

1. Assemble inner spring (A), outer spring (B), sleeve (C), and washer (D).

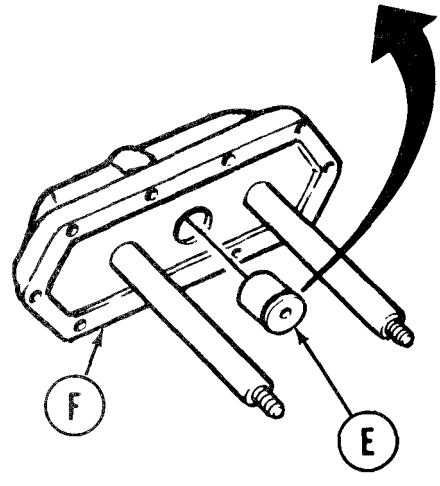
2. Install assembled bypass valve (E) into bottom of filter assembly head (F).

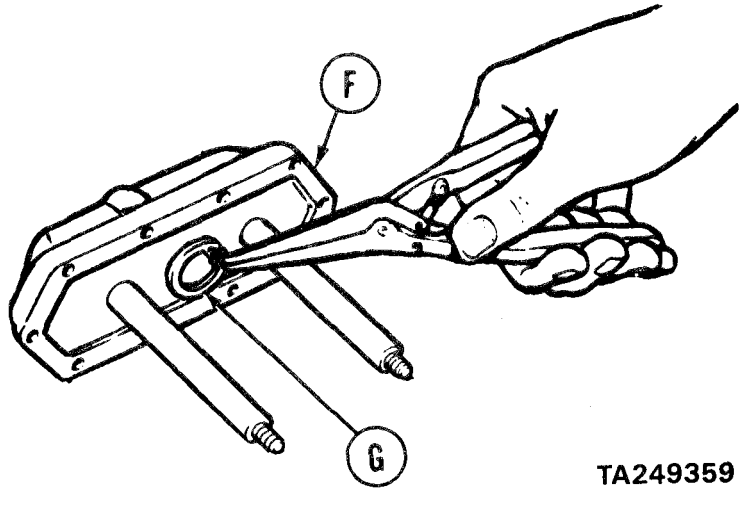


NOTE

It may be necessary to maintain pressure on bypass valve with screwdriver to preform step 3.

3. Using snap ring pliers, install retaining ring (G) into filter assembly head (F) to hold bypass valve in place.

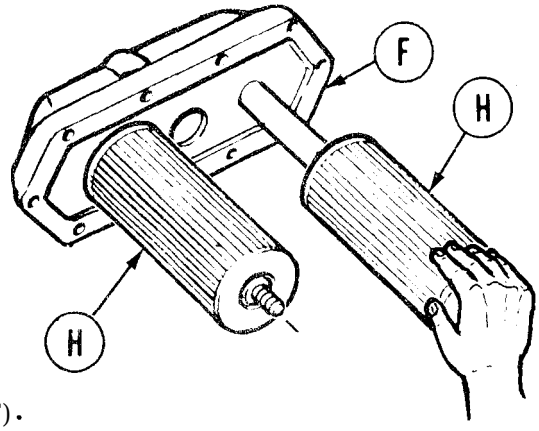




TA249359

Go on to Sheet 6

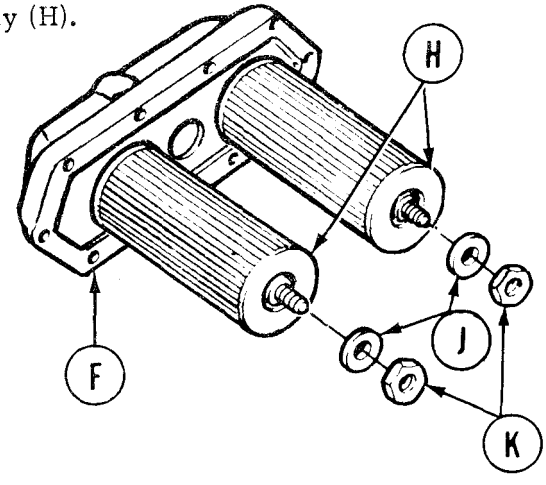
TRANSMISSION MAIN OIL FILTER ELEMENT REPLACEMENT (Sheet 6 of 7)

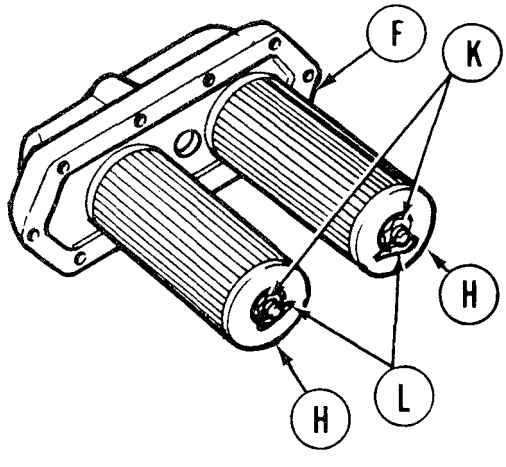


4. Place filter elements (H) on filter assembly head (F).

5. Using 1 inch wrench, secure filter elements (H) with two washers (J) and nuts (K).

6. Using lockwire (L), secure nuts (K) to filter assembly (H).

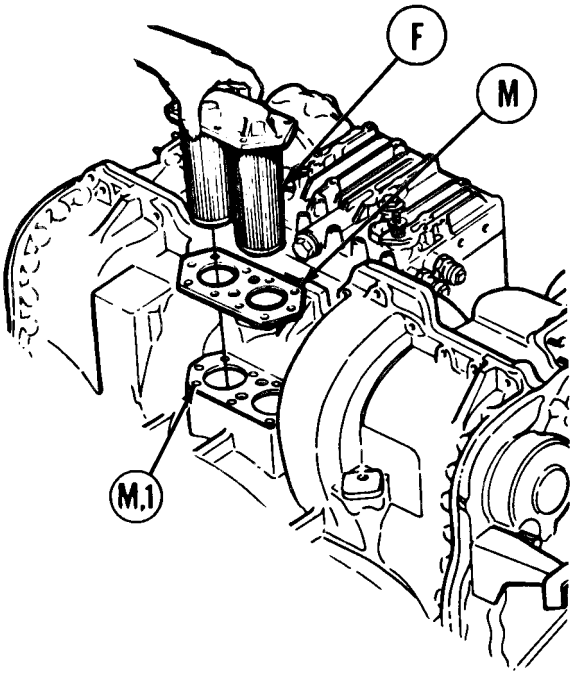




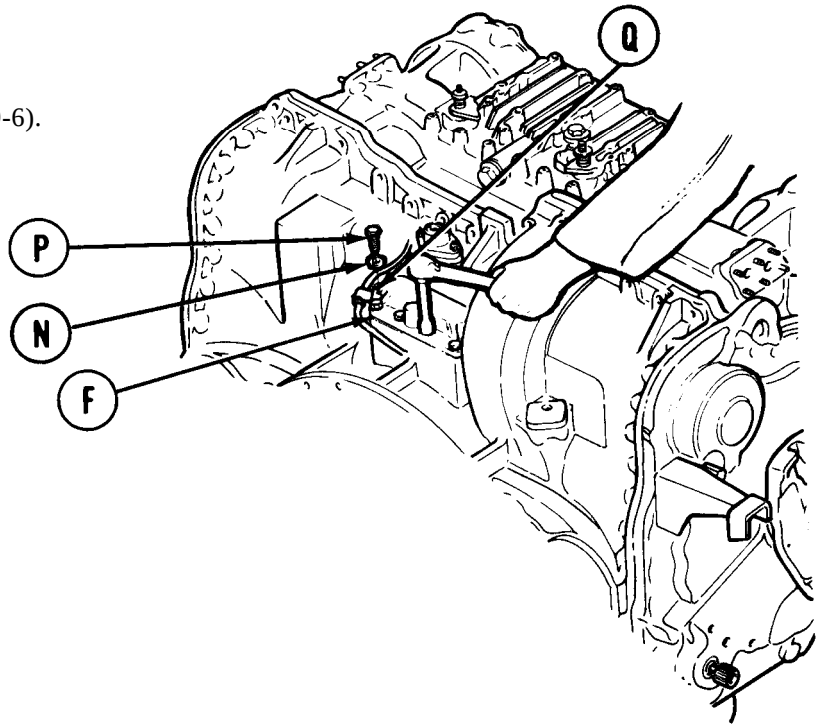
Goon to Sheet 7

TA249360

TRANSMISSION MAIN OIL FILTER ELEMENT REPLACEMENT (Sheet 7 of 7)



7. Remove rags from filter assembly holes.
8. Place new gasket (M) on transmission and install filter assembly (F).
9. Ensure 10 bolt holes (M.1) are clean and free of oil.
10. Install 10 new lockwashers (N) and bolts (P) to hold filter assembly (F) and clamp bracket (Q) to transmission.
11. Using a 9/16 inch socket wrench and torque wrench, alternately tighten 10 bolts (P) to 26-32 lb-ft (35-43 N·m).
12. Operate engine and transmission and check for leaks at gasket.
13. Install top deck (page 16-23).
14. Install transmission shroud (page 9-6).



End of Task

TRANSMISSION SIDE OIL STRAINER ASSEMBLY SERVICE (Sheet 1 of 8)

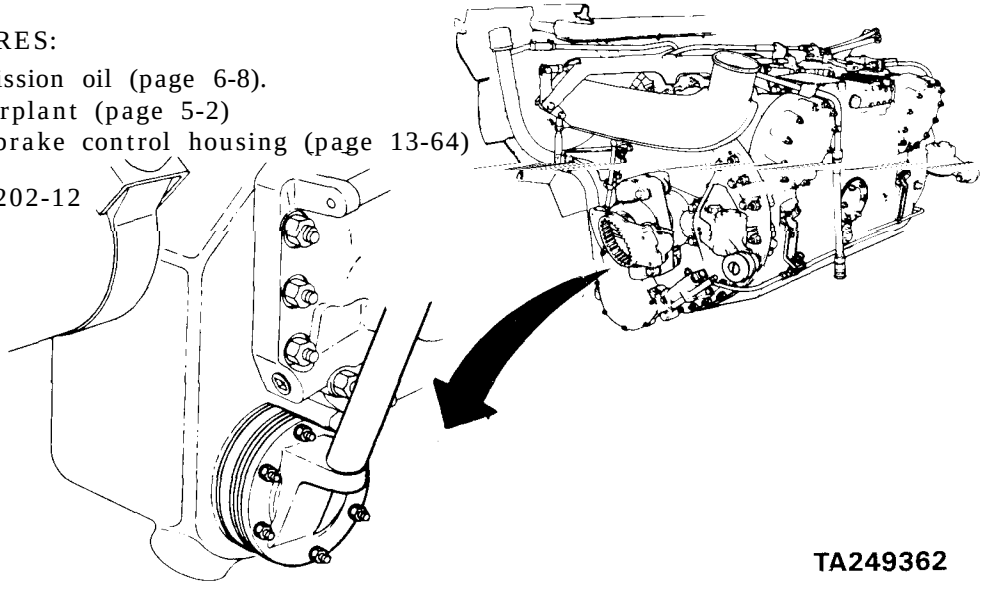
PROCEDURE INDEX

TOOLS: Slip joint pliers
1/2 in. socket with 1/2 in. drive
10 in. extension with 1/2 in. drive
Ratchet with 1/2 in. drive
12 in. adjustable wrench
3/4 in. socket with 1/2 in. drive
Torque wrench with 3/8 in. drive (0-200 lb-in)
Tube bender
9/16 in. socket with 1/2 in. drive
7/16 in. socket with 1/2 in. drive
Hose clamp pliers
Diagonal cutting pliers
7/16 in. socket with 3/8 in. drive
Putty knife
1/2 in. combination box and open end wrench

SUPPLIES: 5/16-18 in. jackscrews (2 required)
Gaskets (3 required)
Preformed packing
Washer seals (6 required)
Dry cleaning solvent (Item 55, Appendix D)
Rags (Item 65, Appendix D)
Lockwire (Item 61, Appendix D)
Gloves (Item 69, Appendix D)
Goggles (Item 70, Appendix D)
Lockwashers (8 required)

PRELIMINARY PROCEDURES:
Drain transmission oil (page 6-8).
Remove powerplant (page 5-2)
Remove left brake control housing (page 13-64)

REFERENCE: LO 5-5420-202-12

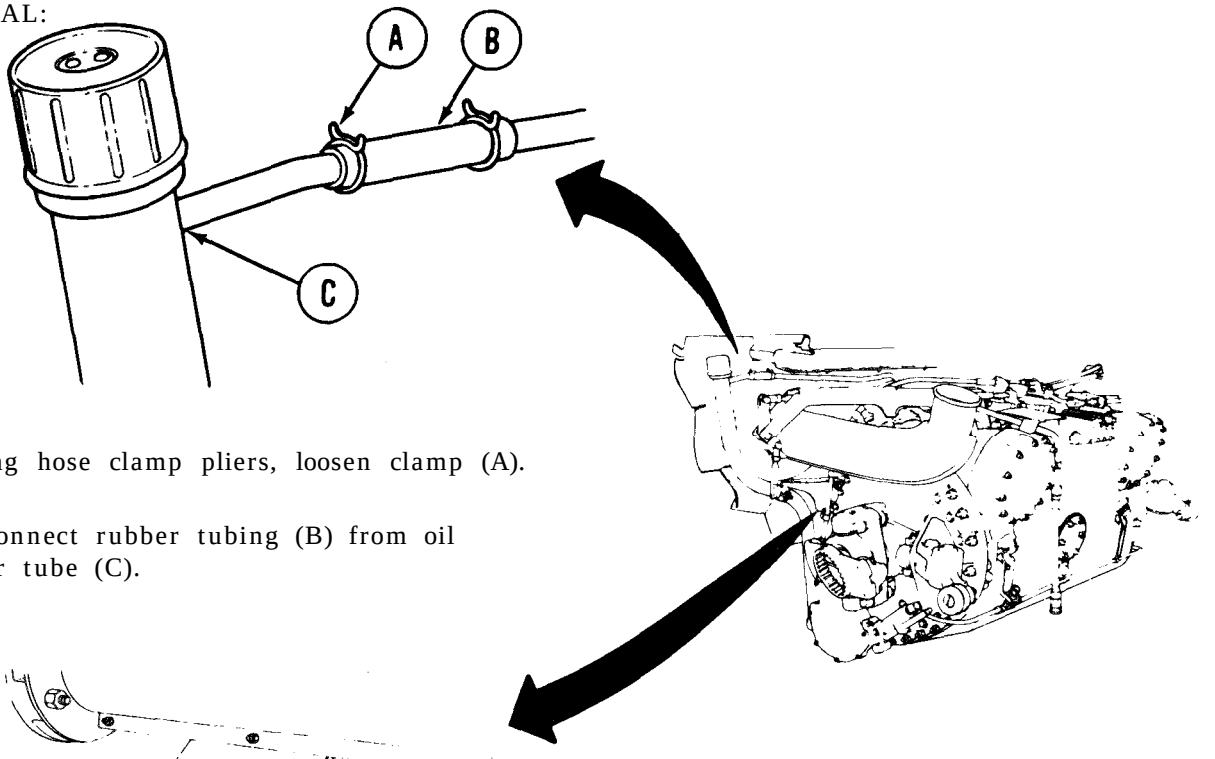


TA249362

Go on to Sheet 2

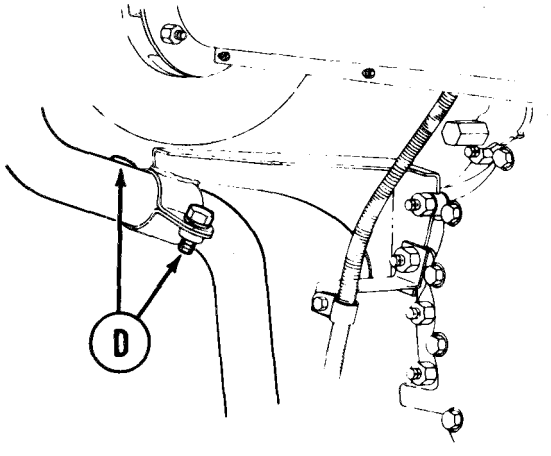
TRANSMISSION SIDE OIL STRAINER ASSEMBLY SERVICE (Sheet 2 of 8)

REMOVAL:

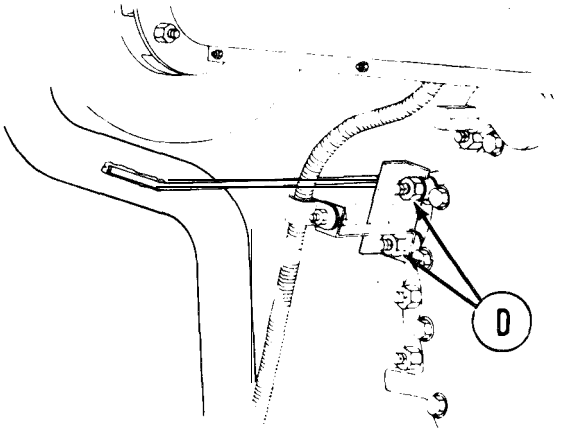


1. Using hose clamp pliers, loosen clamp (A).

2. Disconnect rubber tubing (B) from oil filler tube (C).



3. On earlier model transmissions, use 9/16 inch socket to remove two screws and lockwashers (D) securing bracket.

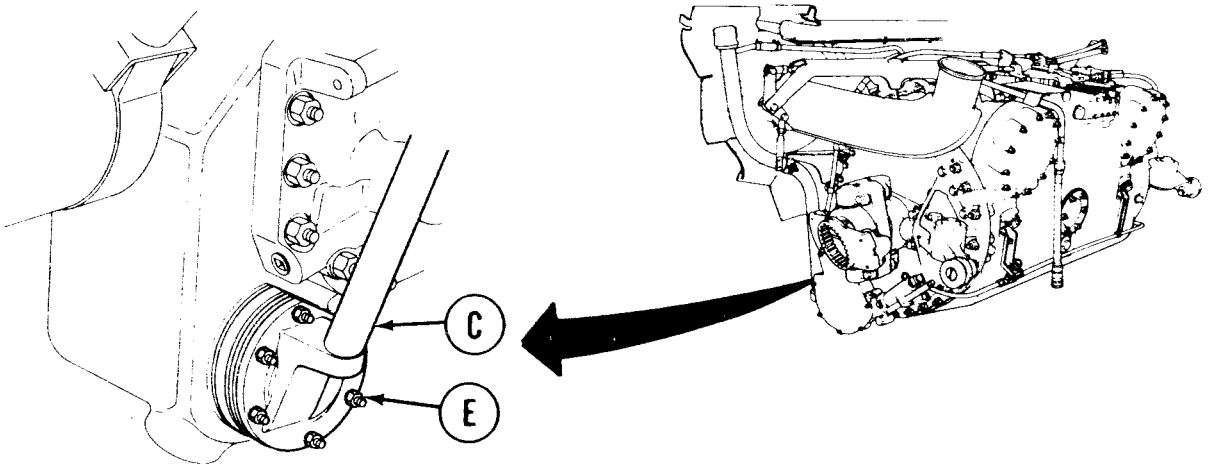


4. On later model transmissions, use 3/4 inch socket and extension to remove two nuts (D) securing bracket to transmission.

TA249363

Go on to Sheet 3

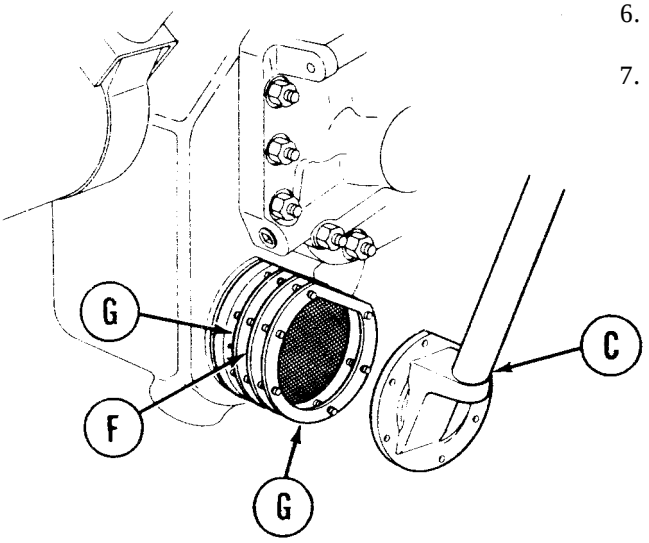
TRANSMISSION SIDE OIL STRAINER ASSEMBLY SERVICE (Sheet 3 of 8)



5. Using 1/2 inch socket, extension, and 1/2 inch wrench, remove six nuts and lockwashers (E) securing oil filler tube (C) to transmission.

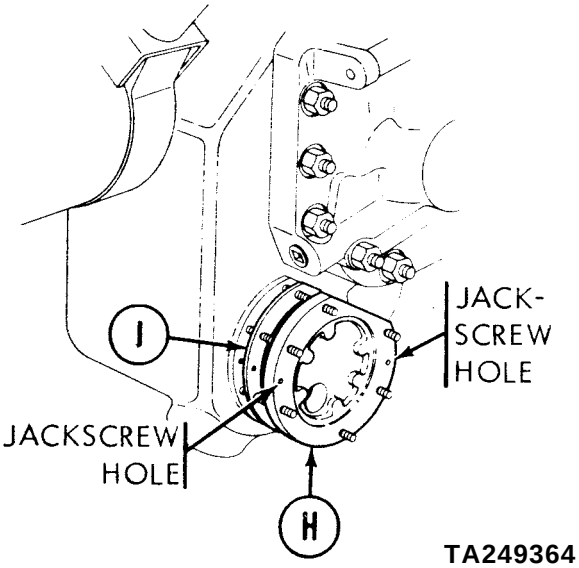
6. Remove oil filler tube (C) from transmission.

7. Using putty knife, remove strainer (F) and two gaskets (G) off mounting studs. Throw gaskets away.



8. Using two 5/16-18 jack screws and 1/2 inch socket to tighten jackscrews alternately; remove side on strainer assembly (H).

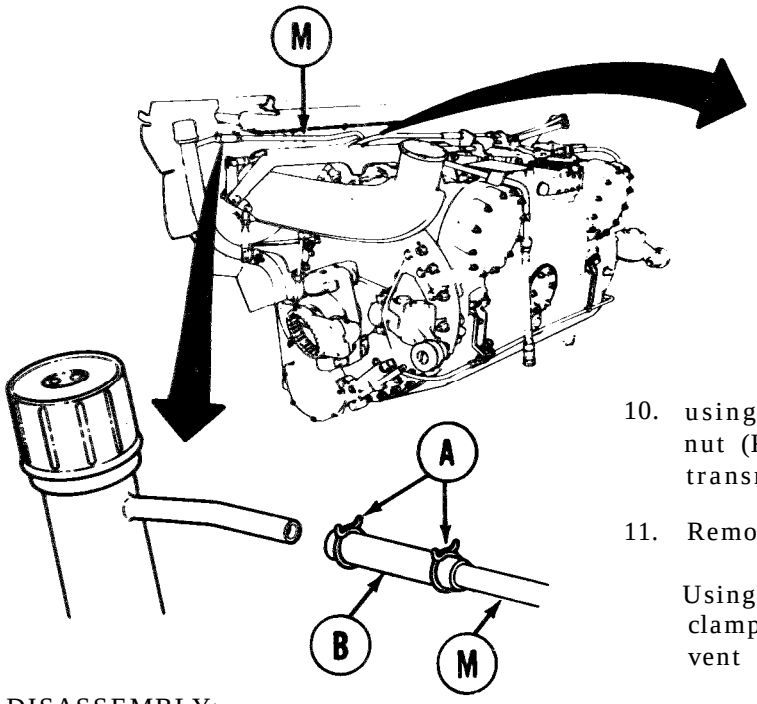
9. Using putty knife, remove gasket (J). Throw gasket away

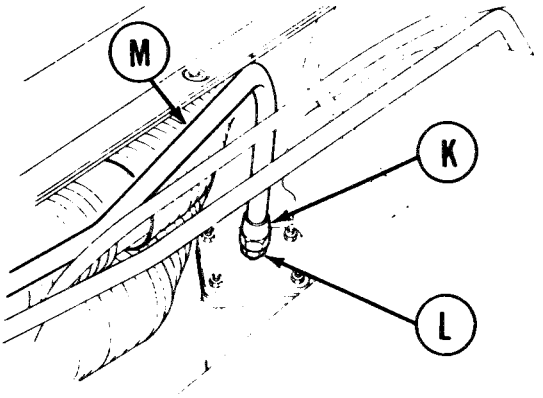


TA249364

Go on to Sheet 4

TRANSMISSION SIDE OIL STRAINER ASSEMBLY SERVICE (Sheet 4 of 8)



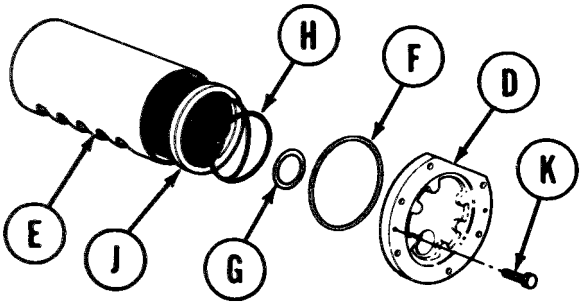


DISASSEMBLY:

1. Using diagonal pliers, cut lockwire (A) from six screws (B).

2. Using 7/16 inch socket, remove six screws (B) and washer seals (C) securing element cover (D) to oil screen shell (E).

3. Using putty knife, remove cover (D) and gasket (F). Throw gasket away.

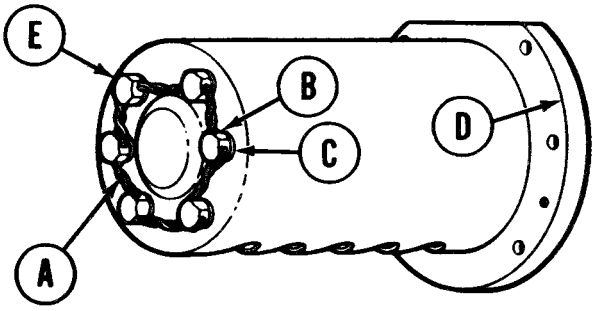


10. using adjustable wrench, remove tube nut (K) and nipple adapter (L) from transmission.

11. Remove vent tube (M) from transmission.

Using hose clamp pliers, remove both clamps (A) and rubber tubing (B) from vent tube (M).

13. Slide tube nut (K) off opposite end of vent tube (M).



4. Remove preformed packing (G), reinforcement (H), and element (J) from shell (E). Separate reinforcement (H) from element (J).

5. Using 1/2 inch socket, remove two jackscrews (K).

CLEANING AND INSPECTION:

WARNING

Cleaning agent specified is flammable. Use only in well ventilated areas. Keep away from flames, sparks, or heat. Do not smoke while using. Prevent contact with eyes, mouth, and/or skin. Wear rubber gloves when performing cleaning procedures.

1. Using solvent and rags, clean all parts.

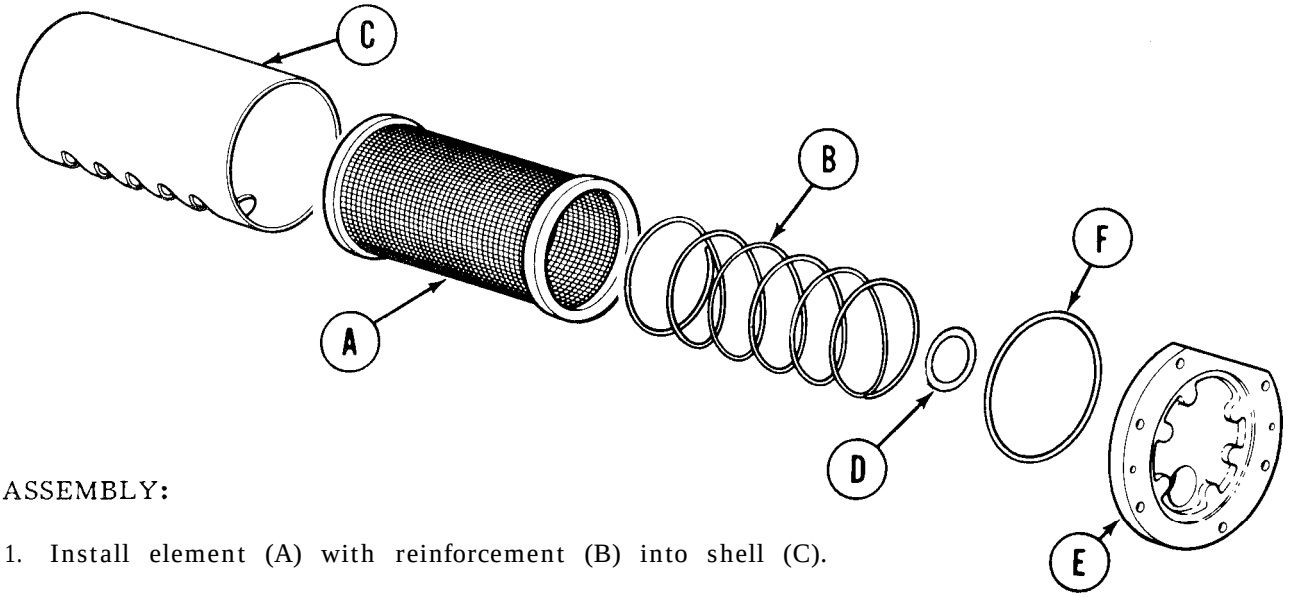
2. Inspect all parts for defects.

3. Replace parts found defective.

Go on to Sheet 5

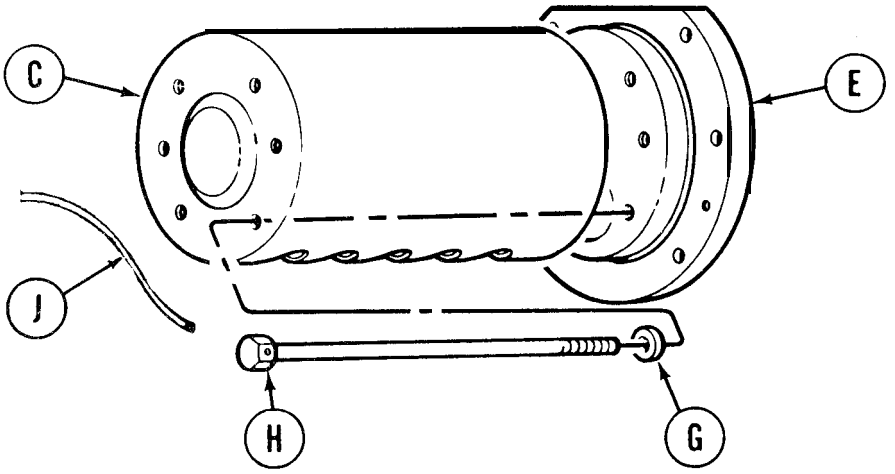
TA249365

TRANSMISSION SIDE OIL STRAINER ASSEMBLY SERVICE (Sheet 5 of 8)



ASSEMBLY:

1. Install element (A) with reinforcement (B) into shell (C).
2. Put new packing (D) into groove of shell (C).
3. Position cover (E) with new gasket (F) to shell (C).



4. Install six new washer seals (G) and screws (H) securing cover (E) to shell (C).
5. Using torque wrench with 7/16 inch socket, tighten six screws (H) to 20-25 lb-in (2-3 N·m).
6. Secure screws (H) in sets of three (or in pairs) with lockwire: (J).

Go on to Sheet 6

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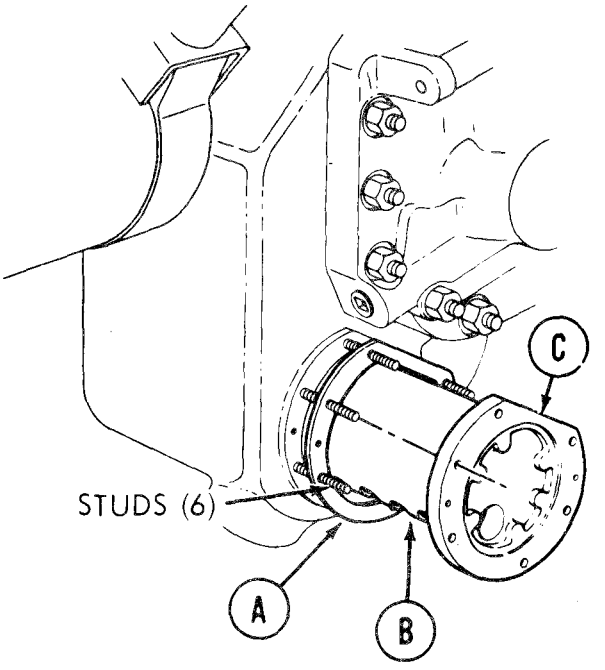
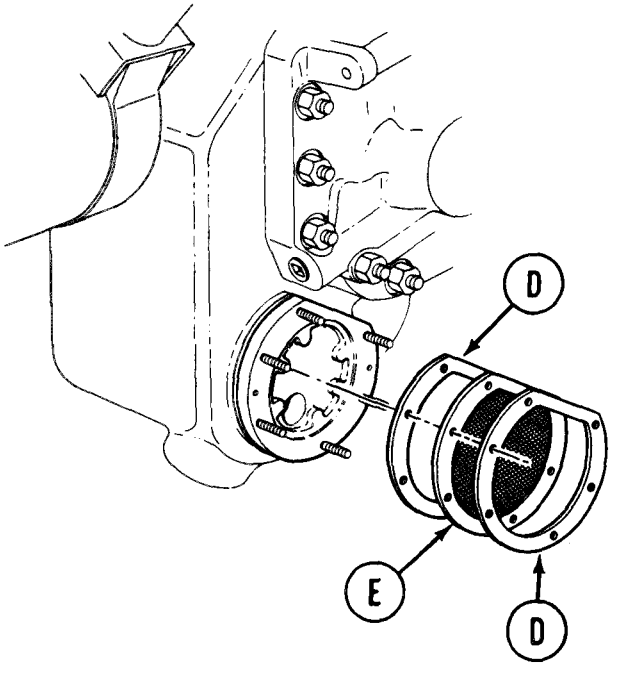
TRANSMISSION SIDE OIL STRAINER ASSEMBLY SERVICE (Sheet 6 of 8)

INSTALLATION:

1. Install new gasket (A) to mounting studs.

2. Install side oil strainer assembly (B) into transmission opening with cover (C) flange mounted to studs.



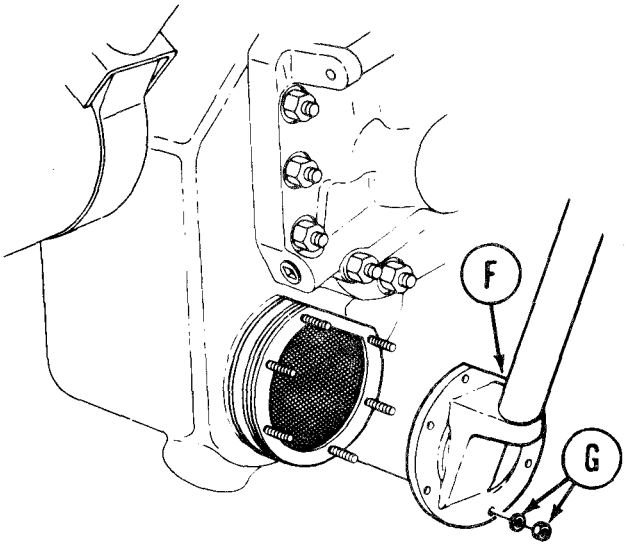


3. Mount new gasket (D), strainer (E), and another new gasket (D) onto studs.

4. Mount oil filler tube (F) onto transmission studs, and secure tube (F) with six lockwashers and nuts (G).

5. Using 1/2 inch socket and extension or 1/2 inch wrench, tighten six nuts (G).

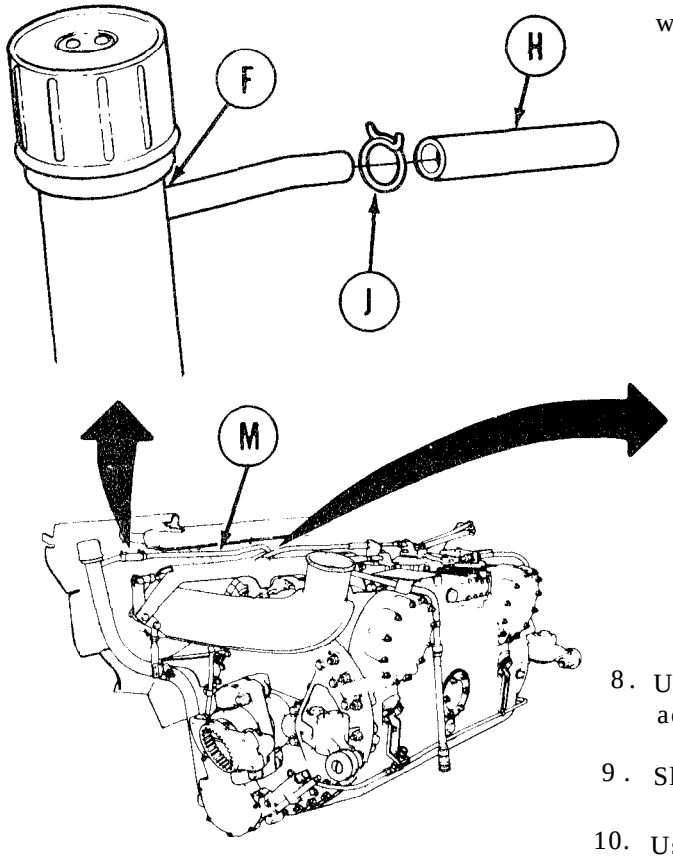
6. Install brake control housing (page 13-70).



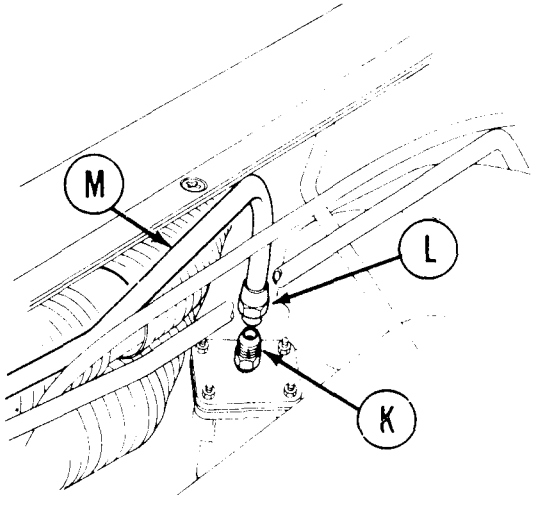
Go on to Sheet 7

TA249367

TRANSMISSION SIDE OIL STRAINER ASSEMBLY SERVICE (Sheet 7 of 8)



7. Using hose clamp pliers, install rubber tubing (H) with clamp (J) onto oil filler tube (F).



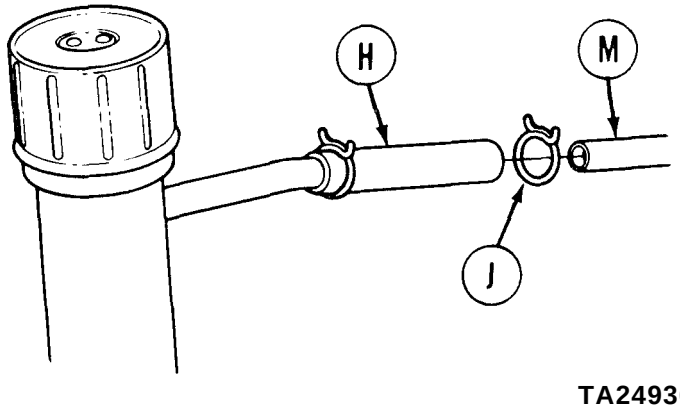
8. Using adjustable wrench, install nipple adapter (K) into transmission.

9. Slide tube nut (L) onto new vent tube (M).

10. Using tube bender, bend new vent tube (M) of same length as old tube into same shape as old tube.

11. Install tube nut (L) end of vent tube (M) onto nipple adapter (K). Using wrench, tighten tube nut (L).

12. Using hose clamp pliers, secure vent tube (M) into rubber tubing (H) with clamp (J).



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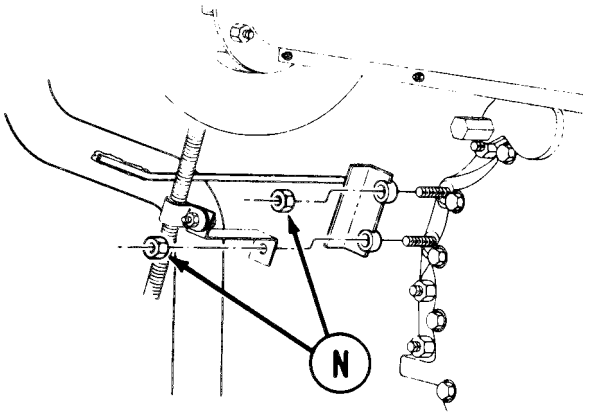
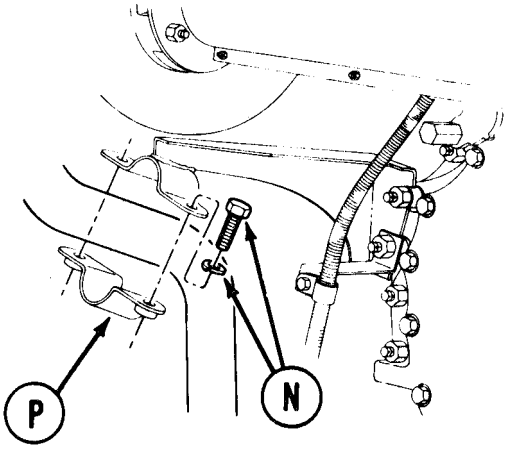
Go on to Sheet 8

TRANSMISSION SIDE OIL STRAINER ASSEMBLY SERVICE (Sheet 8 of 8)

13. Position oil filler tube bracket (P). Secure bracket with two lockwashers and screws (N) or two nuts (N) on later transmission models.

14. Using 9/16 inch socket, tighten screws (N).





15. On later models, use 3/4 inch socket to tighten two nuts (N).

16. Service transmission (LO 5-5420-202-12).

17. Install powerplant (page 5-14).

End of Task

TA249369

CHAPTER 12

FINAL DRIVE AND UNIVERSAL JOINTS MAINTENANCE

INDEX

LEFT AND RIGHT FINAL DRIVE REPLACEMENT (Sheet 1 of 4)

PROCEDURE INDEX

TOOLS: Hoist (capable of 1100 lb. minimum capacity)
Pinch bar
Socket wrench handle with 3/4 in. drive
1-1/2 in. socket with 3/4 in. drive
8 in. extension with 3/4 in. drive
Torque wrench with 3/4 in. drive (0-600 lb-ft) (813 N·m)
36 in. extension bar
Knife, putty
Hand impact wrench set

SUPPLIES: Sealing compound (Item 27, Appendix D)
Lubricating oil (Item 44, Appendix D)
Self-locking nuts (17 required)
Small brush (Item 10, Appendix D)
Dry cleaning solvent (Item 55, Appendix D)
Rags (Item 65, Appendix D)
Gloves (Item 69, Appendix D)
Goggles (Item 70, Appendix D).

PERSONNEL: Two

REFERENCES: TM 5-5420-202-10
LO 5-5420-202-12

PRELIMINARY PROCEDURES: Remove powerplant (page 5-2)
Remove powerplant guides (page 6-3)
Remove adapter assembly (page 12-7)
Remove air pressure relief valve (page 12-6)
Remove hub and sprockets assembly (page 14-70)
Drain oil from final drive (LO 5-5420-202-12)
Remove rear fender support (page 16-69)

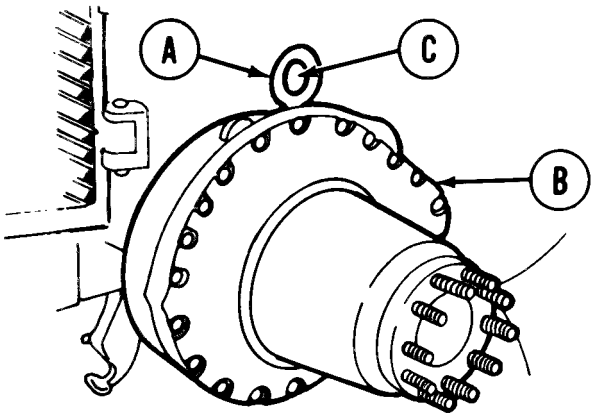
Go on to Sheet 2

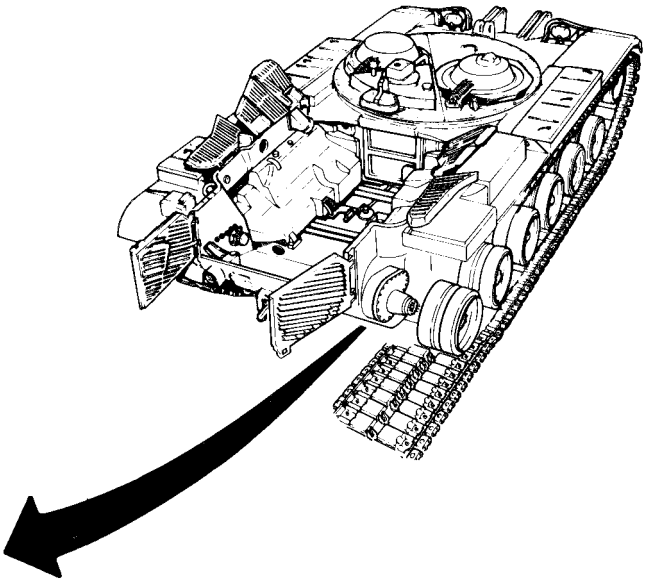
LEFT AND RIGHT FINAL DRIVE REPLACEMENT (Sheet 2 of 4)

REMOVAL:

1. Check whether lifting eye (A) is installed in final drive (B).

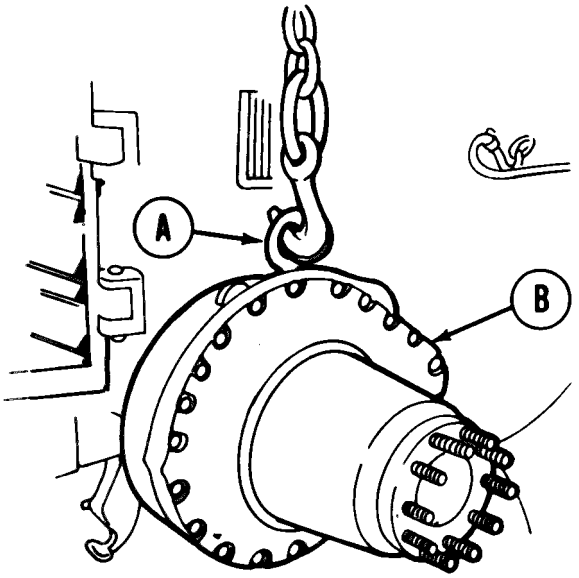
2. If lifting eye (A) is installed in final drive (B), check it for distortion or cracks.





3. If lifting eye (A) is distorted or cracked, using pinch bar through eyehole (C), turn and remove lifting eye (A) from final drive (B).

4. Start threads of new lifting eye (A) into final drive (B).



5. Using pinch bar, turn and tighten lifting eye (A).

6. If lifting eye (A) is not installed in final drive (B), using socket wrench handle, remove plug from lifting eyehole in final drive (B).

7. Install new lifting eye (A) as in steps 4 and 5 above.

CAUTION

Use hoist with 1100 pounds minimum capacity.

8. Connect hoist to lifting eye (A) on final drive (B).

Go on to Sheet 3

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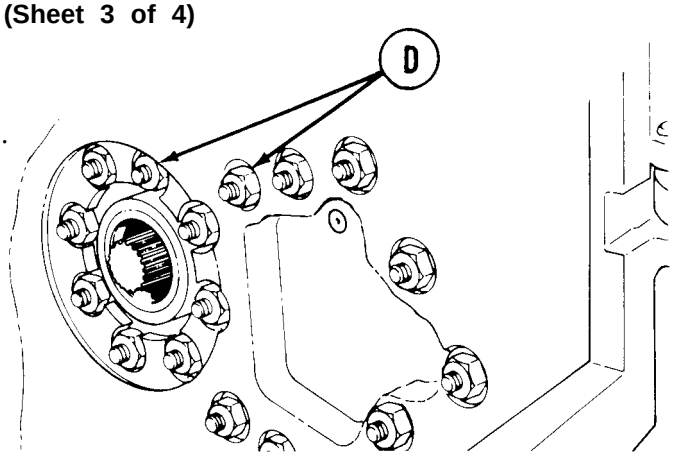
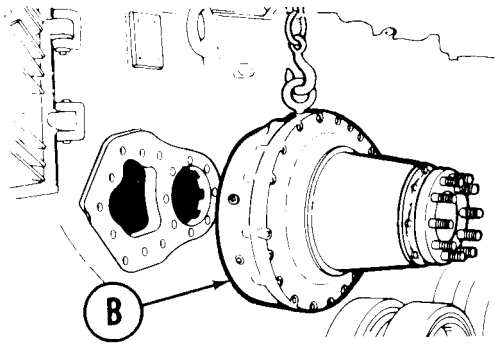
LEFT AND RIGHT FINAL DRIVE REPLACEMENT (Sheet 3 of 4)

9. Using hand impact wrench set, remove 17 self-locking nuts (D) holding final drive (B) to hull. Throw self-locking nuts (D) away.



WARNING

Do not place hands under final drive (B) or between final drive (B) and hull (C). Injury to personnel may occur if final drive (B) inadvertently shifts.



10. Keeping hoist chain tight, slowly pull final drive (B) from hull.

NOTE

If final drive cannot be pulled free from hull, do step 10.1.

10.1. Using pinch bar, pry final drive (B) away from hull and slowly pull final drive (B) from hull

11. Using hoist, slowly lower final drive (B) to a solid surface.

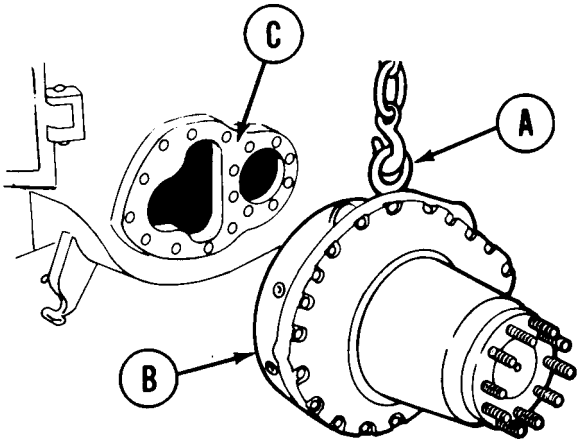
INSTALLATION:

1. If lifting eye (A) is not installed in final drive (B), use socket handle wrench and remove plug from eyehole in final drive (B).

Using hoist, attach hook to lifting eye (A) on final drive (B). Using pinch bar, through lifting eye, tighten lifting eye (A).

3. Using hoist, attach hook to lifting eye (A) on final drive (B). Take slack out of hoist chain.

4. Using brush and sealing compound, coat final drive mating surface on hull (C).



WARNING

Do not place hands under final drive (B) or between final drive (B) and hull (C). Injury to personnel may occur if final drive (B) inadvertently shifts.

5. Using hoist, lift final drive (B) and position it so that studs are in alinement with mating surface on hull (C).

Go on to Sheet 3.1

LEFT AND RIGHT FINAL DRIVE REPLACEMENT (Sheet 3.1 of 4)

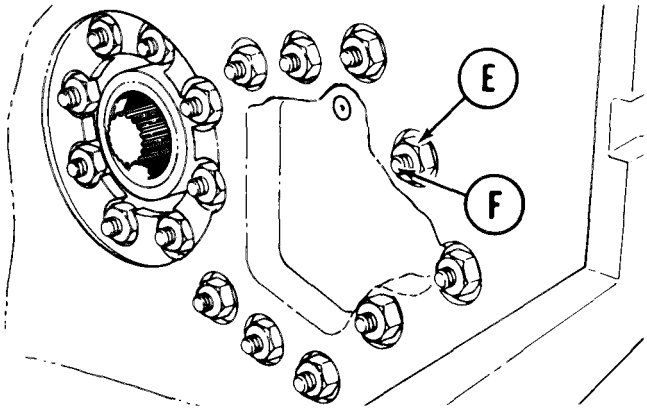
CAUTION

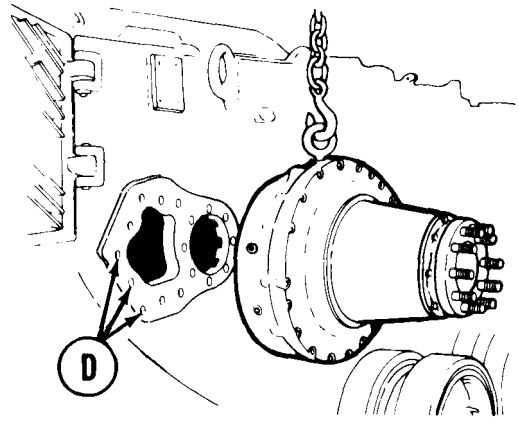
Do not damage threads on mounting studs when installing studs through mounting holes.

6. Carefully guide mounting studs through mounting holes (D) in side of hull.

7. Using lubricating oil, lubricate 17 new self-locking nuts (E)

8. Using fingers, start threads of 17 new self-locking nuts (E) onto final drive studs (IV.





9. Using socket or offset link, install 17 new self-locking nuts (E).

NOTE

Use hand impact wrench offset link with torque wrench where torque wrench cannot be used due to lack of space.

10. Using torque wrench, tighten 17 new self-locking nuts (E) to 460-500 lb-ft (625-680 N·m).

11. Remove hoist hook from final drive lifting eye.

NOTE

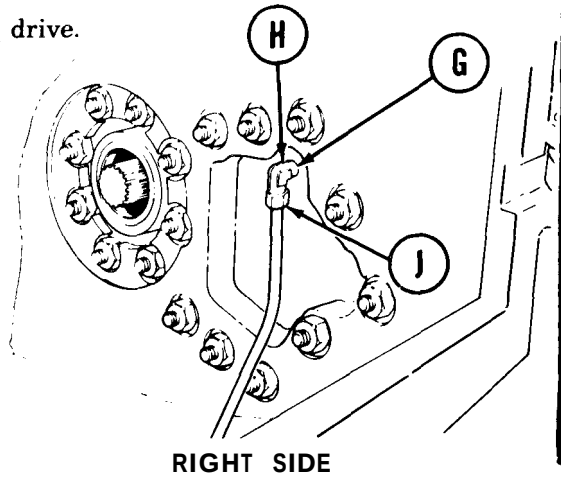
- **If your final drive is to be equipped with final drive venting system, perform steps 12 through 26 skipping step 21.**
- **If your final drive is to be equipped with an air pressure relief valve, skip steps 12 through 20.**

12. Using 3/16 inch allen wrench, remove plug (G) from final drive.

13. Using adjustable wrench, install elbow (H) onto right final drive where plug (G) was.

14. Using fingers, connect tubing (J) to elbow (H).

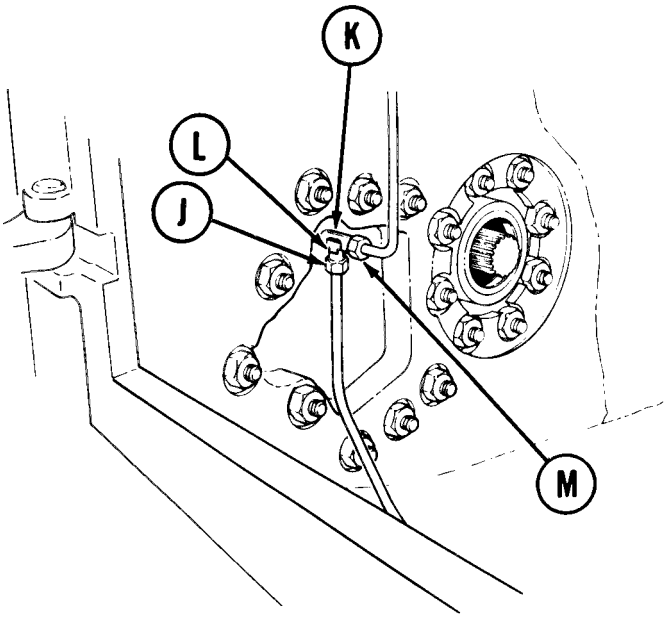
15. Using torque wrench and crowfoot wrench, tighten tubing (J) nut 75-85 lb-in (8.4-9.5 N·m).



RIGHT SIDE

Go on to Sheet 4

LEFT AND RIGHT FINAL DRIVE REPLACEMENT (Sheet 4 of 4)



Left Side

16. Using 3/16 inch allen wrench, remove plug (K) from left final drive.

17. Using adjustable wrench, install tee (L) into left final drive where plug (K) was.

18. Using fingers connect tube assembly (M) and tubing (J) to tee (L).

19. Using torque wrench and crowfoot wrench, tighten tubing (J) nut 75-85 lb-in (8.4-9.5 N·m).

20. Using torque wrench and crowfoot wrench, tighten tubing assembly (M) nut 75-85 lb-in (8.4-9.5 N·m).

21. Install final drive air pressure valve (page 12-6).

22. Install track drive sprocket (page 14-77).

23. Install adapter assembly (page 12-8).

24. Install powerplant guides (page 6-3).

25. Fill final drive with oil (LO 5-5420-202-12).

26. Drive vehicle to perform operational check (TM 5-5420-202-10).

End of Task

FINAL DRIVE AIR PRESSURE RELIEF VALVE (LEFT AND RIGHT) REPLACEMENT (Sheet 1 of 1)

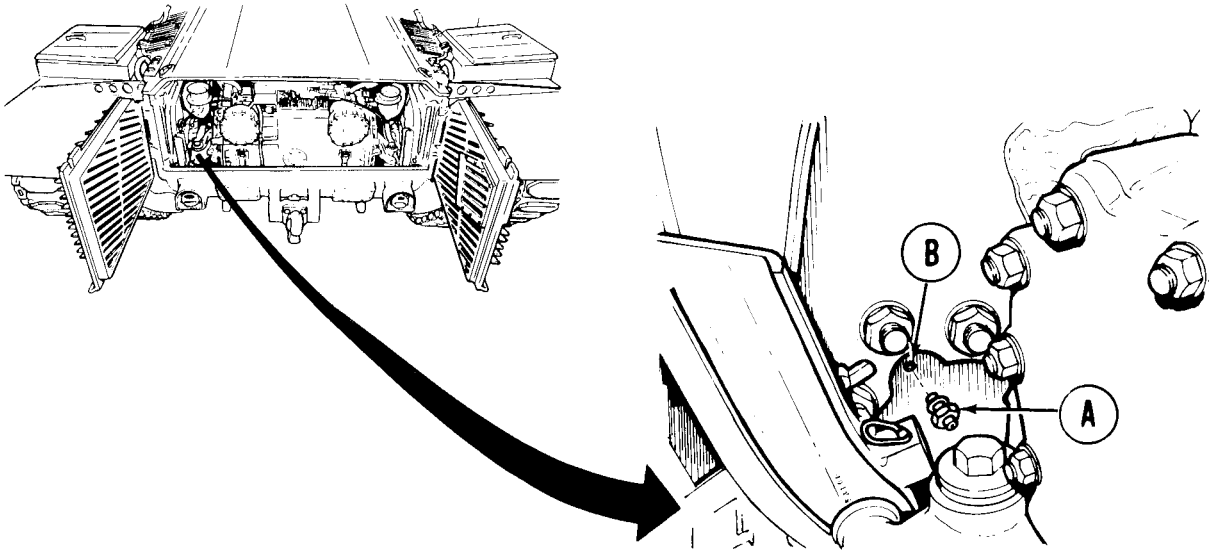
TOOLS: 7/16 in. combination box and open end wrench

SUPPLIES: Clean rag (Item 65, Appendix D)

PRELIMINARY PROCEDURES: Remove transmission shroud (page 9-2)

REMOVAL:

1. Using wrench, remove air pressure valve (A) from installation hole (B) in drive housing.



LEFT SIDE SHOWN

2. Inspect air pressure valve to make sure that vent cap is free to move on valve. Replace as required.

INSTALLATION:

1. Using wrench, install air pressure valve (A) into installation hole (B).

2. Install transmission shroud (page 9-6)

End of Task

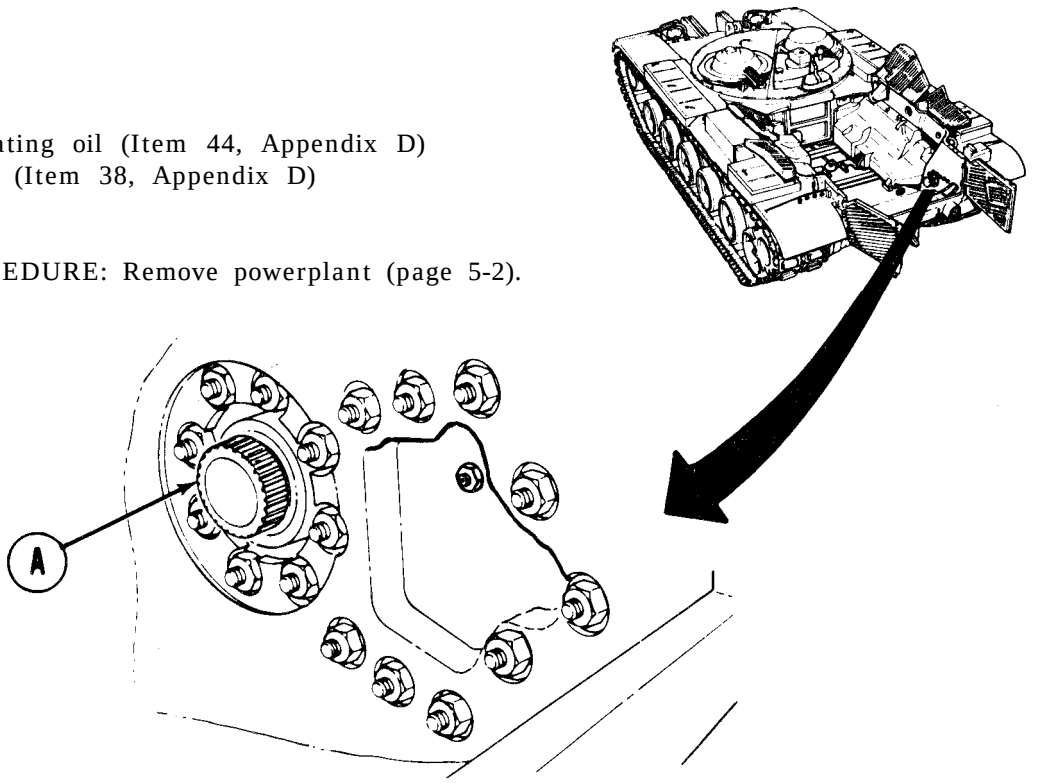
TA249374

FINAL DRIVE ADAPTER ASSEMBLY AND OIL SEAL REPLACEMENT (Sheet 1 of 2)

Tools: Pinch bar
Hammer

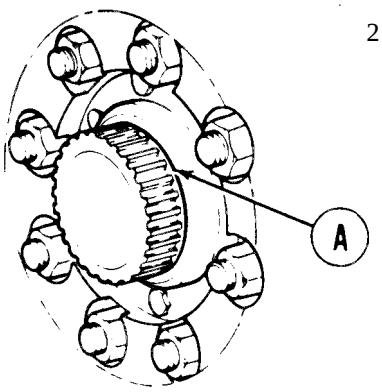
SUPPLIES: Lubricating oil (Item 44, Appendix D)
Grease (Item 38, Appendix D)

PRELIMINARY PROCEDURE: Remove powerplant (page 5-2).

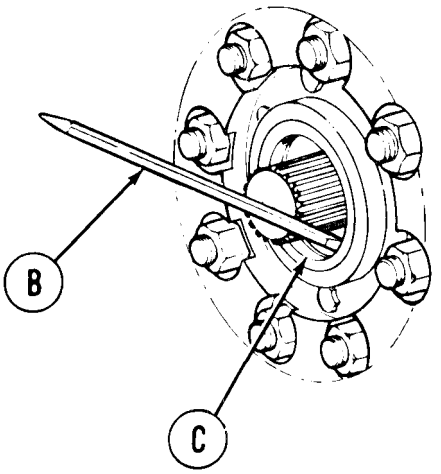


REMOVAL:

1. Using hands remove final drive adapter assembly (A) from final drive assembly input shaft by pulling final drive adapter assembly (A) straight out.



2. Using pinch bar (B) remove seal (C) by prying around the entire seal (C).



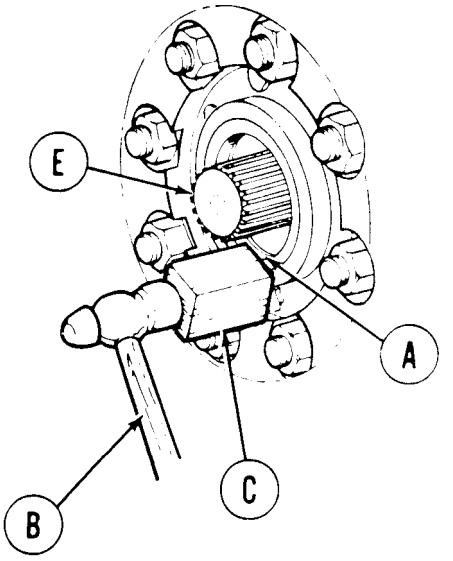
Go on to Sheet 2

TA249375

FINAL DRIVE ADAPTER ASSEMBLY AND OIL SEAL REPLACEMENT (Sheet 2 of 2)

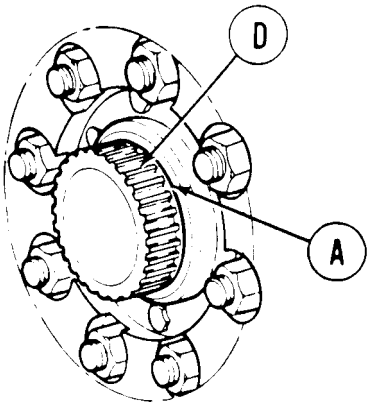
INSTALLATION:

1. Position seal (A) in vehicle.
2. Make sure that rubber lip of seal (A) is toward inside of vehicle hull.
3. Using hammer (B) and block of wood (C), tap seal (A) into place.



NOTE
Seal is seated when tapped in as far as it will go.

4. Make sure that all sand, grit, and accumulated debris has been removed from the final drive adapter assembly (D).



5. Apply grease inside final drive adapter assembly (D) and on final drive asselmbly input shaft spline (E).
6. Using oil, lightly coat outside surface of final drive adapter assembly (D).
7. Alining internal splines in final drive adapter assembly (D) with splines on input shaft (E), slide final drive adapter assembly (D) onto input shaft and into seal (A).
8. Install powerplant (page 5-14).

End of Task

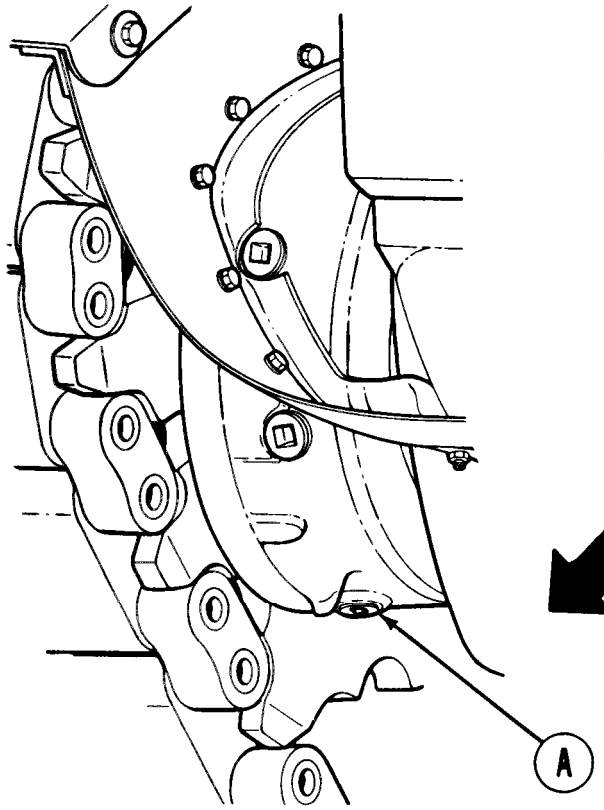
TA249376

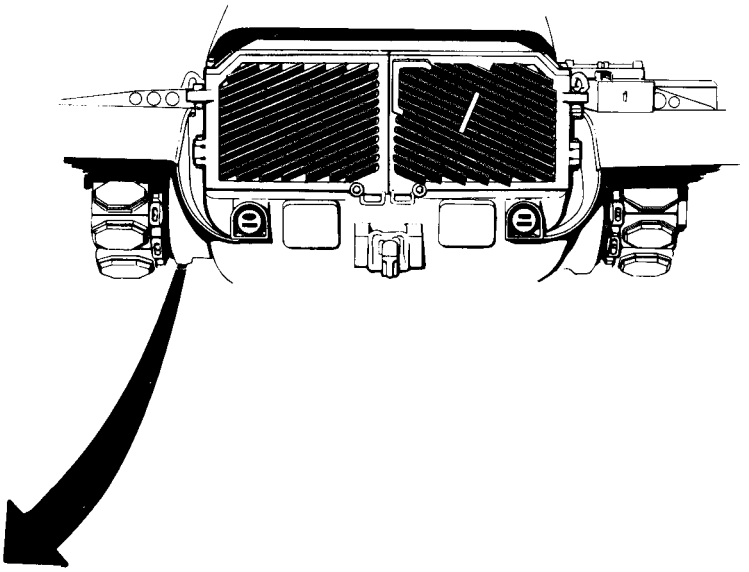
FINAL DRIVE MAGNETIC PLUG REPLACEMENT (Sheet 1 of 1)

TOOLS: 5/8 in. key, socket head screw (allen wrench)
Socket wrench handle with 1/2 in. drive

SUPPLIES: Drip pan

REFERENCE: LO 5-5420-202-12





REMOVAL:

1. Position drip pan under final drive magnetic drain plug (A).

NOTE

Magnetic plug may be either a square or a hex drive. Use 5/8 inch key wrench or 1/2 inch drive handle, as required.

2. Using allen wrench or drive handle, remove magnetic plug (A) from final drive.

INSPECTION:

1. Check magnetic plug (A) for cracks or thread damage.
2. Replace magnetic plug (A) if damaged or worn.

INSTALLATION:

1. Using allen wrench or drive handle, install magnetic plug (A) in final drive.
2. Replace oil (LO 5-5420-202-12).

End of Task

TA249377

FINAL DRIVE STUD REPLACEMENT (Sheet 1 of 2)

TOOLS: 1-1/2 in. open end wrench
Hammer
Pipe wrench (2 in. opening)
Ruler

SUPPLIES: Primer (Item 49, Appendix D)
Sealing compound (Item 26, Appendix D)
Two small brushes (Item 10, Appendix D)
Penetrating oil (Item 43, Appendix D)

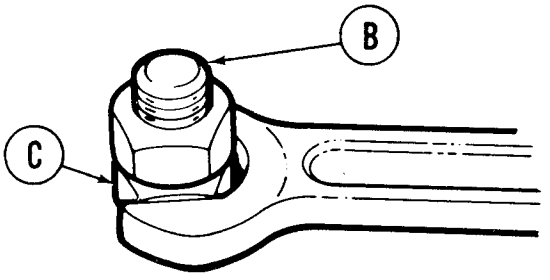
PRELIMINARY PROCEDURE: Remove final drive (page 12-2)

REMOVAL:

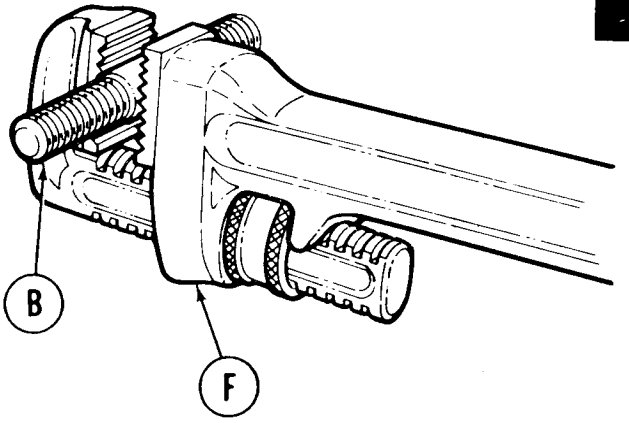
NOTE

If stud is bent or cracked, go to step 1. If stud has damaged threads or broken off below threads, go to step 2.

If stud is broken off, flush with final drive housing, notify support maintenance.

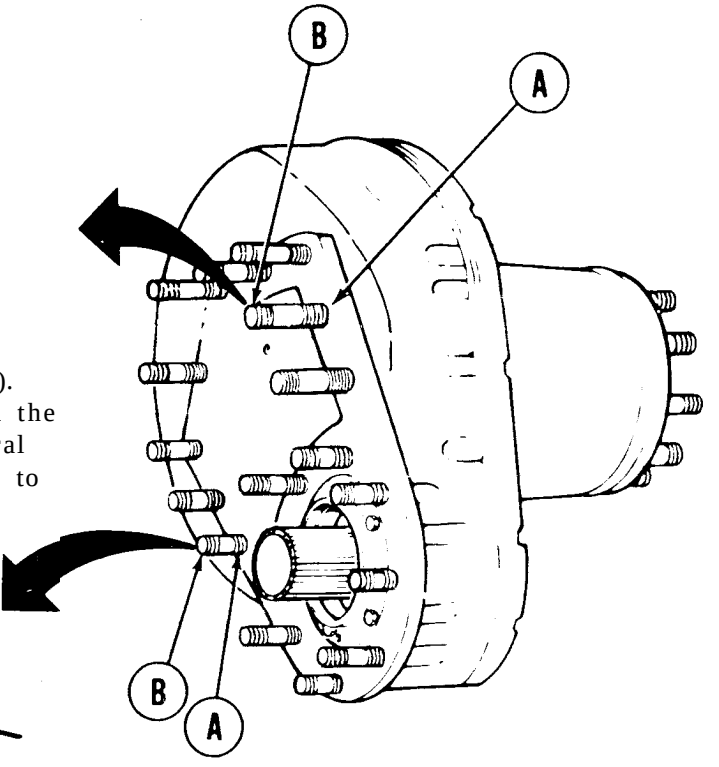


1. Apply penetrating oil to base of stud (A). Thread two hex nuts on stud (B) and jam the nuts. Sharply tap head of stud (B) several times with hammer. Turn lower nut (C) to remove stud (B).



NOTE

Studs come in three different lengths. Make sure you order the right size.



2. Apply penetrating oil to base of stud (A). Sharply tap head of stud (B) with hammer. Using pipe wrench (F), remove broken stud (B).

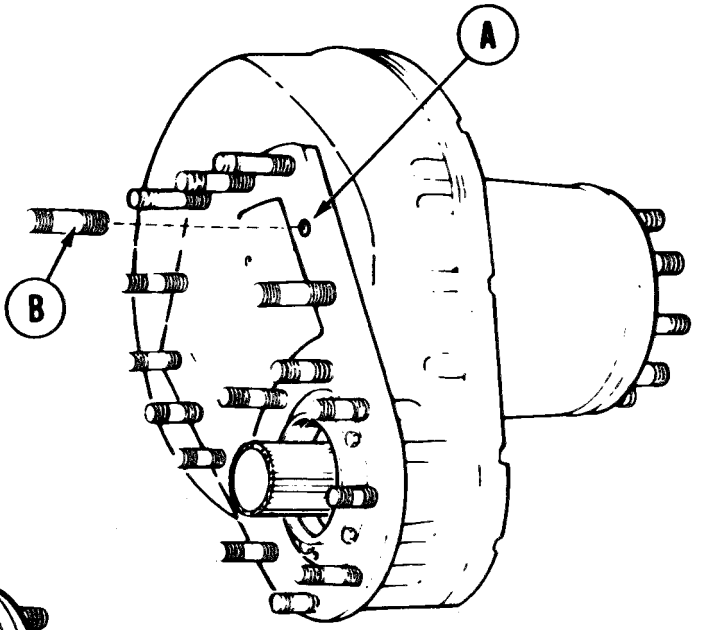
Go on to Sheet 2

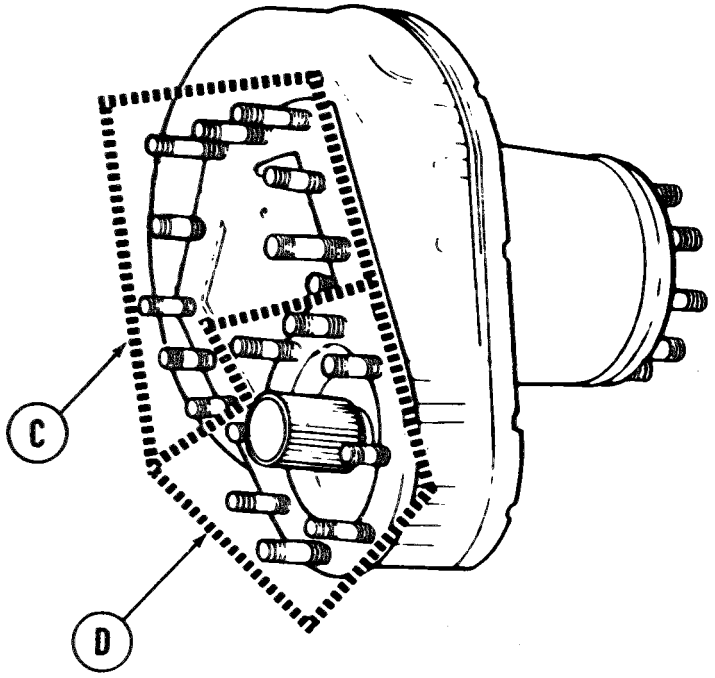
TA249378

FINAL DRIVE STUD REPLACEMENT (Sheet 2 of 2)

INSTALLATION:

1. Using clean brush, lightly coat tapped stud holes (A) with primer.
2. Using clean brush, lightly coat threads of studs (B) with sealing compound.

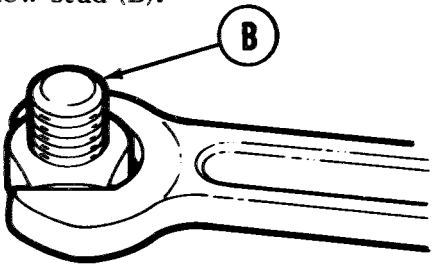


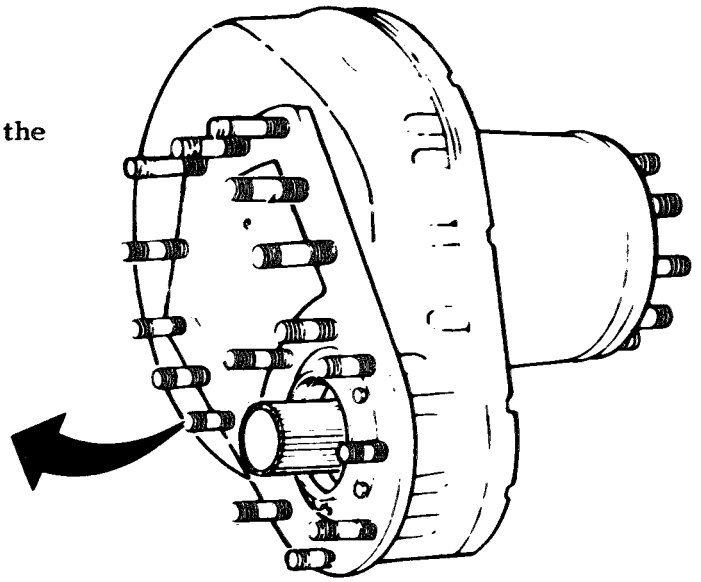


NOTE

Any stud installed in area (C) must protrude 2-15/16 inches out of tapped stud hole. Any stud installed in area (D) must protrude 2-1/4 inches out of tapped stud hole.

3. **Thread two hex nuts on new stud and jam the nuts. Using 1-1/2 inch wrench on top nut, install new stud (B).**





4. Install final drive (page 12-4).

End of Task

TA249379

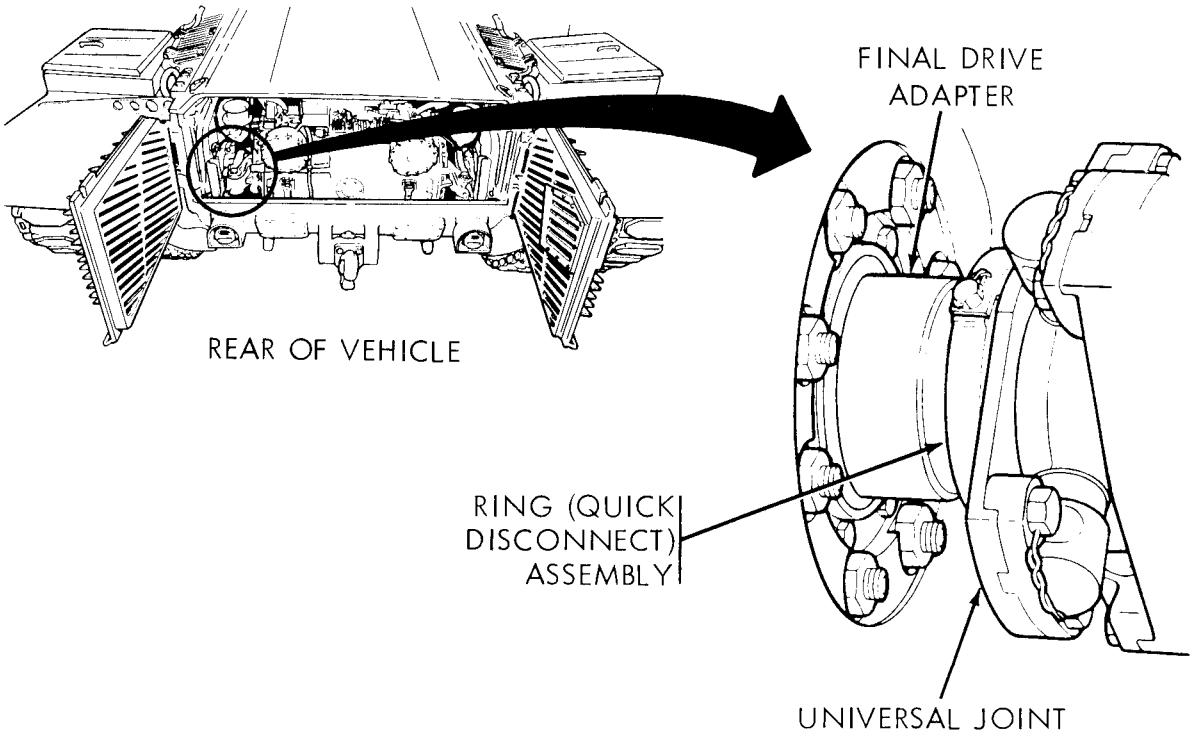
RING (QUICK-DISCONNECT) ASSEMBLY REPLACEMENT (Sheet 1 of 3)

TOOLS: Wire cutter
Ratchet with 1/2 in. drive
3/4 in. socket with 1/2 in. drive
5 in. extension with 1/2 in. drive

SUPPLIES: Lockwire (Item 61, Appendix D)

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Remove transmission shroud (page 9-2)



Go on to Sheet 2

TA249380

RING (QUICK-DISCONNECT) ASSEMBLY REPLACEMENT (Sheet 2 of 3)

NOTE

Do the following procedure for both sides of powerplant.

REMOVAL:

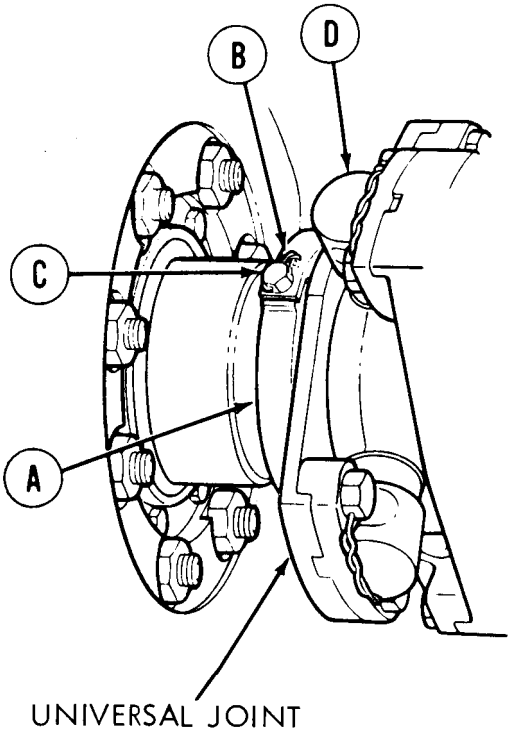
1. Rotate ring (quick-disconnect) assembly (A) to a workable position.

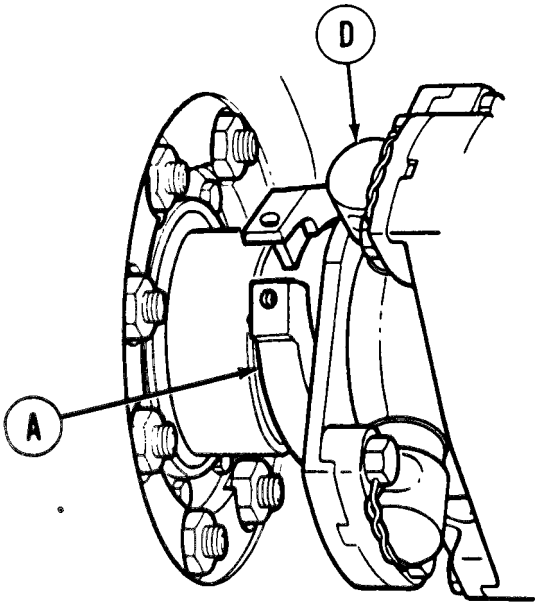
2. Using wire cutter, cut lockwire (B).

NOTE

When removing screw (C), hold onto quick-disconnect ring (A) or it will snap open and fall down into engine compartment.

3. Using socket and extension, remove screw (C).





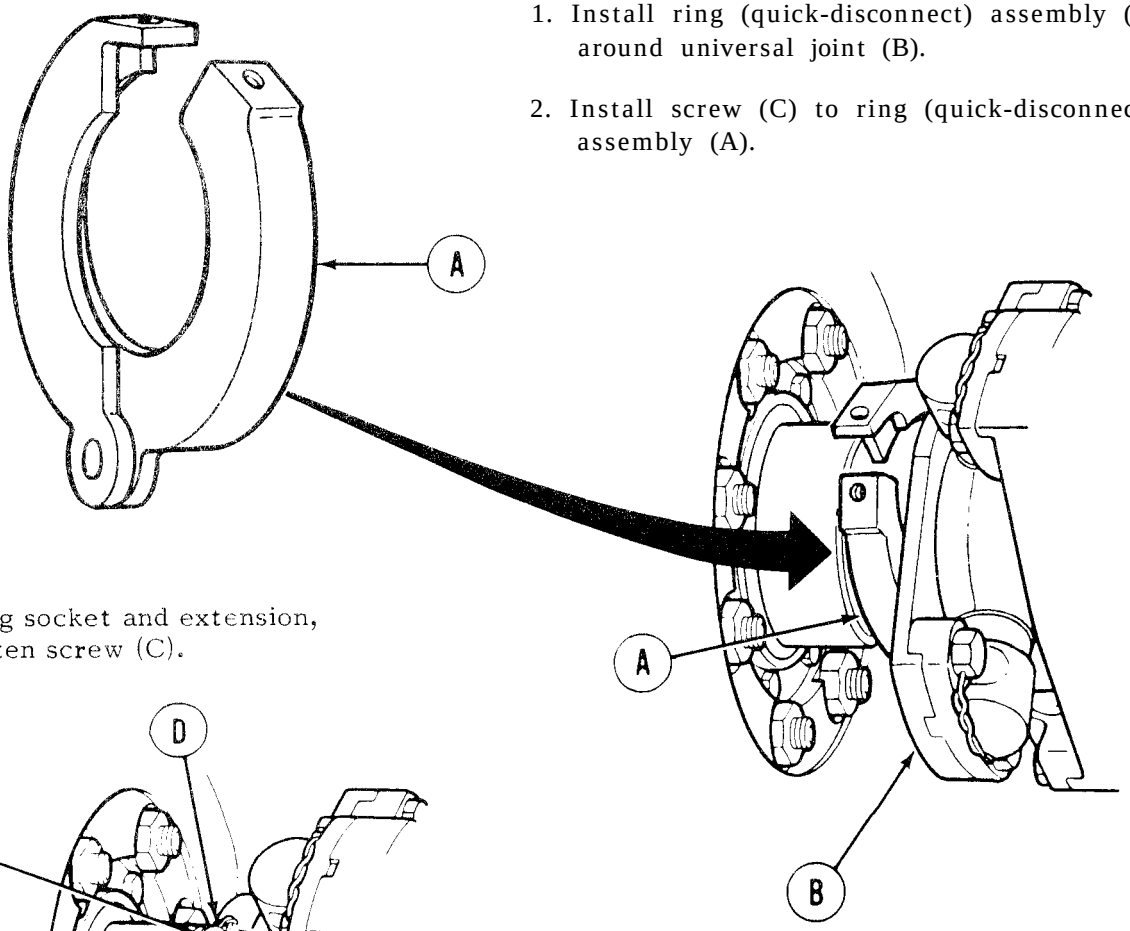
4. Remove ring (quick-disconnect) assembly (A) from universal joint (D).

Go on to Sheet 3

TA249381

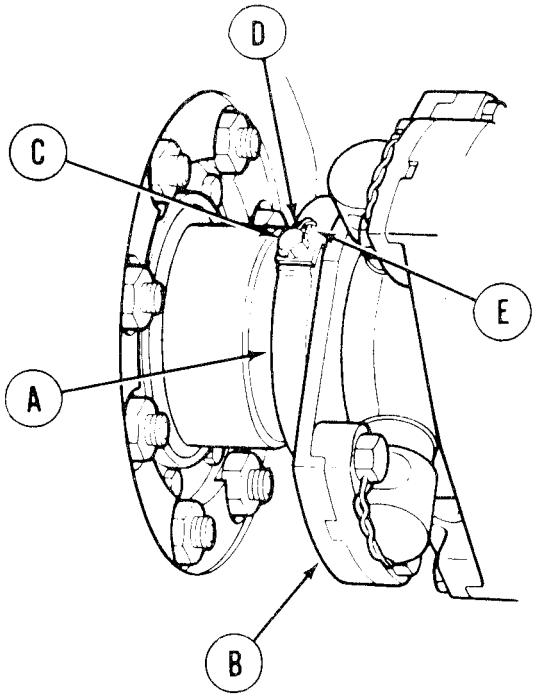
RING (QUICK-DISCONNECT) ASSEMBLY REPLACEMENT (Sheet 3 of 3)

INSTALLATION:



1. Install ring (quick-disconnect) assembly (A) around universal joint (B).
2. Install screw (C) to ring (quick-disconnect) assembly (A).

3. Using socket and extension, tighten screw (C).



4. String new lockwire (D) through screw (C) and opening in ring (E).
5. Install transmission shroud (page 9-6).

End of Task

TA249382

UNIVERSAL JOINT REPLACEMENT (Sheet 1 of 7)

PROCEDURE INDEX

TOOLS: 13/16 in. socket with 1/2 in. drive
2 in. extension with 1/2 in. drive
Ratchet with 1/2 in. drive
Socket wrench handle with 1/2 in. drive
Torque wrench with 1/2 in. drive (0-175 lb-ft capacity) (0-237 N·m)
Diagonal cutting pliers
Slip joint pliers
Alining punch
Pinch bar
Crowbar
Thickness gage
Oxy-acetylene welding equipment
10 in. flat file
Hammer
3/4 in. socket with 1/2 in. drive
1-1/2 in. combination box and open end wrench
Torque wrench with 3/8 in. drive (0-200 lb-in) (0-23 N·m)
Adapter 1/2 in. -3/8 in.

SPECIAL TOOLS: Center punch (Figure F-9, Appendix F)

SUPPLIES: Lockwire (Item 61, Appendix D)
Dry cleaning solvent (Item 55, Appendix D)
Rags (Item 65, Appendix D)
Rope (Item 66, Appendix D)
Rubber gloves (Item 69, Appendix D)
Industrial goggles (Item 70, Appendix D)
Paint brush (Item 79, Appendix D)
Brazing alloy (Item 80, Appendix D)
Welding flux (Item 81, Appendix D)

PERSONNEL: Two

REFERENCES: TM 5-5420-202-10
LO 5-5420-202-12

PRELIMINARY PROCEDURES: Remove top deck (page 16-21)
Remove transmission shroud (page 9-2)
Remove transmission shroud support (page 9-15)
Remove turbosupercharger outlet elbow (page 7-76)
Block both tracks front and rear, place transmission selector lever in neutral (N), and make sure brake is released (TM 5-5420-202-10)
Pull transmission mounting guide towards rear

Go on to Sheet 2

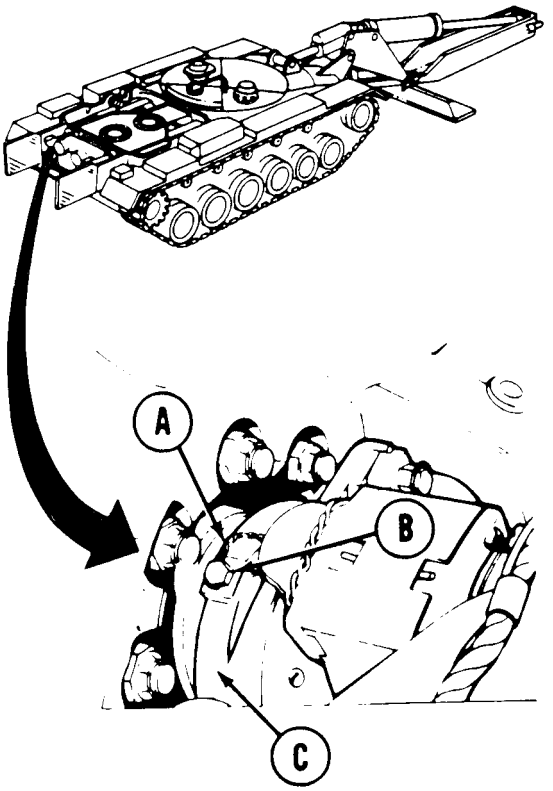
UNIVERSAL JOINT REPLACEMENT (Sheet 2 of 7)

REMOVAL:

NOTE

Turn quick-disconnect clamp until it is in working position.

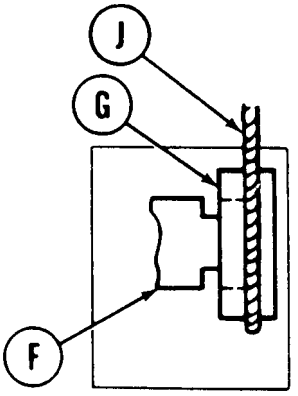
1. Using cutting pliers, cut lockwire (A)
2. Using extension and 3/4 inch socket, remove screw (B).
3. Open quick-disconnect clamp (C).
4. Remove quick-disconnect clamp (C).
5. Check quick-disconnect clamp (C) for cracks, breaks, and sprung hinge. Replace if necessary.
6. Place large crowbar (D) in position to support final drive flange (G).
7. While holding down on large crowbar (D), use pinch bar (E) to pry final drive adapter assembly (F) until it comes loose from final drive flange (G).

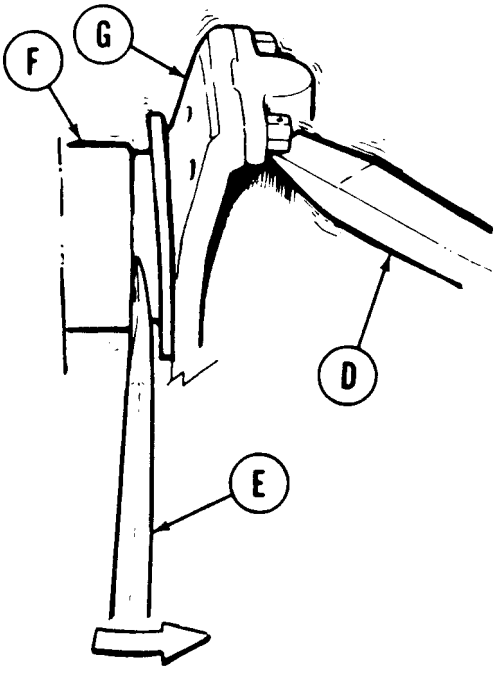


CAUTION

Use rope capable of picking up and holding at least 92 pounds.

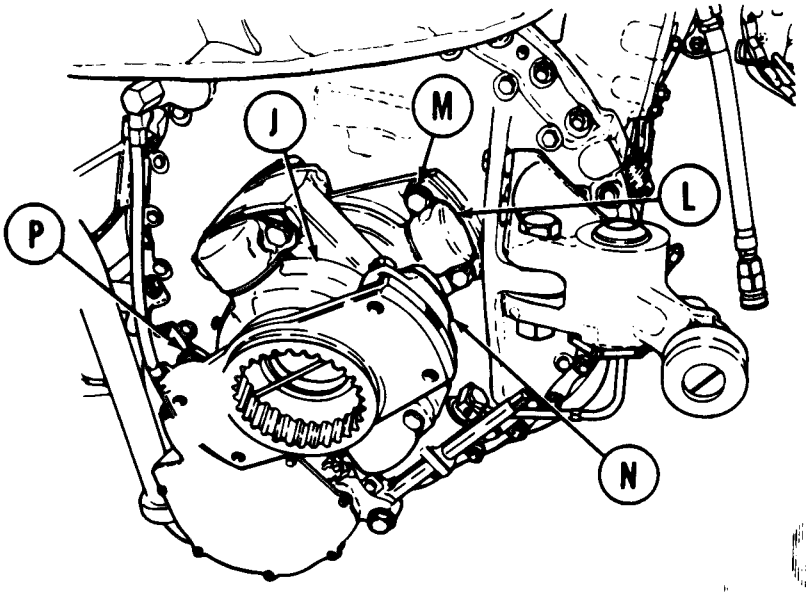
8. Attach rope (H) loosely to universal joint (J)

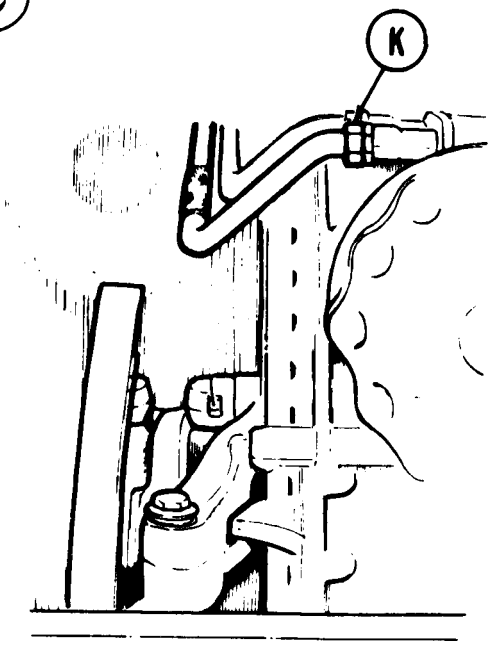




Go on to Sheet 3

UNIVERSAL JOINT REPLACEMENT (Sheet 3 of 7)





9. Using 1-1/2 inch wrench, loosen connector (K). Move oil cooler tube to one side.

10. Using cutting pliers, cut two lockwires (L). Remove lockwires.

NOTE

Turn universal joint (J) left or right to remove all four screws (M). It may be necessary to use crowbar to wedge universal joint to prevent it from turning while removing screws (M).

11. Using 13/16 inch socket and extension, remove three of four screws (M).

12. Tighten rope to universal joint (J).

13. Using 13/16 inch socket and extension, remove fourth screw (M).

14. Using rope and crowbar, lift universal joint from tank and place in work area.

15. Remove rope from universal joint.

16. Using cutting pliers, cut lockwire (N). Remove lockwire.

17. Using 13/16 inch socket and hammer, if required, loosen four screws (P).

18. Using 13/16 inch socket, remove four screws (P).

Go on to Sheet 4

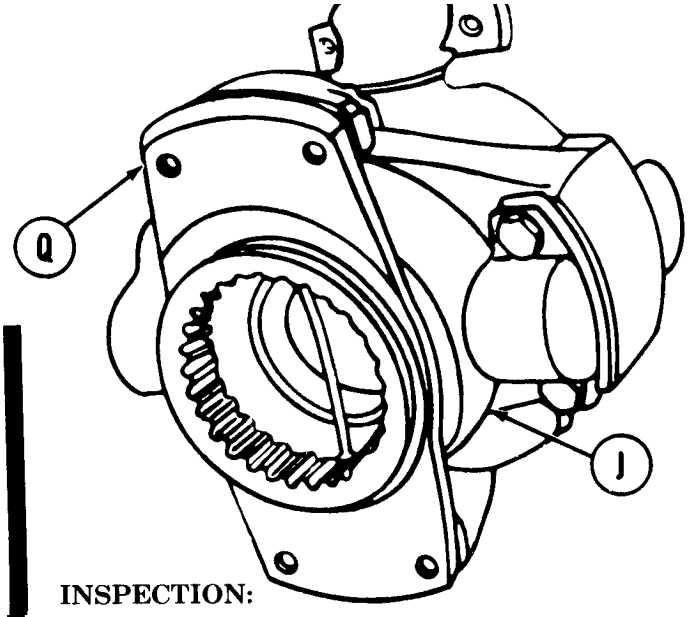
UNIVERSAL JOINT REPLACEMENT (Sheet 4 of 7)

19. Using hammer, tap final drive flange (Q) loose from universal joint (J).

20. Remove final drive flange (Q) from universal joint (J).

WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. To prevent personal injury, wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point for Type #1 Dry Cleaning Solvent is 100°F (38 °C) and for Type #2 is 138 °F (50 " C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.



21. Wearing rubber gloves and using rags and dry cleaning solvent, clean final drive flange (Q).

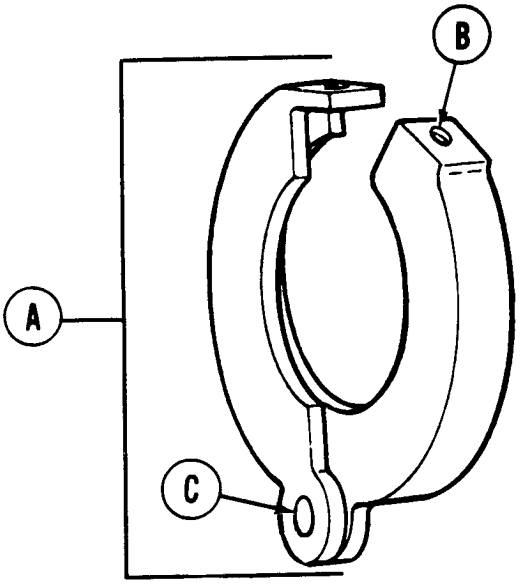
22. Check final drive flange (Q) for cracks and breaks. Replace if necessary.

INSPECTION:

1. Using brush and solvent, clean quick-disconnect clamp (A) Be sure tapped hole (B) is free of grease and dirt.

2. Inspect tapped hole (B) for cross-threaded or stripped threads. If threads are damaged, replace quick-disconnect clamp (A).

3. Check for looseness of pin (C). If pin (C) is loose, replace quick-disconnect clamp (A).



Go on to Sheet 4.1

UNIVERSAL JOINT REPLACEMENT (Sheet 4.1 of 7)

NOTE

4. Check staking of pin (C). Stake marks should be on flange (D) and overlapping pin (C) on four sides.

5. If not staked properly, use fabricated center punch and stake pin (C) four places, equally spaced on flange (D). If chamfer on flange (D) is so large that metal does not mushroom over pin (C) when staked, replace quick-disconnect clamp (A).

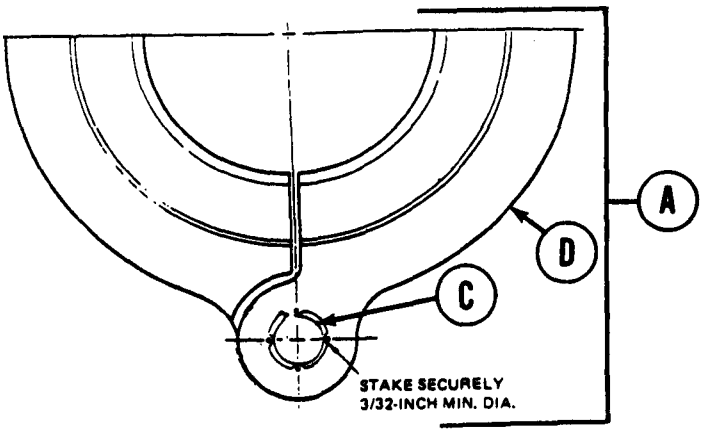
6. Inspect quick-disconnect clamp (A) for cracks, breaks, or sprung hinge. If damaged, replace quick-disconnect clamp (A).

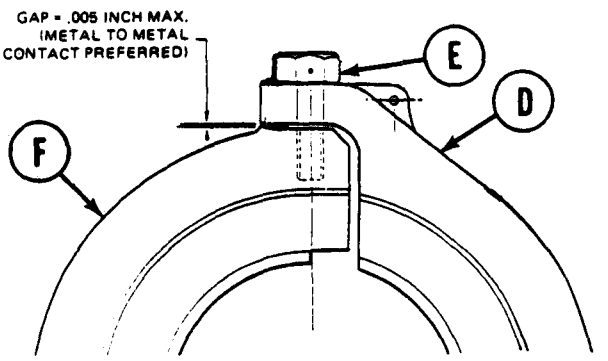
7. Close quick-disconnect clamp (A) and install screw (E) finger tight.

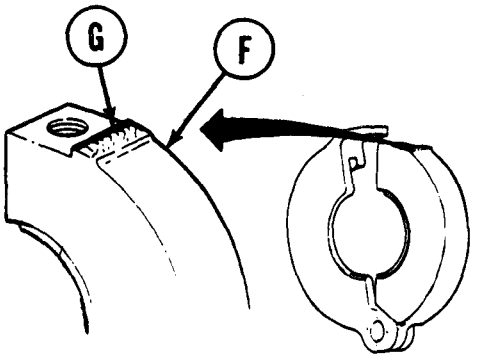
8. Using thickness gage, check clearance between flange (F) and flange (D). Clearance must be 0.000 to 0.005 inch. If more than 0.005 inch, proceed to step 9. If clearance is within tolerance, go to sheet 4.2.

9. Using oxy-acetylene welding equipment, brazing alloy and welding flux, braze a bead (G) across top of flange (F).

10. Using file, file bead (G) down until metal to metal contact exists between flange (F) and flange (D).







Go on to Sheet 4.2

UNIVERSAL JOINT REPLACEMENT (Sheet 4.2 of 7)

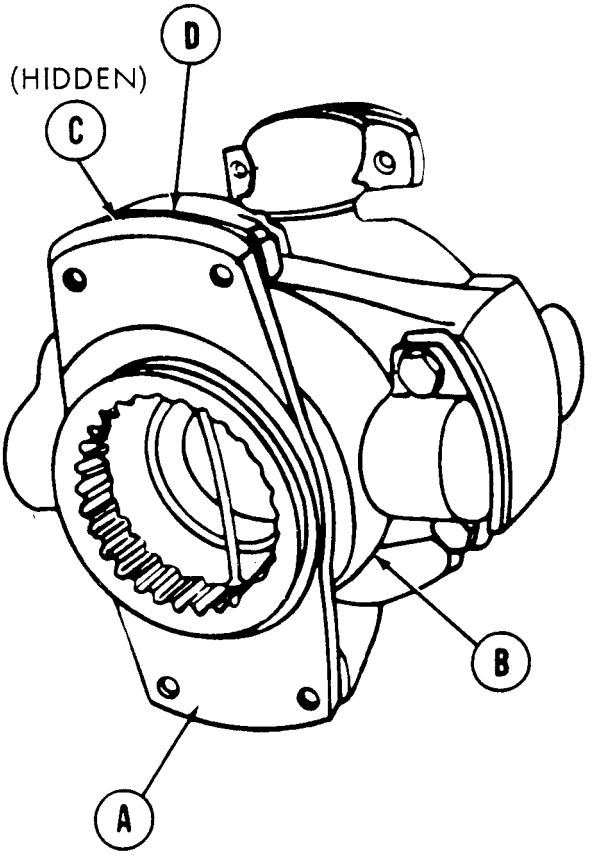
INSTALLATION:

1 Position final drive flange (A) to universal joint (B).

2. Using 13/16 inch socket, install four screws (C).

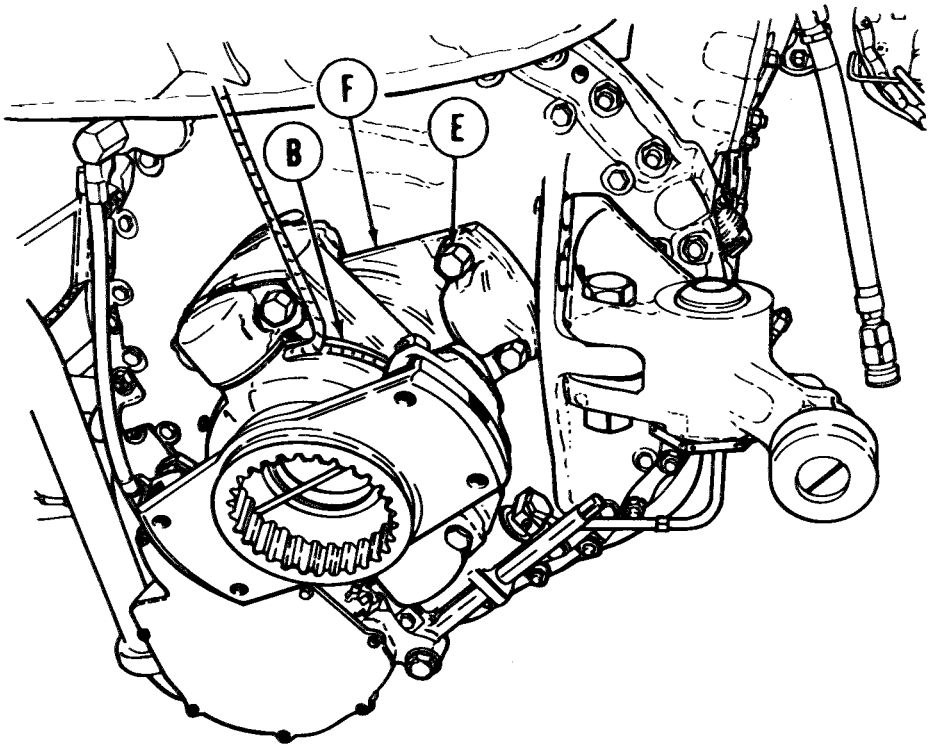
3. Using torque wrench, tighten four screws (C) to 110-130 lb-ft (146-173 N·m).

4. Using slip joint pliers, install lockwires (D) to each two adjacent screws (C).



Go on to Sheet 5

UNIVERSAL JOINT REPLACEMENT (Sheet 5 of 7)



CAUTION

Use rope capable of picking up and holding at least 92 lbs.

5. Using rope and crowbar, position universal joint (B] into general position in vehicle.

6. Insert alining punch through hole for one of the screws (E), and into corresponding transmission flange (F) screw hole to aline universal joint.

NOTE

Turn universal joint (B) left or right to install four screws (E)

7. Mine three remaining screw holes with transmission flange (F).

8. Start threads of three screws (E), by hand.

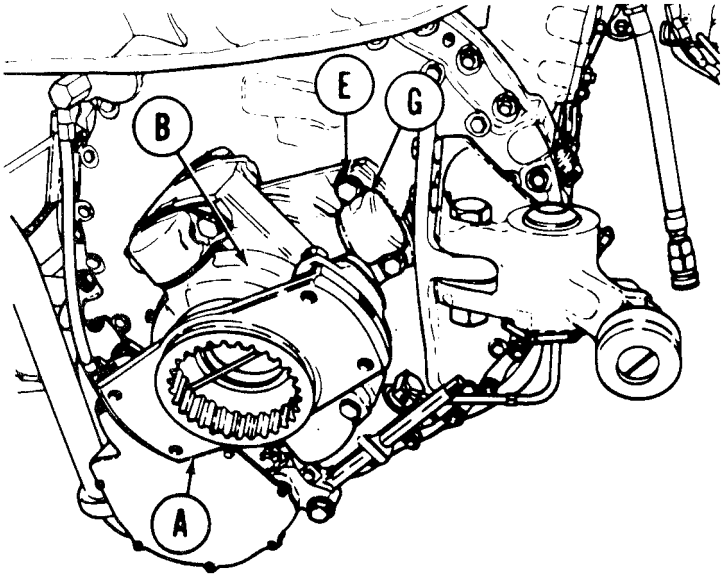
9. Remove alining punch from fourth screw hole.

10. Start threads of fourth screw (E), by hand.

Go on to Sheet 6

TA249387

UNIVERSAL JOINT REPLACEMENT (Sheet 6 of 7)



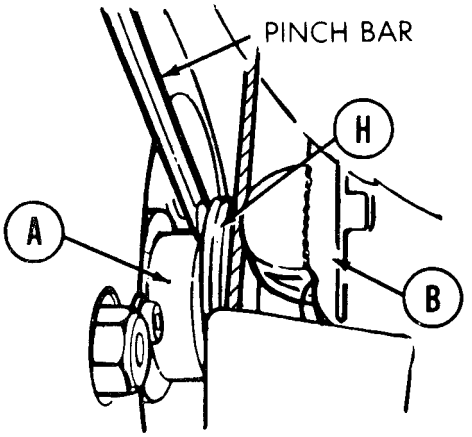
NOTE

It may be necessary to use pry-bar to wedge the universal joint to prevent it from turning while tightening screws (E).

11. Using 13/16 inch socket, tighten four screws (E).

12. Using torque wrench, torque four screws (E) to 110-130 lb-ft (146-173N•m).

13. Using slip joint pliers, install locking wire (G) to each two adjacent screws (E) (page C-28).



14. Using rope, have second technician, aline universal joint with final drive adapter (H).

15. Using pinch bar, pry final drive adapter (H) away from final drive (A) into universal joint (B) (each side).

Go on to Sheet 7

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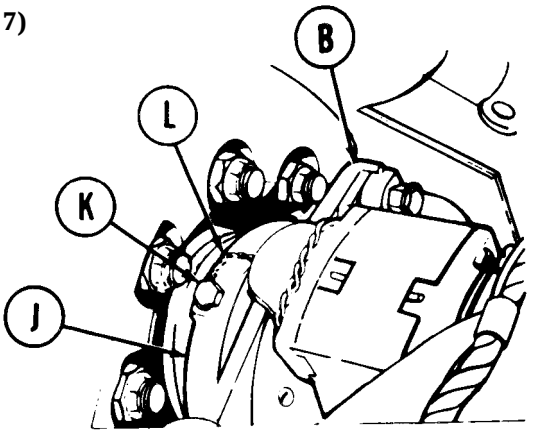
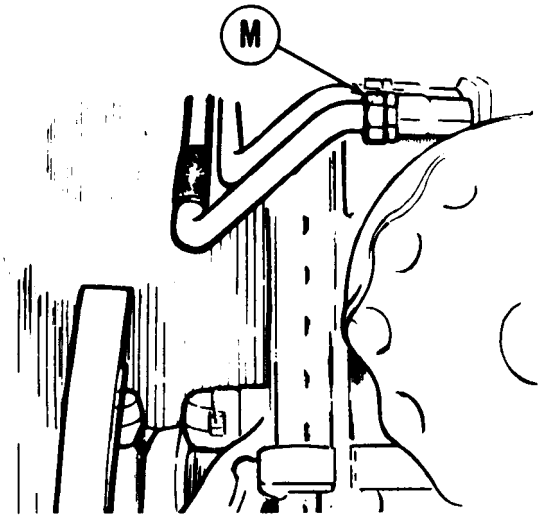
UNIVERSAL JOINT REPLACEMENT (Sheet 7 of 7)



16. Remove rope from universal joint (B).
17. Fit quick-disconnect clamp (J) over grooves in final drive flange and final drive adapter assembly.
18. Hold quick-disconnect clamp (J) over grooves in final drive flange and final drive adapter assembly.
19. Close quick-disconnect clamp (J).
20. Using extension and 3/4 inch socket, install one screw (K).
21. Using torque wrench, torque screw (K) to 60-120 lb-in (7-14 N·m).
22. Using slip joint pliers, install lockwire (L) to screw (K) and quick-disconnect clamp (J) (page C-34).
23. Using 1-1/2 inch wrench, install tube (M) to transmission.
24. Install turbosupercharger outlet elbow (page 7-78).
25. Lubricate universal joint (LO 5-5420-202-12).
26. Install transmission shroud support (page 9-15).
27. Push transmission mounting guide towards transmission and lock into place.
28. Install transmission shroud (page 9-6).
29. Install top deck (page 16-23).
30. Place transmission selector lever in park “P” and apply parking brake (TM 5-5420-202-10).
31. Remove track blocks.



End of Task

UNIVERSAL JOINT REPAIR (Sheet 1 of 2)

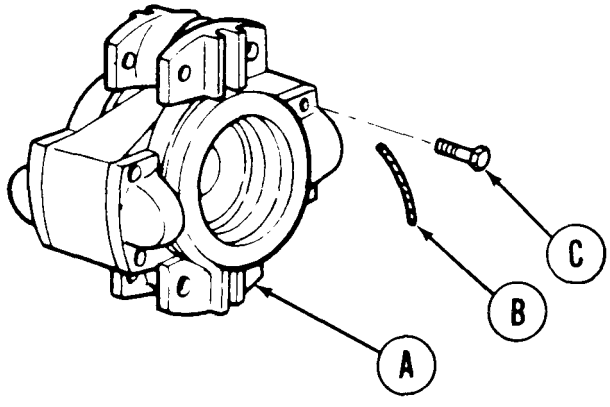
TOOLS: 13/16 in. socket with 1/2 in. drive
18 in. hinge handle with 1/2 in. drive
7/16 in. combination box and open end wrench
Diagonal cutting pliers
Slip joint pliers
Hammer
26 in. pinch bar
Torque wrench with 1/2 in. drive (0-175 lb-ft) (0-237 N.m)
Vise

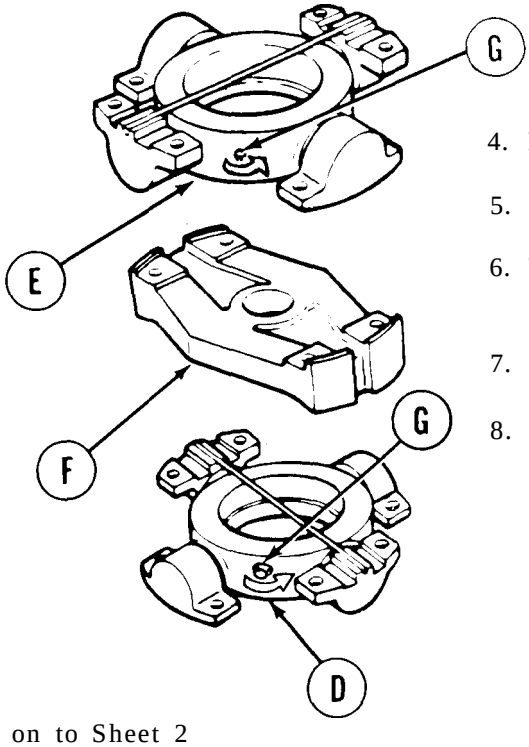
SUPPLIES: Locking wire (Item 60, Appendix D)
Lubricating oil (Item 44, Appendix D)

PRELIMINARY PROCEDURES: Remove universal joint from vehicle (page 12-15)

DISASSEMBLY:

1. Place universal joint on end (A) in vise.
2. Using cutting pliers, cut four locking wires (B). Remove locking wires.
3. Using socket and hinge handle, loosen eight screws (C). Using hammer, gently tap hinge handle to loosen screws, if necessary.





4. Place universal joint on side (D).
5. Using socket and hinge handle, remove four screws (C).
6. Using pinch bar, pry loose spider assembly (E) from coupling plate (F).
7. Lift spider assembly (E) from coupling plate (F).
8. Using wrench, remove two lubrication fittings (G) if damaged or broken.

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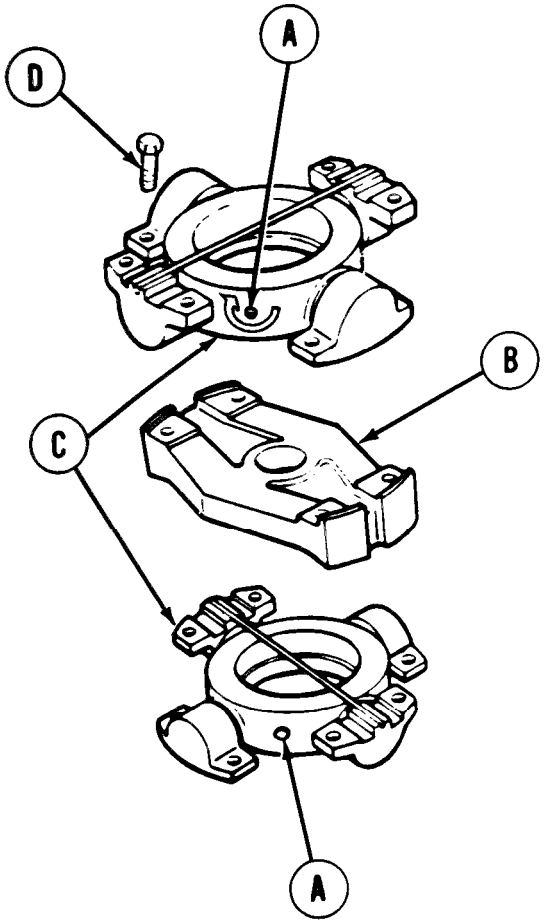
Go on to Sheet 2

UNIVERSAL JOINT REPAIR (Sheet 2 of 2)

9. Turn universal joint over. Repeat steps 5 thru 8 to remove second spider assembly from coupling plate.

10. Replace coupling plate and each spider in its entirety if any component within an assembly is cracked or broken.



ASSEMBLY:

1. Using wrench, replace lubrication fitting (A), if removed.

2. Place coupling plate (B) and either spider assembly (C) in vise.

3. Place spider assembly (C) into position on coupling plate (B).

4. Using hammer, gently tap spider assembly (C) and coupling plate (B) into snug fit.

5. Using hinge handle, install four screws (D).

6. Using torque wrench, tighten screws (D) to 115-130 lb-ft. (155-175 N•m).

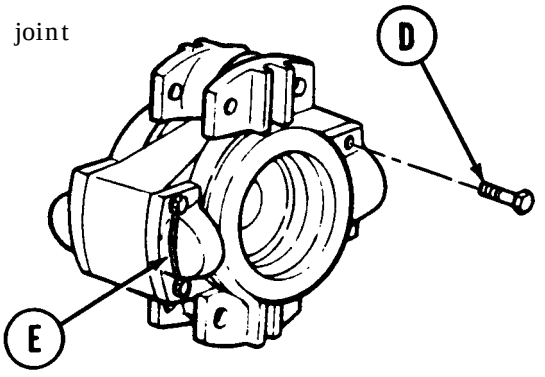
7. Turn universal joint over. Repeat steps 1 through 6.

8. Place universal joint on end.

9. Using slip joint pliers, attach locking wire (E) to each two adjacent screws (D) (page C-34).

10. Using lubricating oil, oil universal joint assembly.

11. Install universal joint (page 12-1



End of Task

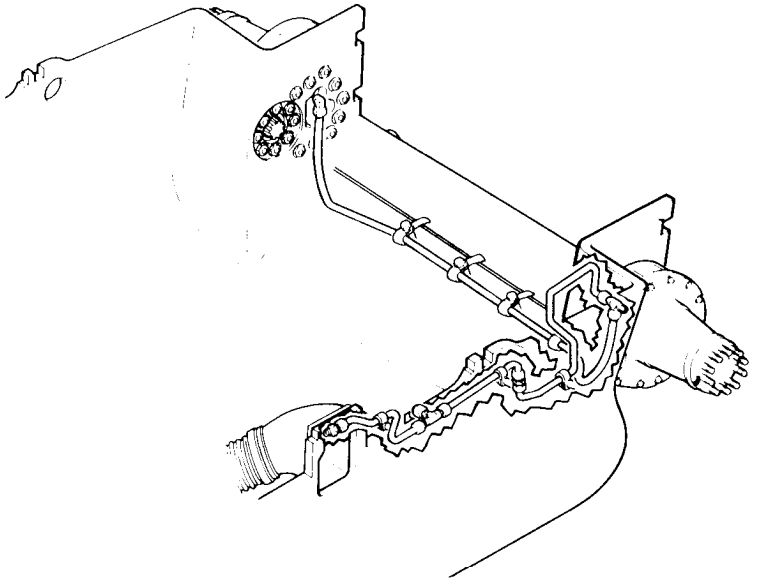
FINAL DRIVE VENTING SYSTEM REPLACEMENT (Sheet 1 of 10)

PROCEDURE INDEX

TOOLS: 7/16 in. combination box and open end wrench
9/16 in. combination box and open end wrench
9/16 in. crowfoot wrench with 3/8 in. drive
5/8 in. combination box and open end wrench
11/16 in. combination box and open end wrench
11/16 in. crowfoot wrench with 3/8 in. drive
13/16 in. combination box and open end wrench
10 in. adjustable wrench
Torque wrench with 3/8 in. drive, 0-200 lb-in (0-23 N·m)

SUPPLIES: Lockwashers
Nuts
Sleeves

PRELIMINARY PROCEDURE: Remove powerplant (page 5-2)

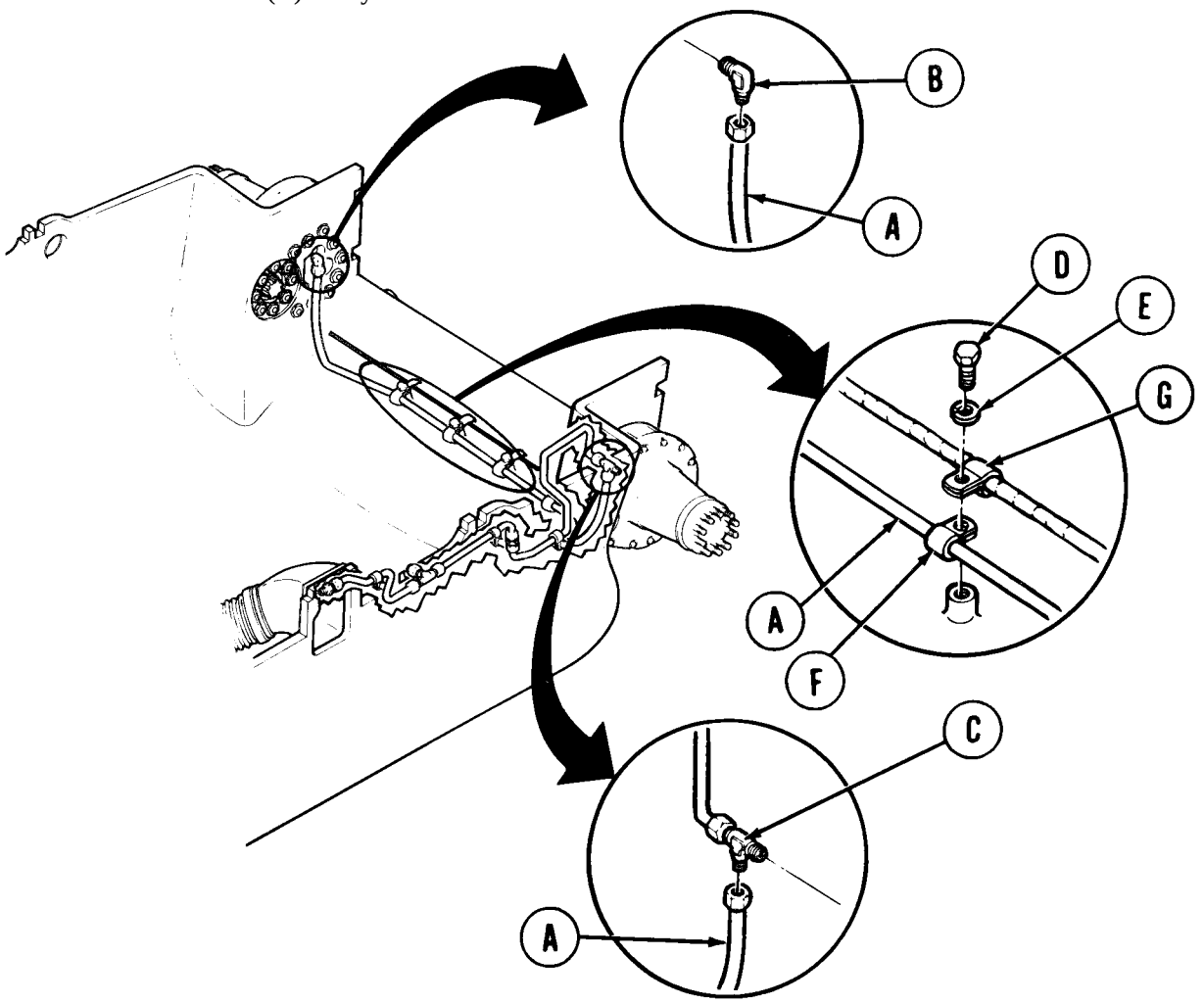


Go on to Sheet 2

FINAL DRIVE VENTING SYSTEM REPLACEMENT (Sheet 2 of 10)

REMOVAL:

1. Using 9/16 inch wrench, disconnect tubing (A) from elbow (B) in right final drive.
2. Using 9/16 inch wrench, disconnect tubing (A) from tee (C) on left final drive.
3. Using 7/16 inch wrench, remove four screws (D) and lockwashers (E) securing clamps (F and G). Throw lockwashers (E) away.



4. Remove tubing (A) and clamps (F) from vehicle.
5. Remove clamps (F) from tubing (A).
6. Using adjustable wrench, remove elbow (B) from right final drive.

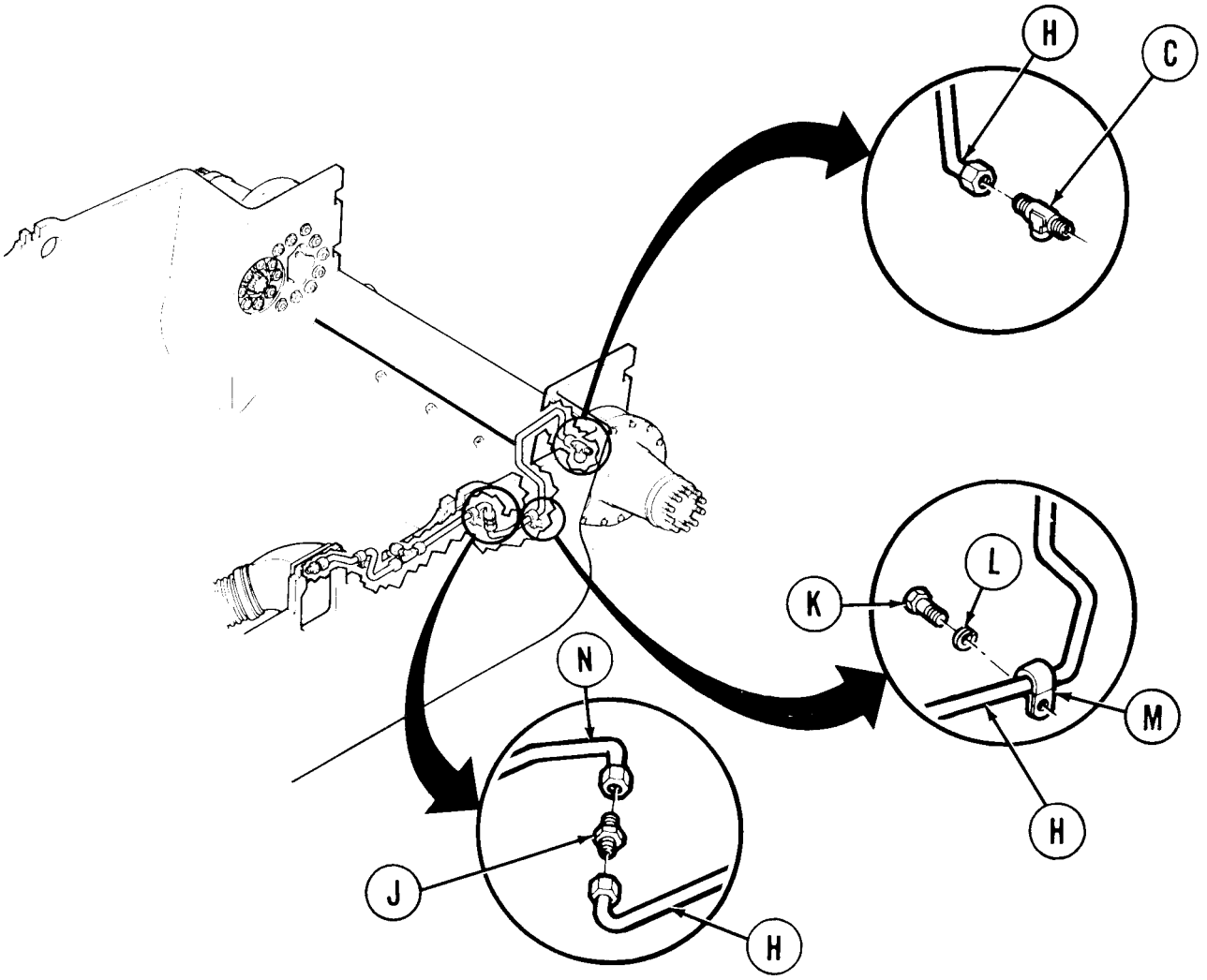
Go on to Sheet 3

FINAL DRIVE VENTING SYSTEM REPLACEMENT (Sheet 3 of 10)

7. Using 9/16 inch wrench, disconnect tube assembly (H) from tee (C).

8. Using 13/ 16 inch wrench to hold adapter (J), use 9/16 inch wrench and disconnect tube assembly (H) from adapter (J).

9. Using 7/16 inch wrench, remove two screws (K) and lockwashers (L) securing clamps (M). Throw lockwashers (L) away.



10. Remove tube assembly (H) and clamps (M) from vehicle.

11. Remove clamps (M) from tube assembly (H).

12. Using adjustable wrench, remove tee (C) from left final drive.

13. Using 11/16 inch wrench to hold tube assembly (N), use 13/16 inch wrench and remove adapter (J).

Go on to Sheet 4

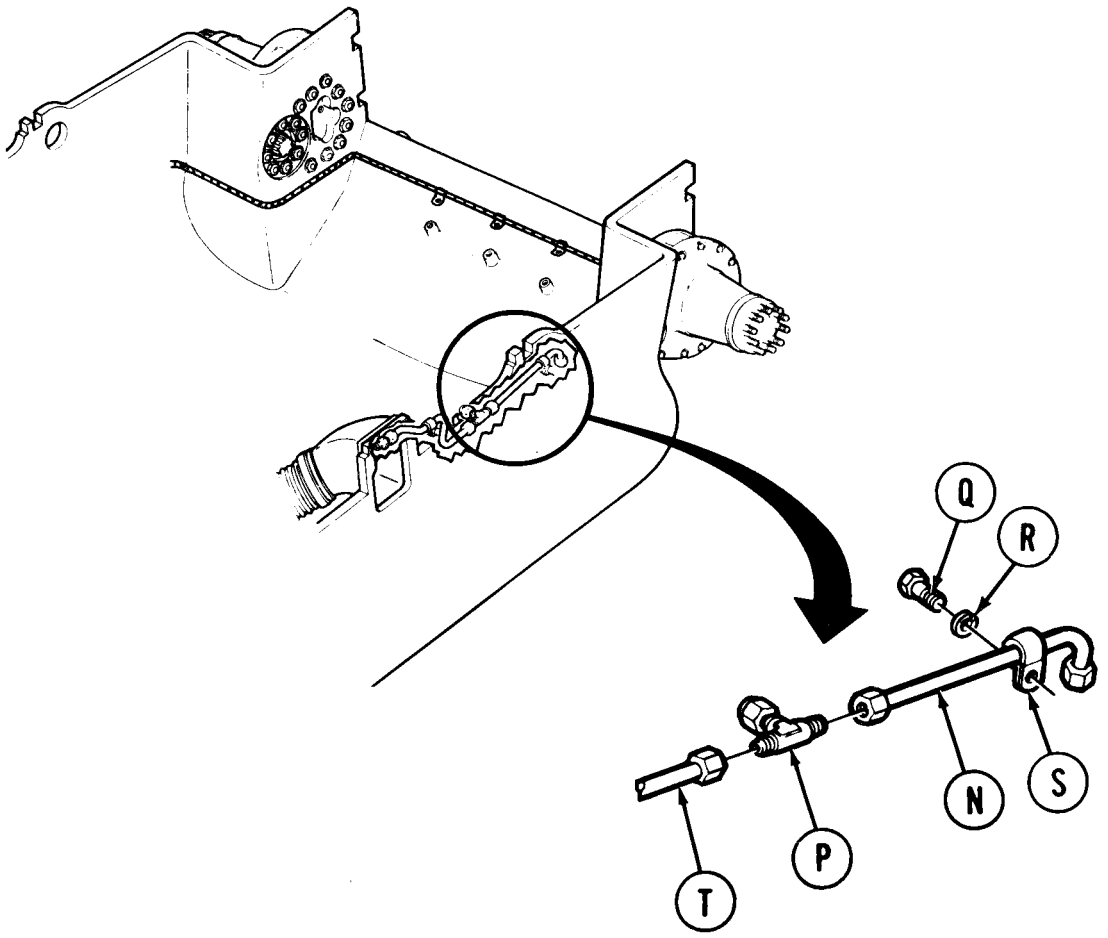
FINAL DRIVE VENTING SYSTEM REPLACEMENT (Sheet 4 of 10)

14. Using adjustable wrench to hold tee (P), use 11/16 inch wrench and disconnect tube assembly (N) from tee (P).

15. Using 7/16 inch wrench, remove screw (Q) and lockwasher (R) securing clamp (S). Throw lockwasher (R) away.

16. Remove tube assembly (N) and clamp (S) from vehicle.

17. Remove clamp (S) from tube assembly (N).



18. Using adjustable wrench to hold tee (P), use 11/16 inch wrench and disconnect tube assembly (T) from tee (P).

19. Remove tee (P).

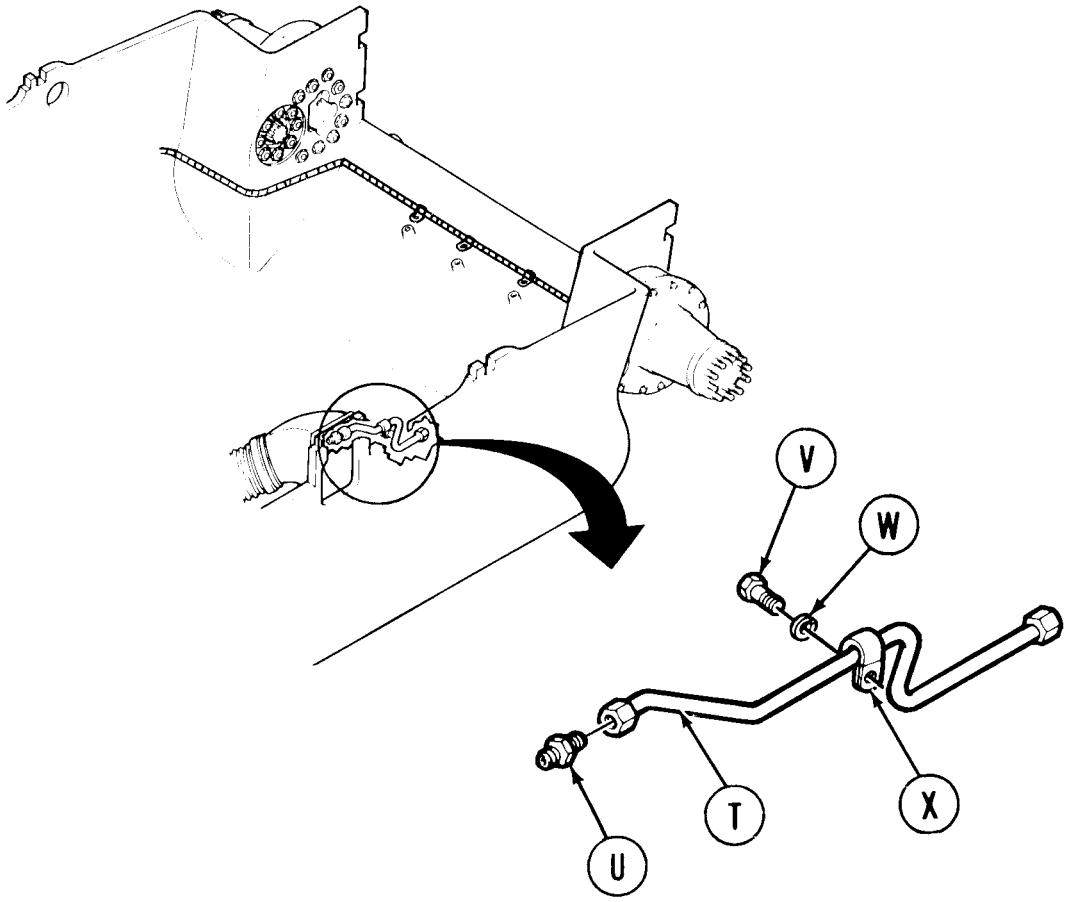
Go on to Sheet 5

FINAL DRIVE VENTING SYSTEM REPLACEMENT (Sheet 5 of 10)

20. Using 5/8 inch wrench to hold adapter (U), use 11/16 inch wrench and disconnect tube assembly (T) from adapter (U).

21. Using 7/16 inch wrench, remove screw (V) and lockwasher (W) securing clamp (X). Throw lockwasher (W) away.

22. Remove tube assembly (T) and clamp (X) from vehicle,

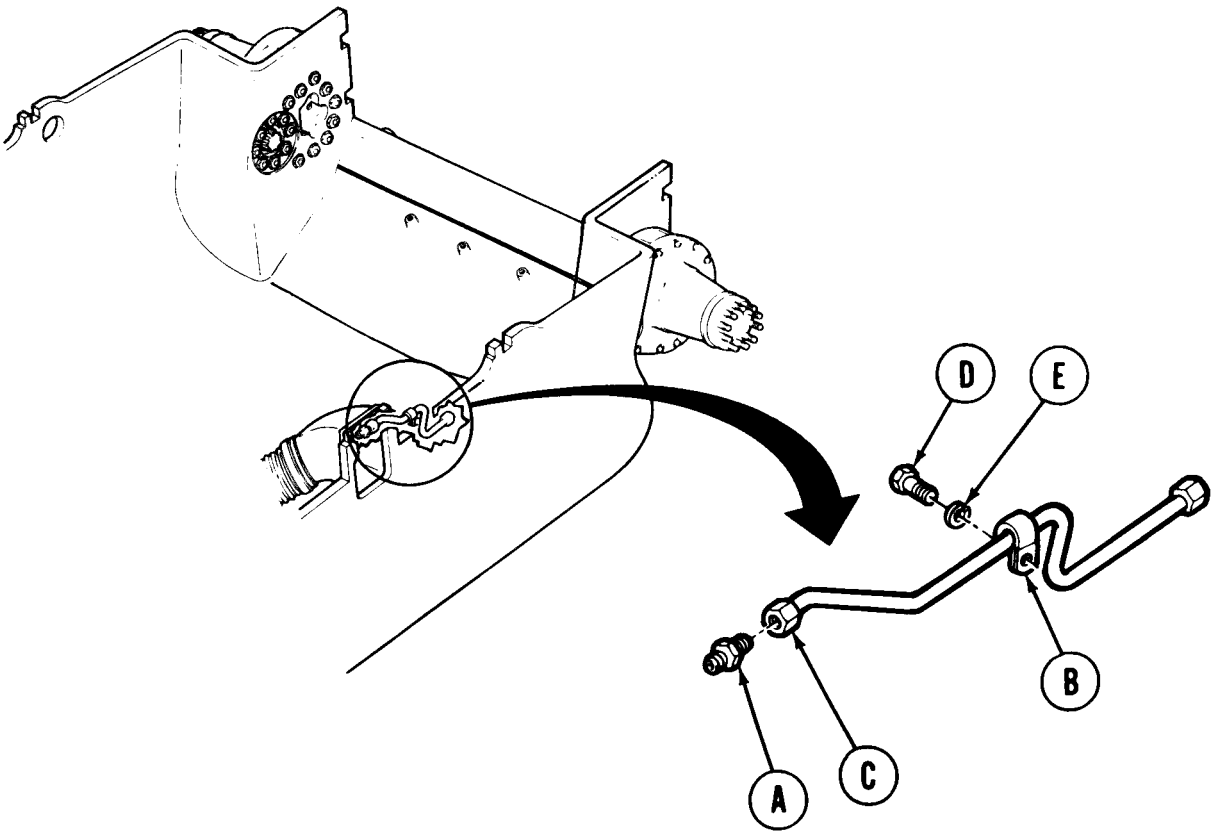


23. Remove clamp (X) from tube assembly (T).

24. Using 5/8 inch wrench ,remove adapter (U) from elbow of left air cleaner.

Go on to Sheet 6

FINAL DRIVE VENTING SYSTEM REPLACEMENT (Sheet 6 of 10)



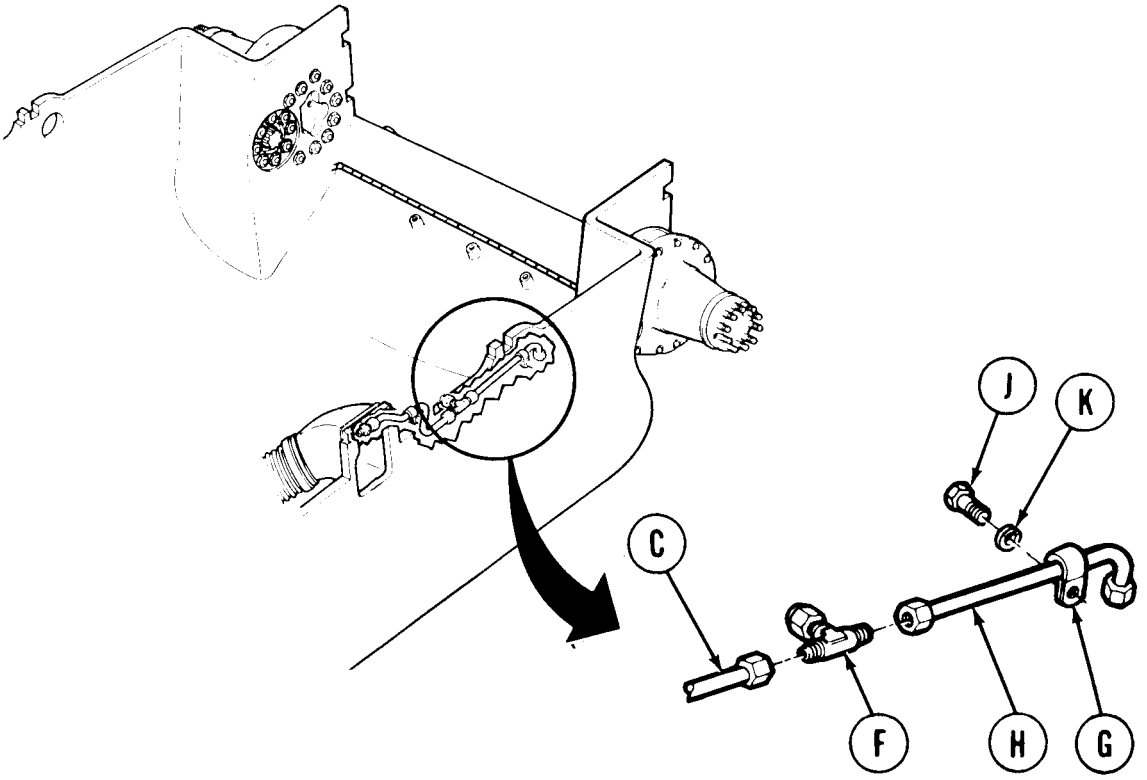
INSTALLATION:

1. Using 5/8 inch wrench, install adapter (A) into elbow of left air cleaner.
2. Install clamp (B) onto tube assembly (C) and position tube assembly (C) onto hull.
3. Using fingers, connect tube assembly (C) to adapter (A).
4. Using torque wrench with 11/16 inch crowfoot and 5/8 inch wrench to hold adapter (A), tighten tube assembly (C) nut to 75-85 lb-in (8.4-9.5N · m).
5. Using 7/16 inch wrench, install and tighten screw (D) and new lockwasher (E) securing clamp (B) to hull.

Go on to Sheet 7

FINAL DRIVE VENTING SYSTEM REPLACEMENT (Sheet 7 of 10)

6. Using fingers, connect tube assembly (C) to tee (F).
7. Install clamp (G) onto tube assembly (H) and position tube assembly (H) onto hull.
8. Using fingers, connect tube assembly (H) to tee (F).



9. Using adjustable wrench to hold tee (F), and using torque wrench with 11/16 inch crowfoot, tighten tube assembly (C and H) nuts to 75-85) lb-in (8.4-9.5N · m).
10. Using 7/16 inch wrench, install and tighten screw (J) and new lockwasher (K) securing clamp (G) to hull.

Go on to Sheet 8

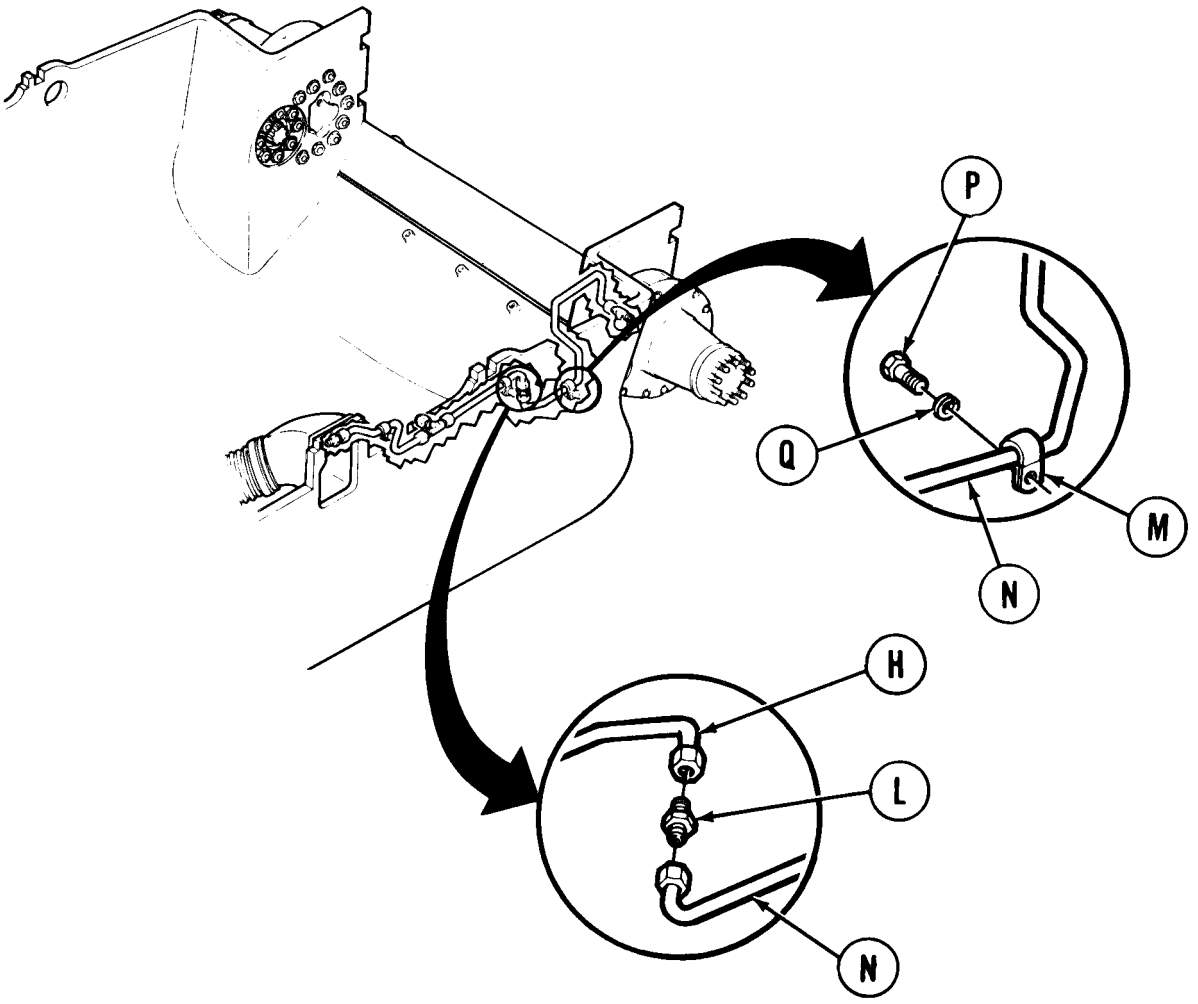
FINAL DRIVE VENTING SYSTEM REPLACEMENT (Sheet 8 of 10)

11. Using fingers, connect adapter (L) to tube assembly (H).

12. Install two clamps (M) on tube assembly (N) and position to hull.

13. Using fingers, connect tube assembly (N) to adapter (L).

14. Using 13/ 16 inch wrench to hold adapter (L), and using torque wrench with 11/16 inch crowfoot, tighten tube assembly (H) nut to 75-85 lb-in (8.4-9.5 N-m). Using torque wrench with 9/16 inch crowfoot, tighten tube assembly (N) nut to 75-85 lb-in (8.4-9.5 N·m).



15. Using 7/16 inch wrench, install and tighten screws (P) and new lockwashers (Q) securing clamps (M) to hull.

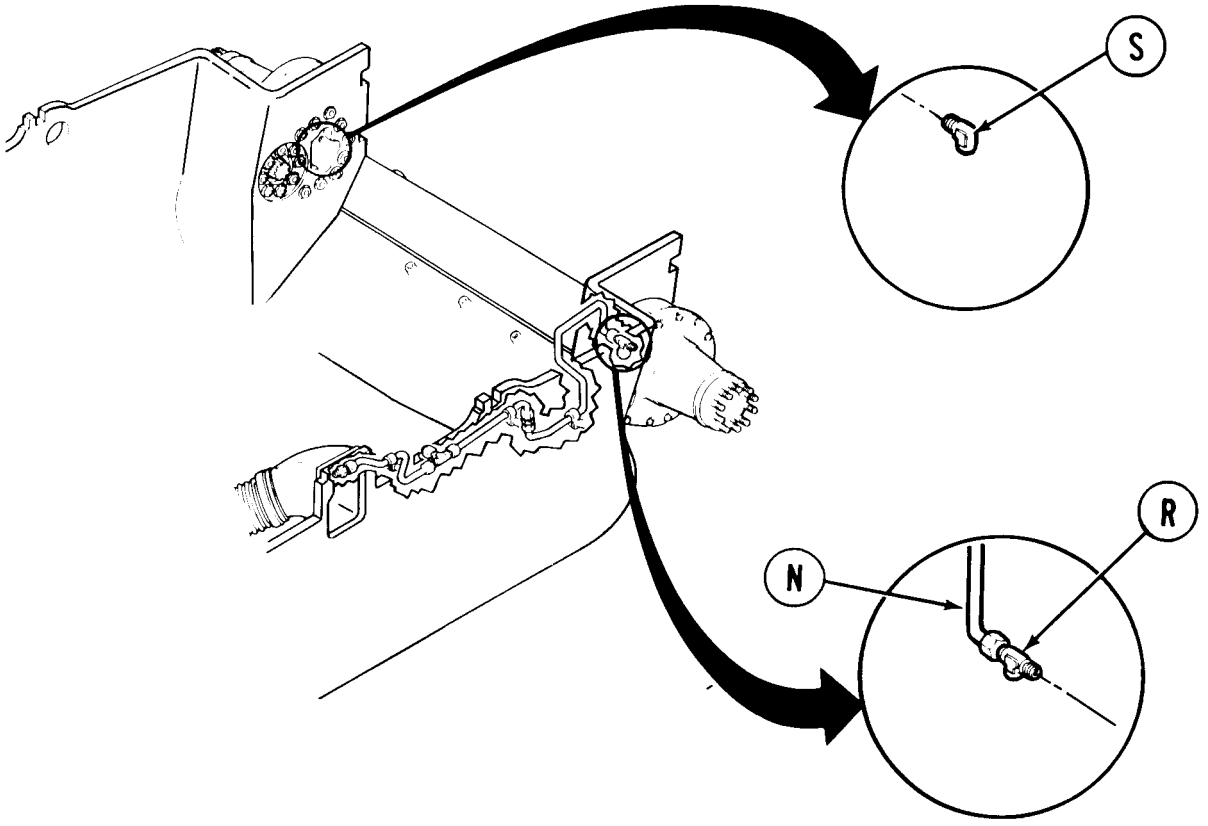
Go on to Sheet 9

FINAL DRIVE VENTING SYSTEM REPLACEMENT (Sheet 9 of 10)

16. Using adjustable wrench, install tee (R) onto left final drive.

17. Using fingers, connect tube assembly (N) to tee (R).

18. Using torque wrench and 9/16 inch crowfoot, tighten tube assembly (N) nut to 75-85 lb-in (8.4-9.5 N·m).



19. Using adjustable wrench, install elbow (S) into right final drive.

Go on to Sheet 10

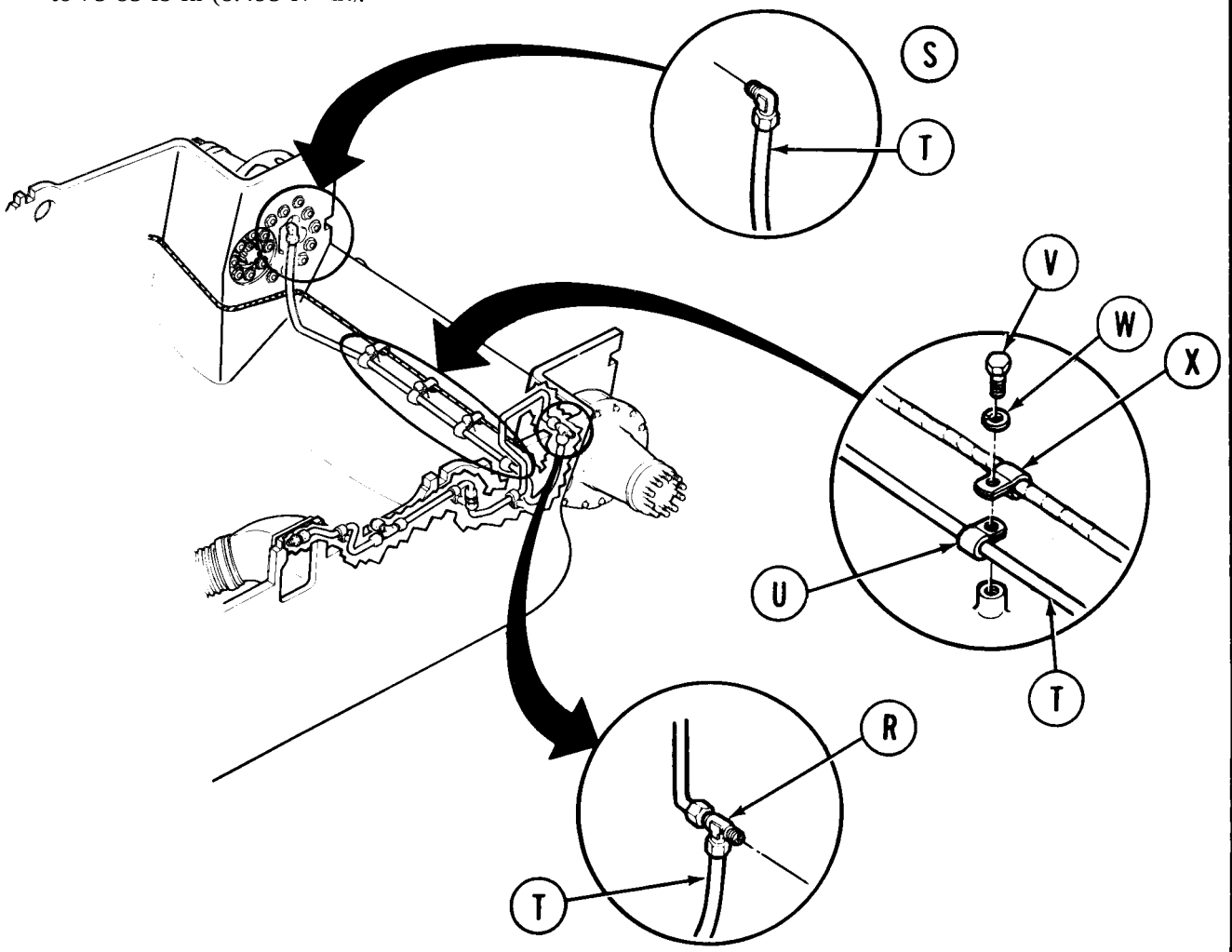
FINAL DRIVE VENTING SYSTEM REPLACEMENT (Sheet 10 of 10)

NOTE

If new tube (T) is being installed, obtain (from supply) two tube nuts (MS51823) and two sleeves (MS51825) and install onto new tube (T).

20. Using fingers, connect tube assembly (T) to elbow (S) and tee (R).

21. Using torque wrench and 9/16 inch crowfoot, tighten tube assembly (T) nuts to elbow (S) and tee (R) to 75-85 lb-in (8.495 N·m).



22. Install four clamps (U) onto tube assembly (T).

23. Using 7/16 inch wrench, install and tighten screws (V) and new lockwashers (W) securing clamps (U and X).

24. Install powerplant (page 5-14).

End of Task

CHAPTER 13
BRAKE SYSTEM MAINTENANCE
INDEX

BRAKE MASTER CYLINDER REPLACEMENT (Sheet 1 of 9)

PROCEDURE INDEX

TOOLS: Ratchet with 1/2 in. drive
1 in. socket (deep style) with 1/2 in. drive
1-1/8 in. socket with 1/2 in. drive
9/16 in. combination box and open end wrench
11/ 16 in. combination box and open end wrench
3/4 in. combination box and open end wrench
13/16 in. combination box and open end wrench
10 in. pipe wrench
Screwdriver, flat-tip
Funnel, 1 qt cap. with flexible spout

SUPPLIES: Container, 1 qt. cap.
Rags (Item 65, Appendix D)
Dry cleaning solvent (Item 55, Appendix D)
Adhesive (Item 4, Appendix D)
Brake fluid (Item 40, Appendix D)
Gasket (2 required)
1/2 in. masking tape (Item 58, Appendix D)
Lockwashers (4 required)
Gloves (Item 69, Appendix D)
Goggles (Item 70, Appendix D)

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Block tracks (TM 5-5420-202-10)
Place MASTER BATTERY switch in OFF position (TM 5-5420-202-10)
Place transmission shift lever in neutral (N) (TM 5-5420-202-10)

Go on to Sheet 2

BRAKE MASTER CYLINDER REPLACEMENT (Sheet 2 of 9)

REMOVAL:

WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. To prevent personal injury, wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin eyes and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point for Type #1 Dry Cleaning Solvent is 100°F (38°C) and for Type #2 is 138°F (50°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

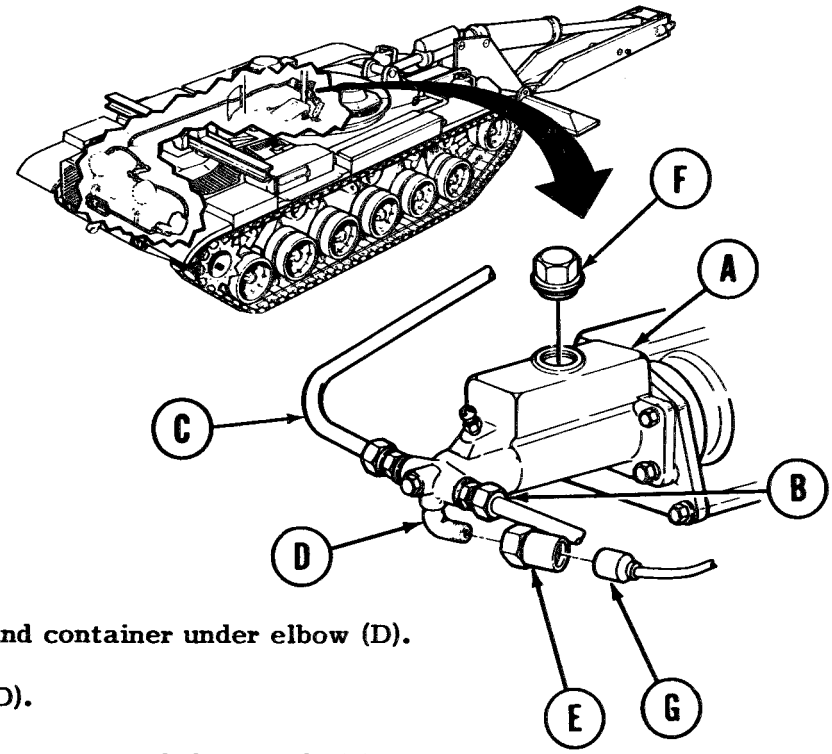
1. **Using dry cleaning solvent and rags, clean master cylinder (A), both tube assemblies (B) and (C), elbow (D), and stoplight switch (E).**

NOTE

Care must be taken to prevent dirt from entering brake system.

2. Using 1-1/8 inch socket, remove filler cap (F).

3. Using fingers, disconnect electrical connector (G) from stoplight switch (E].



4. Using both hands, place funnel **and container under elbow (D).**

5. Using pipe wrench, hold elbow **(D).**

6. Using 1 inch deep style socket, remove stoplight switch (E).

7. Drain all brake fluid from master cylinder into container through elbow (D).

Go on to Sheet 3

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BRAKE MASTER CYLINDER REPLACEMENT (Sheet 3 of 9)

8. Using pipe wrench, remove elbow (D).

9. Using 13/16 inch wrench, hold reducer (H).

10. Using 11/16 inch wrench, remove line tube nut (J).

11. Using 13/16 inch wrench, remove reduc (H) and gasket (K).

12. Throw gasket (K) away.

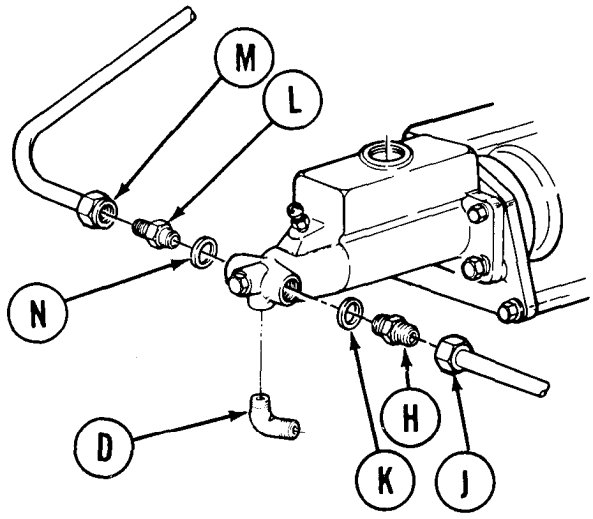
13. Using 3/4 inch wrench, hold reducer (L).

14. Using 9/16 inch wrench, remove line tube nut (M).

15. Using 3/4 inch wrench, remove reducer (L) and gasket (N).

16. Throw gasket (N) away.

17. Using tape or rags, cover exposed brake tube ends to keep dirt out of system.



Go on to Sheet 4

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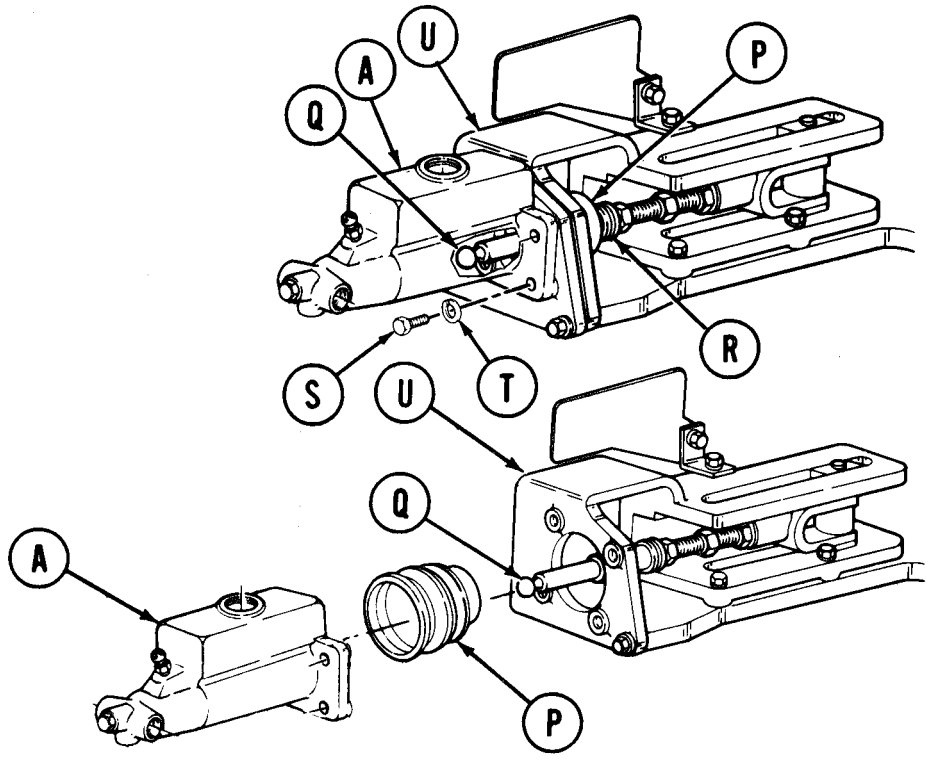
BRAKE MASTER CYLINDER REPLACEMENT (Sheet 4 of 9)

18. Using hands and flat-tip screwdriver, pull boot (P) free of push rod (Q) at groove (R).

19. Using 9/16 inch wrench, remove four screws (S) and lockwashers (T) holding master cylinder (A) to bracket (U).

CAUTION

When removing master cylinder (A) from bracket (U), caution must be taken to prevent damage to push rod (Q).



20. Using hands, remove master cylinder (A) from bracket (U).

21. Using hands, remove boot (P) from lip at rear of master cylinder (A). Throw boot (P) away.

Go on to Sheet 5

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BRAKE MASTER CYLINDER REPLACEMENT (Sheet 5 of 9)

CLEANING AND INSPECTION:

1. Inspect stoplight switch (A). Replace if unserviceable.

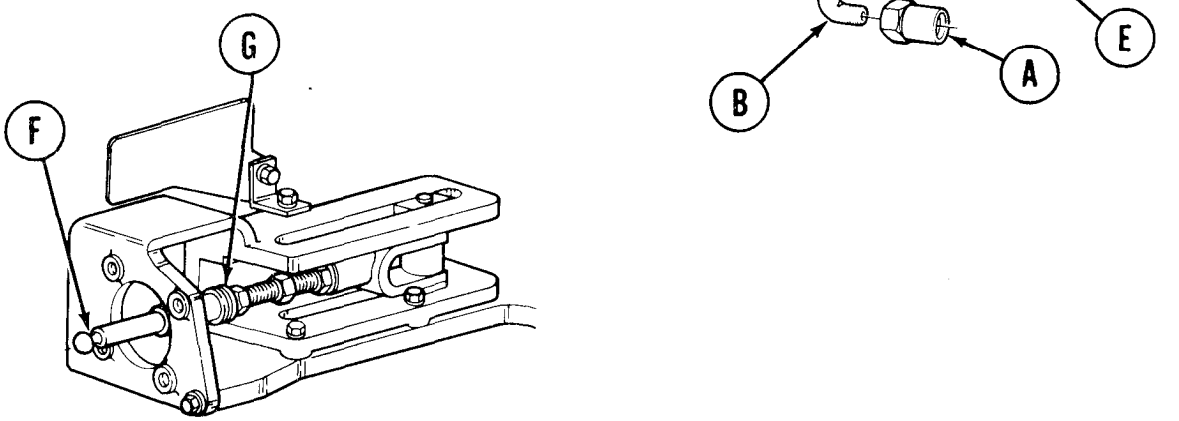
WARNING

Cleaning agent specified is flammable. Use only in well ventilated areas. Keep away from flames, sparks, or heat. Do not smoke while using. Prevent contact with eyes, mouth, and/or skin. Wear rubber gloves when perform ing cleaning procedures.

2. Using clean rags and dry cleaning solvent, clean all parts which have been removed.

3. Inspect elbow (B), brake tube assembly (C), tube reducers (D), line tube nuts (E), and push rod (F) for damage, bad threads, cracks, or excessive wear. Replace if unserviceable.

4. Using flat-tip screwdriver, clean groove (G) on push rod (F). Remove all old adhesive.



Go on to Sheet 6

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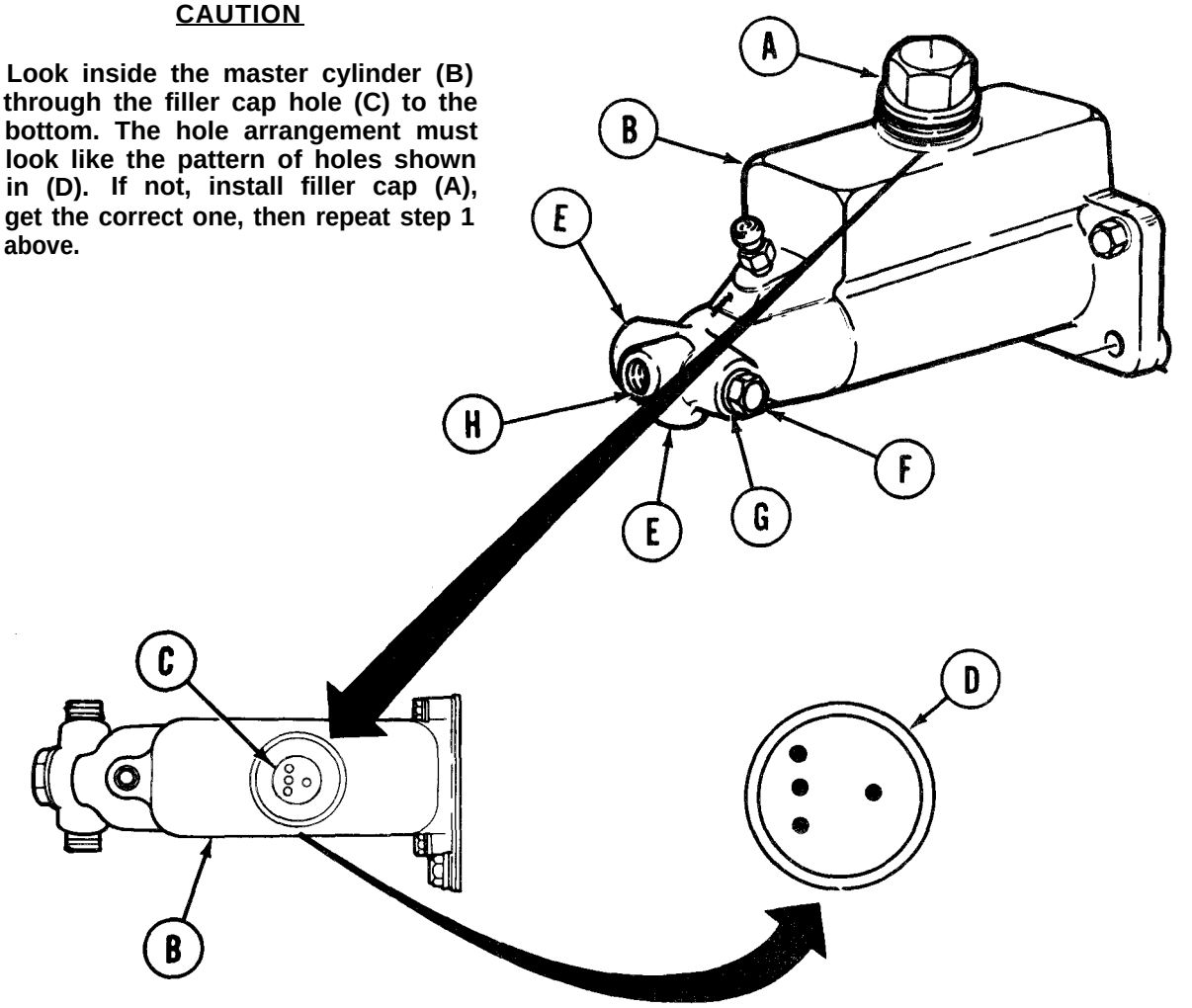
BRAKE MASTER CYLINDER REPLACEMENT (Sheet 6 of 9)

INSTALLATION:

1. Using 1-1/8 inch socket, remove filler cap (A) from master cylinder (B).

CAUTION

Look inside the master cylinder (B) through the filler cap hole (C) to the bottom. The hole arrangement must look like the pattern of holes shown in (D). If not, install filler cap (A), get the correct one, then repeat step 1 above.



2. Get master cylinder ready for installation by removing all packing material, pipe plugs, or plastic caps from ports (E) if installed. Clean as needed.

3. Using fingers, install filler cap (A) to master cylinder (B) finger tight.

4. Using 3/4 inch wrench, remove drain plug (F) and gasket (G) and relocate and install at forward port (H).

Go on to Sheet 7

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BRAKE MASTER CYLINDER REPLACEMENT (Sheet 7 0f 9)

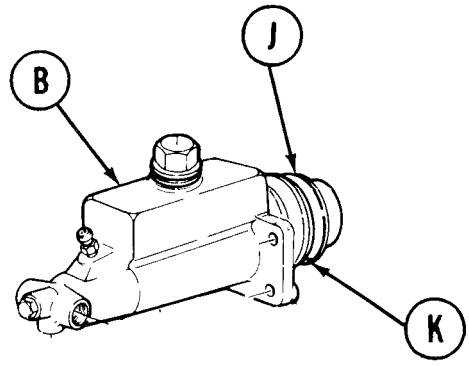
5. Using hands, install boot (J) on lip at rear of master cylinder (B). The hole (K) in the boot must be in the bottom position to permit drainage.

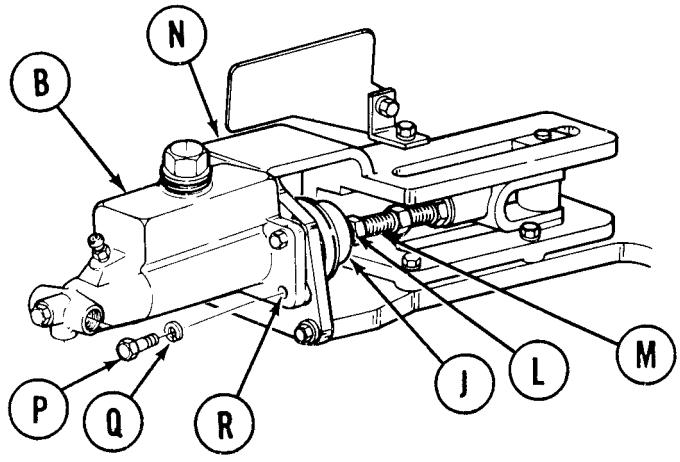
6. Using fingers, apply adhesive to groove (L) on push rod (M).

7. Using hands, position master cylinder (B) to bracket (N) with holes alined.

8. Using 9/16 inch wrench, install four screws (P) with lockwashers (Q) through master cylinder holes (R) to bracket (N).

9. Using hands, install end of boot (J) into groove (L) on push rod (M).





Go on to Sheet 8

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BRAKE MASTER CYLINDER REPLACEMENT (Sheet 8 of 9)

10. Using fingers, install gasket (S) to tube reducer (T) and screw tube reducer (T) into rear port (U) of master cylinder (B).

11. Using 3/4 inch wrench, tighten tube reducer (T).

12. Remove tape or rags from brake tube ends.

13. Using 9/16 inch wrench, install line tube nut (V) and tube assembly (W) to tube reducer (T).

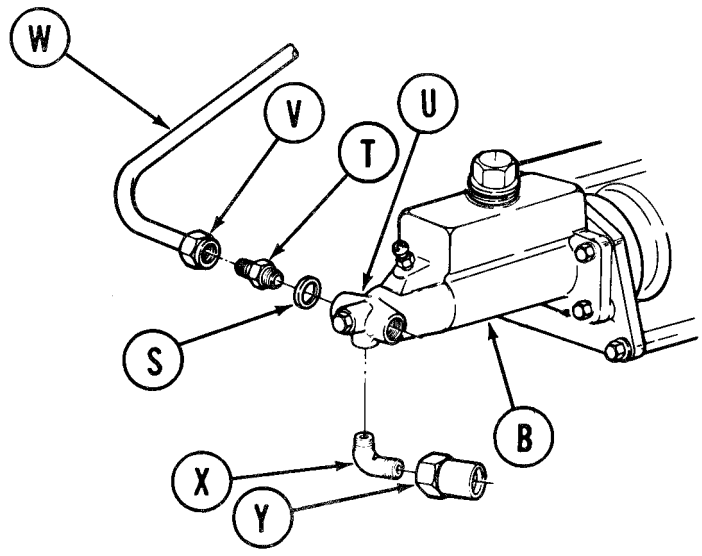
14. Using pipe wrench, install elbow (X) to master cylinder (B). Position elbow as shown.

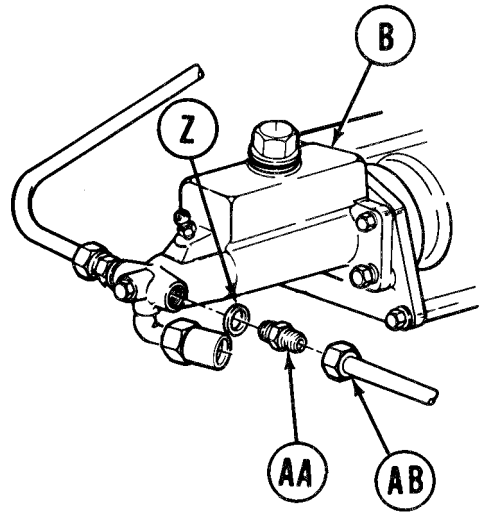
15. Using pipe wrench on elbow (X) and 1 inch deep style socket on stoplight switch (Y), install stoplight switch (Y).

16. Using fingers, install gasket (Z) to tube reducer (AA).

17. Using 13/16 inch wrench, install tube reducer (AA) to master cylinder (B).

18. Using 11/16 inch wrench, install line tube nut (AB) to tube reducer (AA).





Go on to Sheet 9

TA249399

BRAKE MASTER CYLINDER REPLACEMENT (Sheet 9 of 9)

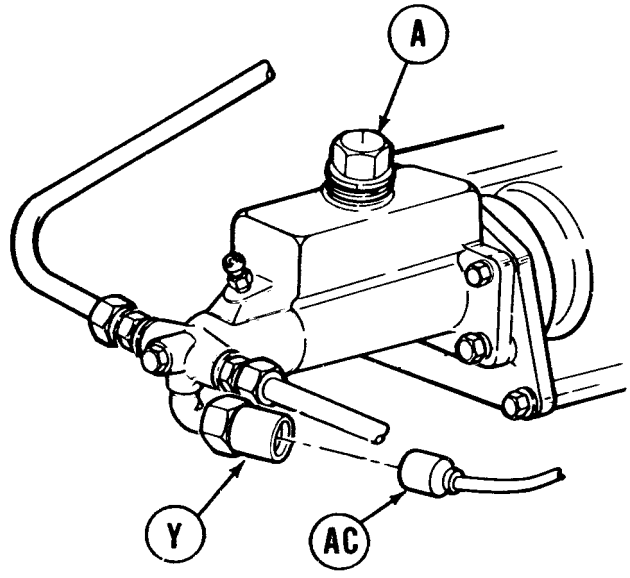
19. Fill master cylinder (TM 5-5420-202-10).

20. Using 1-1/8 inch socket, tighten filler cap (A).

21. Using fingers, connect electrical connector (AC) to stoplight switch (Y).

22. Perform brake bleeding procedure (page 13-86).

23. Place shift lever at P (park) and remove blocks from tracks (TM 5-5420-202-10).



End of Task

TA249400

BRAKE FOOT PEDAL LEVER MOUNTING BRACKET REPLACEMENT (Sheet 1 of 6)

PROCEDURE INDEX

TOOLS: 8 in. alining punch
Slip joint pliers, straight nose
Punch, 1/8 in. pt.
Hammer
3/8 in. combination box and open end wrench
9/16 in. combination box and open end wrench
Vise jaw caps, brass
Vise

SUPPLIES: Rags (Item 65, Appendix D)
Dry cleaning solvent (Item 55, Appendix D)
Lockwashers (3 required)
Spring pin
Gloves (Item 69, Appendix D)
Goggles (Item 70, Appendix D)

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Block tracks to prevent vehicle movement (TM 5-5420-202-10)
Place shift lever in N (neutral) position (TM 5-5420-202-10)

REMOVAL:

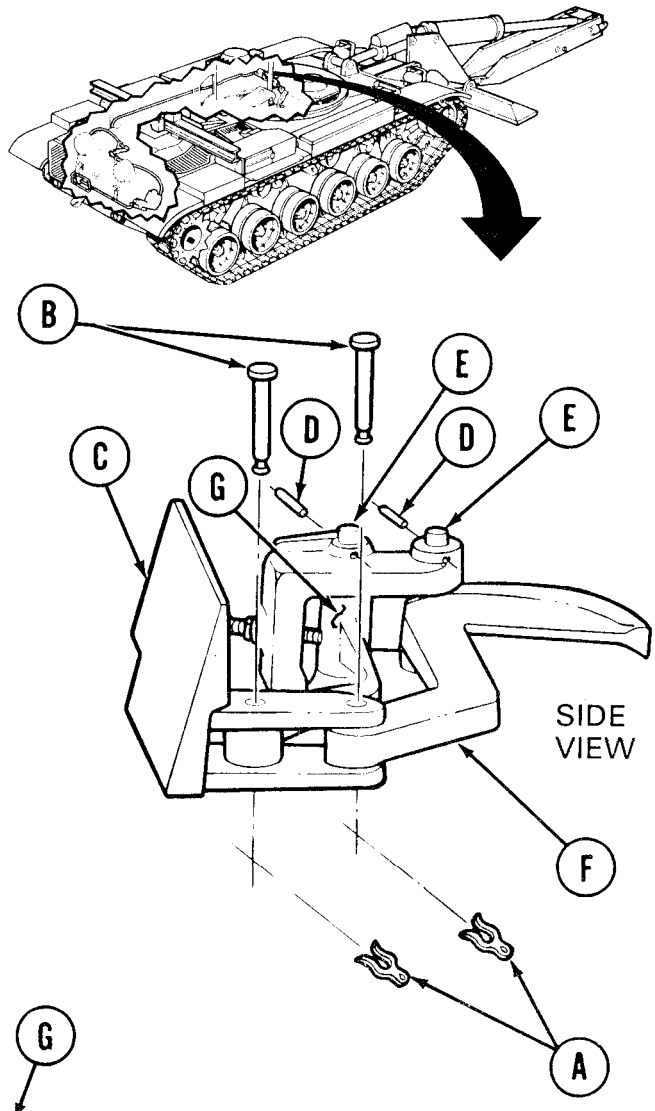
NOTE

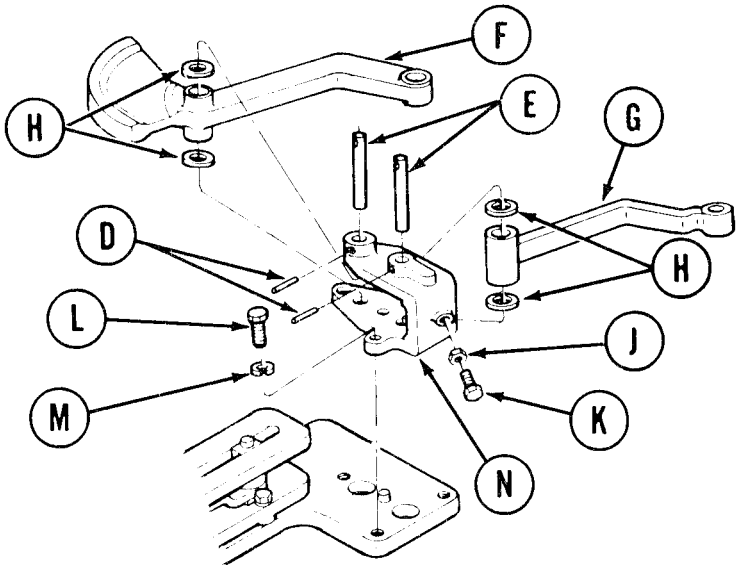
Clean all parts and general area before removal (Appendix C).

Go on to Sheet 2

BRAKE FOOT PEDAL LEVER MOUNTING BRACKET REPLACEMENT (Sheet 2 of 6)

1. Using pliers, remove two lockpins (A) and pins (B). Remove brake pedal (C).
2. Using hammer and punch, remove two spring pins (D).
3. Using pliers, remove pins (E).
4. Remove levers (F) and (G) and four washers (H).
5. Using 9/16 inch wrench, loosen jamnut (J). Use 3/8 inch wrench to remove setscrew (K). Remove jamnut (J).
6. Using 9/16 inch wrench, remove three screws (L) and lockwashers (M).
7. Remove pedal bracket (N) by lifting up.





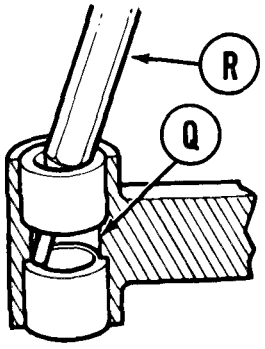
Go on to Sheet 3

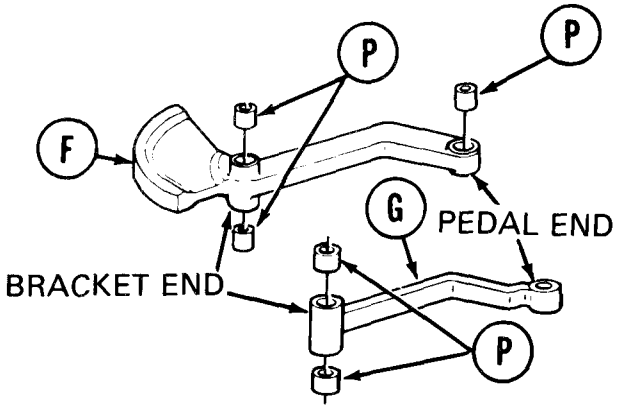
TA249402

BRAKE FOOT PEDAL LEVER MOUNTING BRACKET REPLACEMENT (Sheet 3 of 6)

CAUTION

Sleeve bearings (P) installed in levers (F) and (G) at the bracket end are resting against shoulders (Q). They must be removed from the inside as shown.





8. Place lever (F) in vise. Using hammer and alining punch (R), remove bottom sleeve bearing (P) from inside as shown. Turn lever (F) over and repeat steps to remove other sleeve bearing (P) at bracket end. Remove sleeve bearing (P) at pedal end.

9. Place lever (G) in vise. Using hammer and alining punch, remove bottom sleeve bearing (P). Turn lever over and remove remaining sleeve bearing (P).

CLEANING AND INSPECTION:

WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. To prevent personal injury, wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point for Type #1 Dry Cleaning Solvent is 100°F (38°C) and for Type #2 is 138°F (50°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyea with water and get medical aid immediately.

1. Using dry cleaning solvent and rags, clean and dry all parts.

2. Inspect all parts. Replace if unserviceable.

Go on to Sheet 4

TA249403

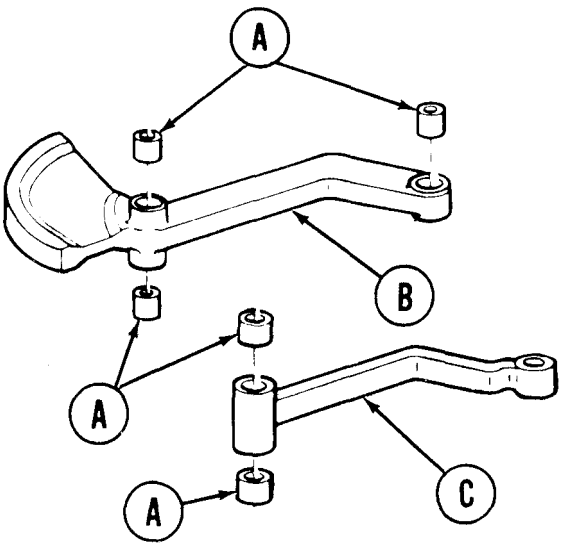
BRAKE FOOT PEDAL LEVER MOUNTING BRACKET REPLACEMENT (Sheet 4 of 6)

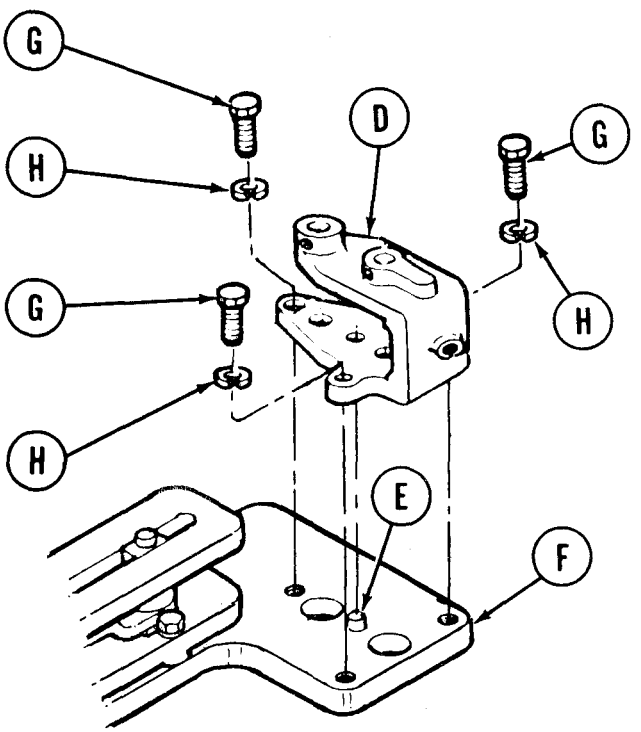
CAUTION

Place caps on vise jaws before installing sleeve bearings in levers (B) and (C).

INSTALLATION:

1. Using vise, carefully press five sleeve bearings (A) into levers (B) and (C).
2. Using hands, install bracket (D) on alining pin (E) on mount assembly (F).
3. Using 9/16 inch wrench, install three screws (G) and lockwashers (H).





MOUNT ASSEMBLY
VIEW LOOKING DOWN

Go on to Sheet 5

TA249404

BRAKE FOOT PEDAL LEVER MOUNTING BRACKET REPLACEMENT (Sheet 5 of 6)

4. Place lever (C) and two washers (J) into bracket (D) alining holes with bracket hole (K).

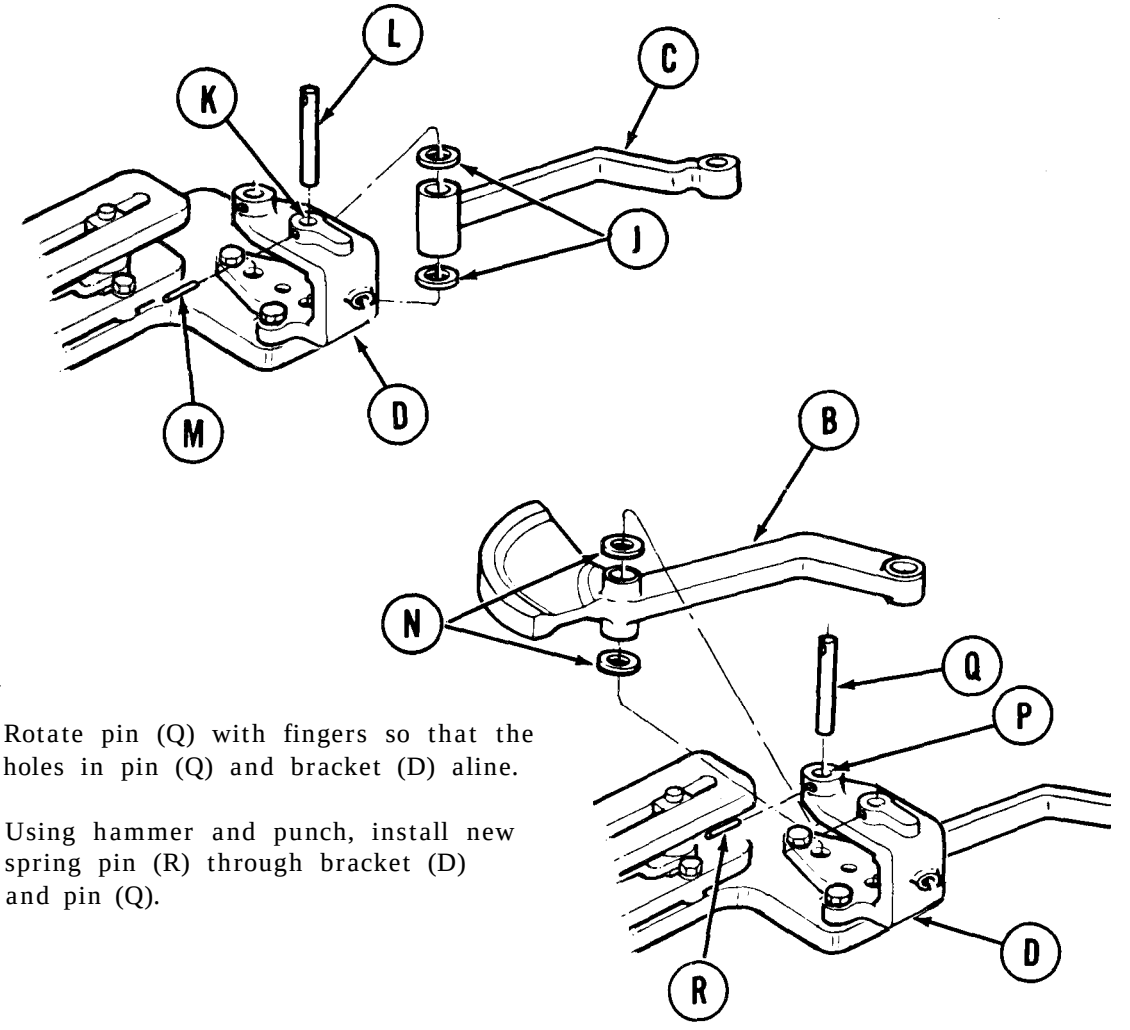
5. Install pin (L) through hole (K) securing washers and lever.

6. Rotate pin (L) with fingers so that the holes in pin (L) and bracket (D) aline.

7. Using hammer and punch, install new spring pin (M) through bracket (D) and pin (L).

8. Place lever (B) and two washers (N) into bracket (D) alining holes with bracket hole (P).

9. Install pin (Q) through hole (P) securing washers and lever.



10. Rotate pin (Q) with fingers so that the holes in pin (Q) and bracket (D) aline.

11. Using hammer and punch, install new spring pin (R) through bracket (D) and pin (Q).

Go on to Sheet 6

TA249405

BRAKE FOOT PEDAL LEVER MOUNTING BRACKET REPLACEMENT (Sheet 6 of 6)

12. Install jamnut (S) on setscrew (T).

13. Install setscrew (T) to bracket (D) until it makes contact with lever (C).

14. Using 3/8 inch wrench, tighten jamnut (S).

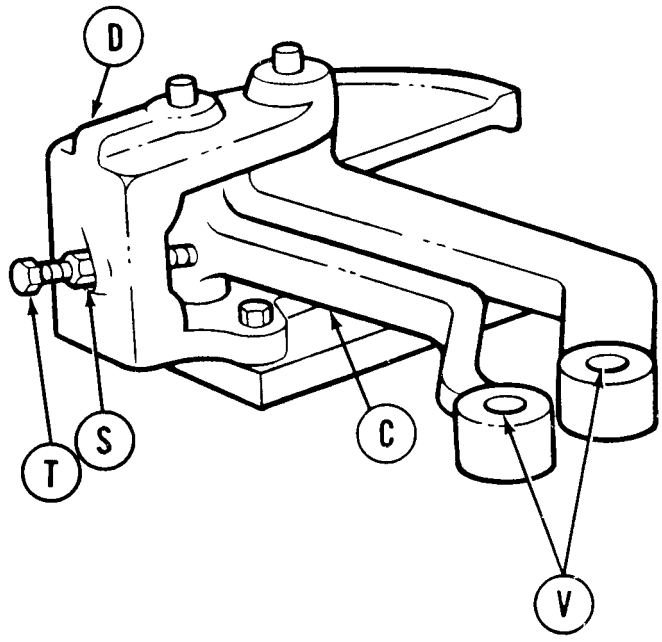
15. Aline holes in brake pedal (U) on holes (V) and install two pins (W).

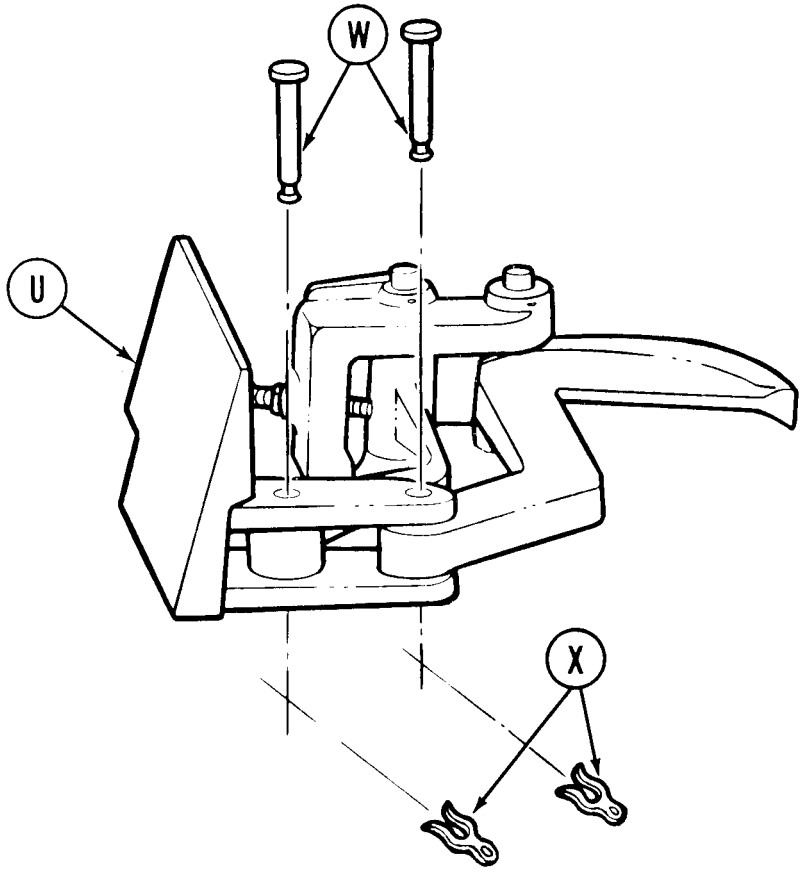
16. Using pliers, install two lock pins (X).

17. Place transmission shift lever in P (park) (TM 5-5420-202-10).

18. Remove blocks from tracks (TM 5-5420-202-10).

19. Perform brake pedal adjustment (page 13-17).





End of Task

TA249406

BRAKE PEDAL ADJUSTMENT (Sheet 1 of 2)

TOOLS: Pin, locating (1/2 in. dia., 7-1/2 in. long)
11/16 in. combination box and open end wrenches (two)
9/16 in. combination box and open end wrench
3/8 in. combination box and open end wrench
5/8 in. combination box and open end wrench
11/16 in. crow foot attachment with 1/2 in. sq. drive
Adapter socket, 3/8 in. to 1/2 in. sq. drive
Torque wrench with 1/2 in. sq. drive (0-175 lb - ft) (0-237 N.m)

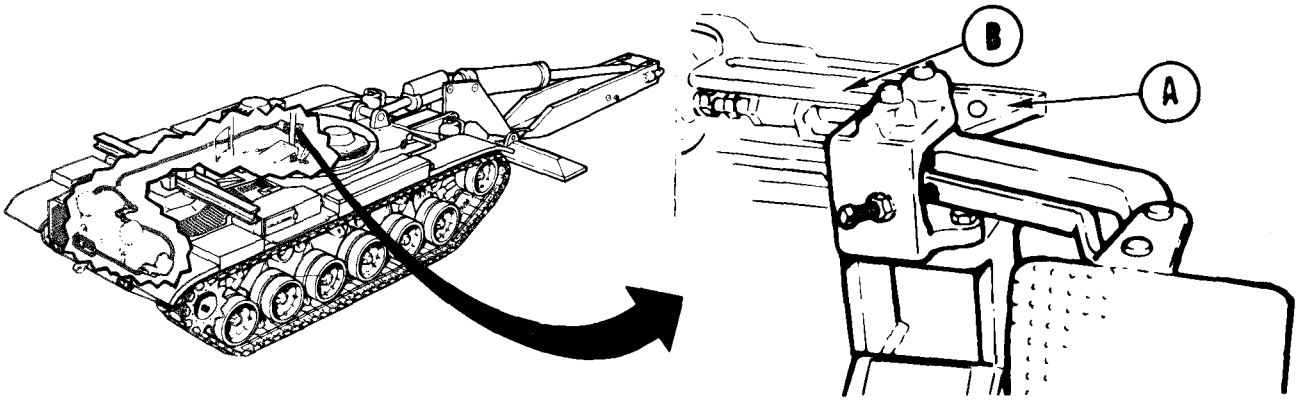
REFERENCE: TM 5-5420-202-10

SUPPLIES: Locking compound (Item 15, Appendix D)

PRELIMINARY PROCEDURES: Block vehicle tracks (TM 5-5420-202-10)
Set transmission shift lever to (N) neutral position (TM 5-5420-202-10)

BRAKE PEDAL ADJUSTMENT:

1. Depress brake pedal until hole in cam (A) is alined with hole in master cylinder bracket (B). Insert locating pin through alinement holes in cam (A) and bracket (B).



Go on to Sheet 2

TA249407

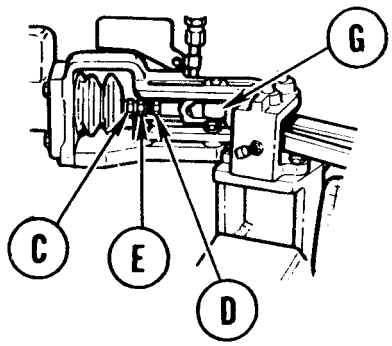
BRAKE PEDAL ADJUSTMENT (Sheet 2 of 2)

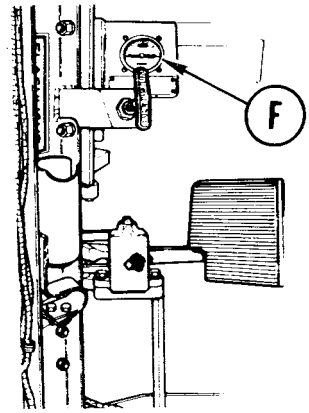
2. Using two 11/16 inch wrenches loosen jam nuts (C) and (D), using 5/8 inch wrench adjust tie rod (E) for a reading of 175 to 250 psi on pressure gage (F). Tighten jamnuts (C) and (D).

3. Remove locating pin installed in step 1.

4. Depress brake pedal until brake pedal cam face just contacts roller surface (G).

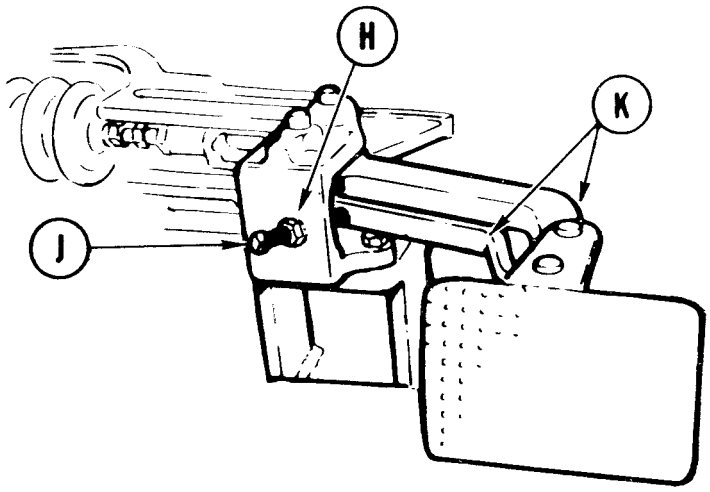
5. Check pressure gage (F) for 0 psi reading.





6. Using 9/16 inch wrench, loosen jamnut (H).

7. Using 3/8 inch wrench, adjust screw (J) until screw (J) just makes contact with brake lever (K). Tighten jamnut (H).



8. Set transmission shift lever to "P" park position (TM 5-5420-202-10).

9. Remove blocks from vehicle tracks (TM 5-5420-202-10).

End of Task

TA249408

MASTER BRAKE CYLINDER MOUNTING BRACKET, TIE ROD, PUSH ROD, CLEVIS, AND BOOT REPLACEMENT (Sheet 1 of 9)

PROCEDURE INDEX

TOOLS: Vise
Vise jaw caps
Hammer
Punch, 1/8 in. pt. dia.
Pliers, long nose
Ratchet with 1/2 in. drive
7/16 in. socket with 1/2 in. drive
7/16 in. combination box and open end wrench
5/8 in. combination box and open end wrench
9/16 in. combination box and open end wrench
11/16 in. combination box and open end wrench

SUPPLIES: Two web straps or ropes, 3 feet long
Steel wool (Item 56, Appendix D)
Adhesive, type II (Item 4, Appendix D)
Dry cleaning solvent (Item 55, Appendix D)
Rags (Item 65, Appendix D)
Lockwashers
Gloves (Item 69, Appendix D)
Goggles (Item 70, Appendix D)

REFERENCE: TM 5-5420-202-10

Go on to Sheet 2

MASTER BRAKE CYLINDER MOUNTING BRACKET, TIE ROD, PUSH ROD, CLEVIS, AND BOOT REPLACEMENT (Sheet 2 of 9)

PRELIMINARY PROCEDURES:

Block tracks to prevent vehicle movement (TM 5-5420-202-10)
Place transmission shift lever in N (neutral) position (TM 5-5420-202-10)
Remove brake foot pedal lever mounting bracket assembly (page 13-11)

WARNING

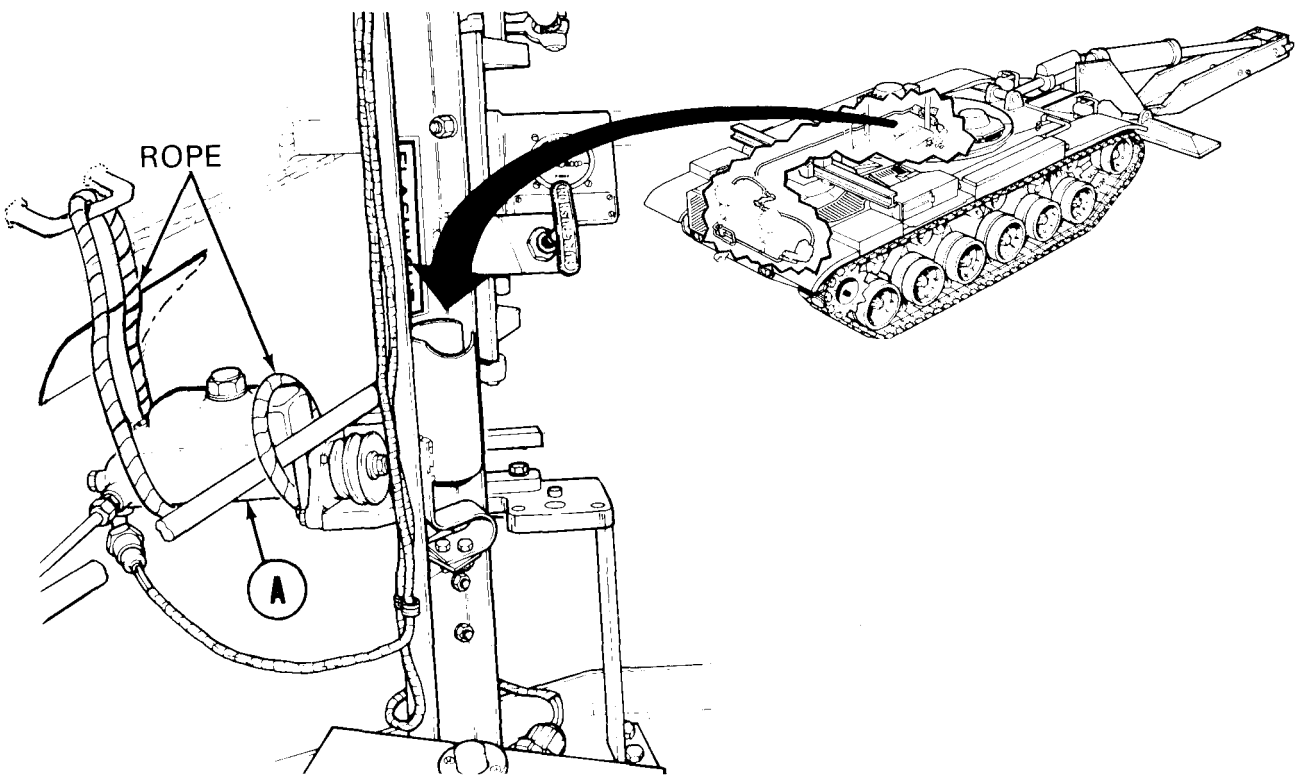
Cleaning agent specified is flammable. Use only in well ventilated areas. Keep away from flames, sparks, or heat. Do not smoke while using. Prevent contact with eyes, mouth, and/or skin. Wear rubber gloves when performing cleaning procedures.

NOTE

Clean all parts and general area prior to disassembly with dry cleaning solvent.

REMOVAL:

1. Using web strapping or rope, secure master cylinder (A) to prevent damage when bracket is removed.

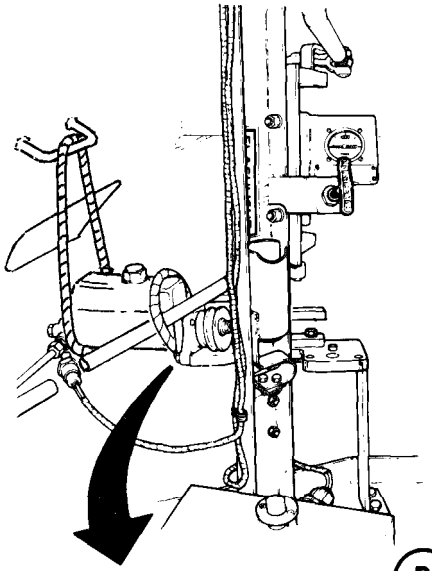


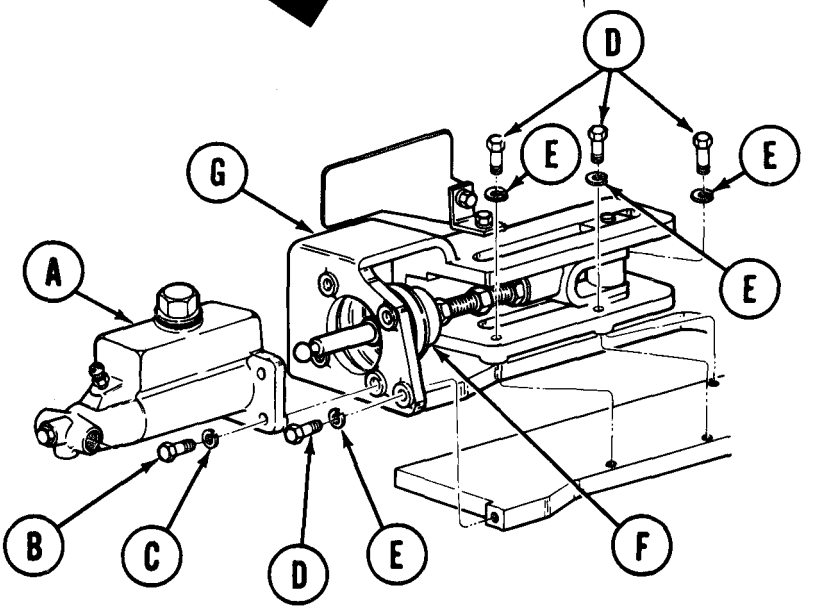
Go on to Sheet 3

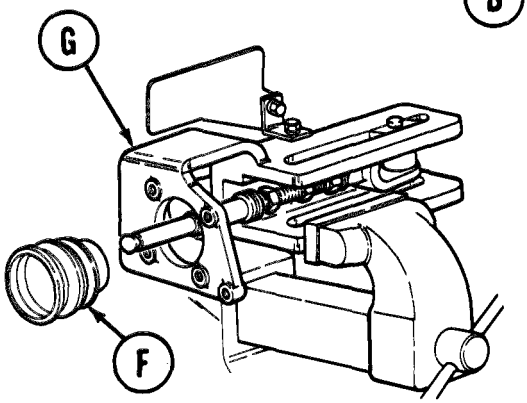
TA249410

MASTER BRAKE CYLINDER MOUNTING BRACKET, TIE ROD, PUSH ROD, CLEVIS, AND BOOT REPLACEMENT (Sheet 3 of 9)

2. Using 9/16 inch wrench, remove four screws (B) and lockwashers (C).
3. Using 9/16 inch wrench, remove four screws (D) and lockwashers (E).
4. Pull boot (F) loose from rear of master cylinder (A).
5. Remove bracket (G) by lifting up and pulling gently to the right.
6. Using vise with copper caps on vise jaws, place bracket (G) in vise.
7. Remove and dispose of boot (F).







Go on to Sheet 4

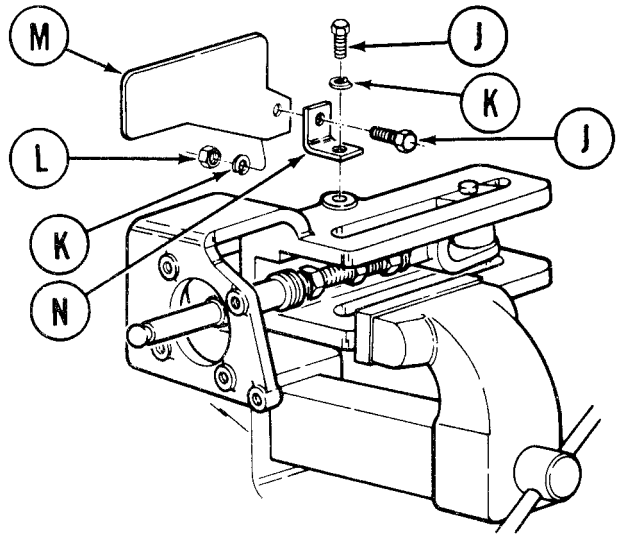
TA249411

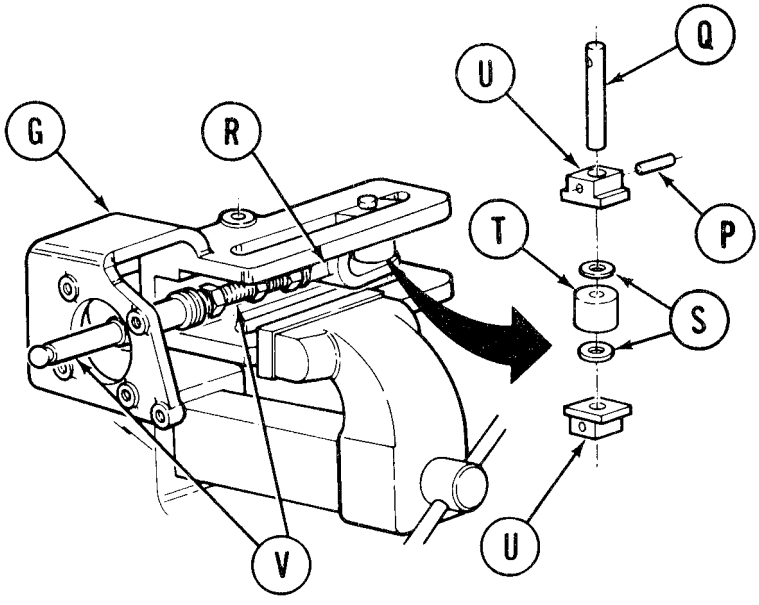
MASTER BRAKE CYLINDER MOUNTING BRACKET, TIE ROD, PUSH ROD, CLEVIS, AND BOOT REPLACEMENT (Sheet 4 of 9)

8. Using 7/16 inch socket and 7/16 inch wrench, remove two screws (J), lockwashers (K), nut (L), instruction plate (M), and angle bracket (N).

9. Using hammer and punch, drive pin (F) out.

10. Using pliers, pull pin (Q) out.





11. Using fingers, move clevis (R) to the left. Remove two washers (S), roller assembly (T), and two bearings (U).

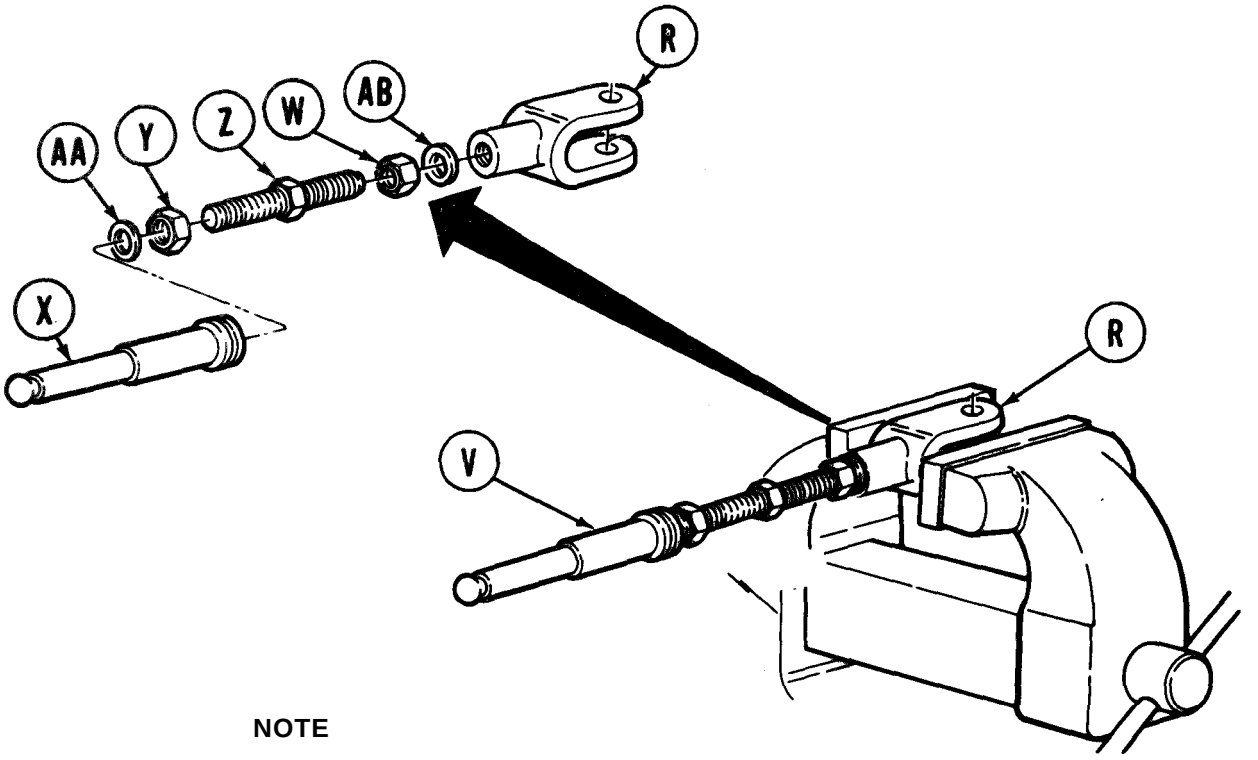
12. Remove push rod, tie rod, and clevis assembly (V) from bracket (G). Remove bracket (G) from vise.

Go on to Sheet 5

TA249412

MASTER BRAKE CYLINDER MOUNTING BRACKET, TIE ROD, PUSH ROD, CLEVIS, AND BOOT REPLACEMENT (Sheet 5 of 9)

13. Place push rod, tie rod, and clevis assembly (V) in the vise with the vise clamped to the clevis (R).



NOTE

Clevis (R) and nut (W) have left hand threads. Push rod (X) and nut (Y) have right hand threads.

14. Using 5/8 inch wrench to hold tie rod (Z), use 11/16 inch wrench to loosen nuts (Y) and (w).

15. Using 5/8 inch wrench, remove push rod (X). If washer (AA) is present, dispose of it.

16. Using 5/8 inch wrench, remove tie rod (Z). If washer (AB) is present, dispose of it. Remove nuts (W) and (Y).

17. Remove clevis (R) from vise.

Go on to Sheet 6

TA249413

MASTER BRAKE CYLINDER MOUNTING BRACKET-TIE ROD, PUSH ROD, CLEVIS, AND BOOT REPLACEMENT (Sheet 6 of 9)

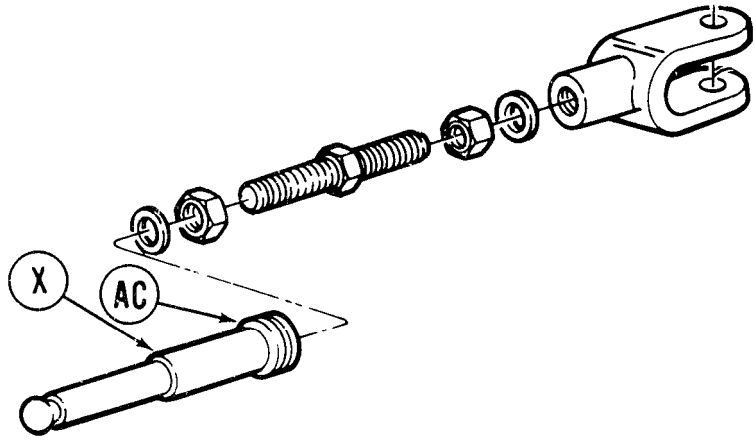
CLEANING AND INSPECTION:

WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. To prevent personal injury, wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point for Type #1 Dry Cleaning Solvent is 100°F (38°C) and for Type #2 is 138°F (50°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

1. Using dry cleaning solvlent and rags, clean and dry all parts.

2. Using steel wool, remove remaining adhesive from groove (AC) on push rod (X).



3. Inspect all parts for damage or excessive wear. Replace if unserviceable.

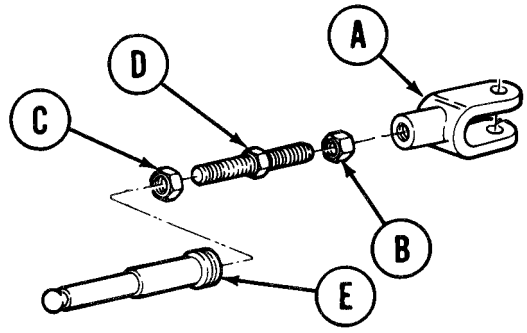
Go on to Sheet 7

TA249414

MASTER BRAKE CYLINDER MOUNTING BRACKET, TIE ROD, PUSH ROD, CLEVIS, AND BOOT REPLACEMENT (Sheet 7 of 9)

INSTALLATION:

1. Using vise with copper caps on vise jaws, place clevis (A) in vise.



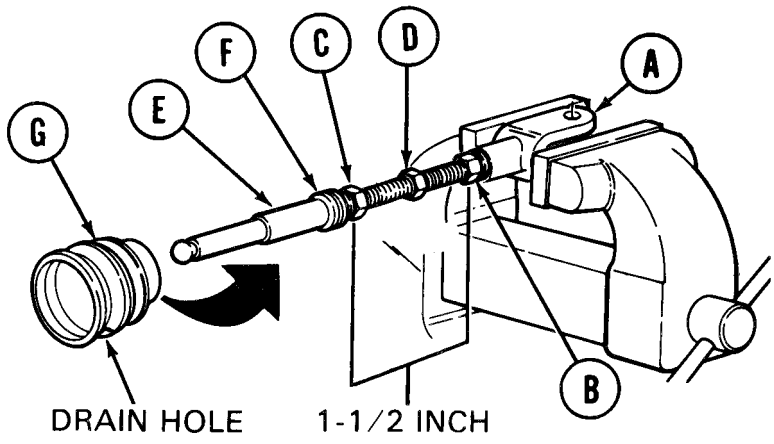
NOTE

Clevis (A) and nut (B) have left hand threads. Nut (C) and push rod (E) have right hand threads.

2. Using 11/16 inch wrench, install nuts (B) and (C) on tie rod (D) about 1-1/2 inches apart as shown.

NOTE

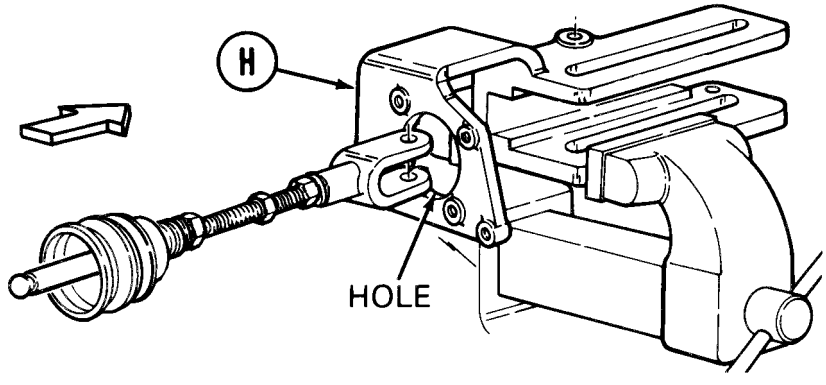
Nuts (B) and (C) will be tightened during adjustment procedures.



3. Using 5/8 inch wrench, assemble tie rod (D), push rod (E), and clevis (A).

4. Apply adhesive to groove (F) on push rod (E). When adhesive becomes tacky to the touch, install boot (G) with the drain hole in the lowest position.

5. Remove clevis (A) and assembled parts (B), (C), (D), (E), and (G), from vise. Race bracket (H) in vise. Install clevis (A) and assembled parts through hole in bracket as shown.



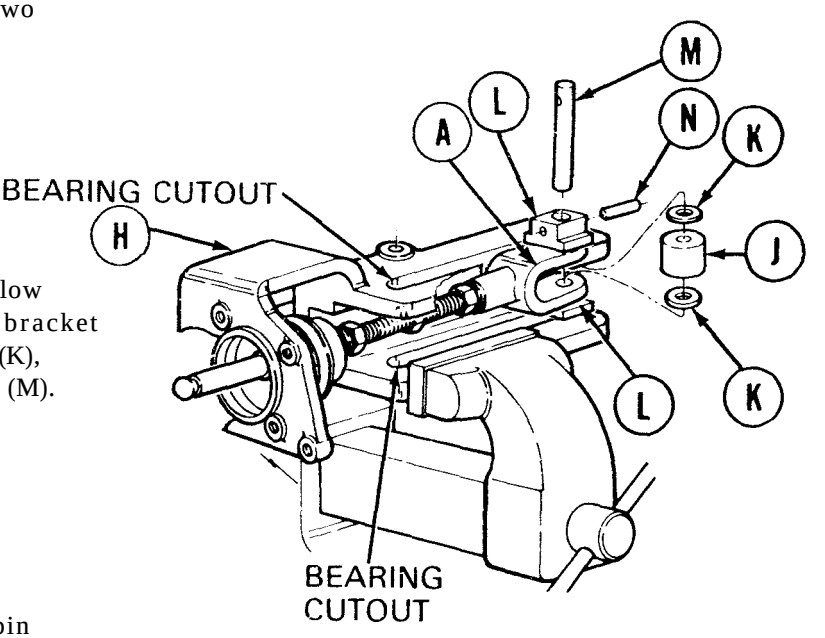
Go on to Sheet 8

TA249415

MASTER BRAKE CYLINDER MOUNTING BRACKET, TIE ROD, PUSH ROD, CLEVIS, AND BOOT REPLACEMENT (Sheet 8 of 9)

6. Position roller assembly (J) and two washers (K) into clevis (A).

7. Position bearings (L) above and below clevis (A) into bearing cutouts on bracket (H). Aline holes in parts (L), (A), (K), (J), (K), (A), and (L) and insert pin (M).

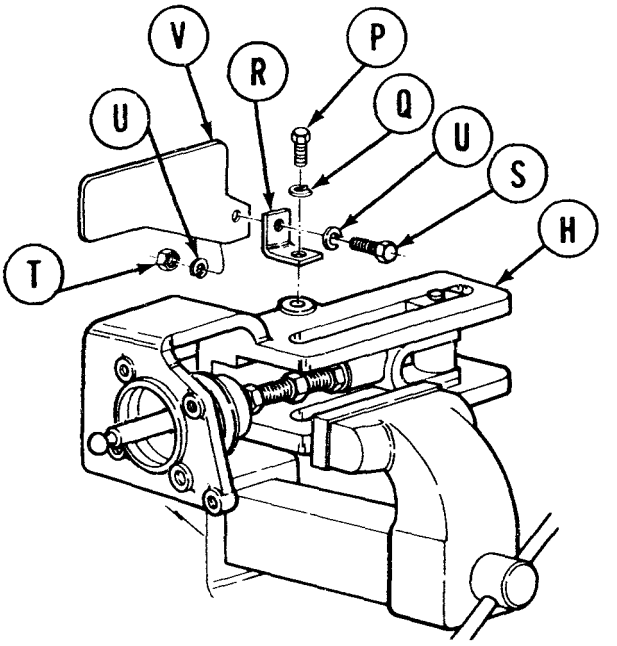


8. Using hammer and punch, install pin (N) into bearing (L).

9. Using 7/16 inch socket, install screw (P), lockwasher (Q), and angle bracket (R) to bracket assembly (H).

10. Using 7/16 inch socket and 7/16 inch wrench, install screw (S), nut (T), lockwashers (U), and instruction plate (V) to angle bracket (R).

11. Remove assembled bracket (H) from vise.



Go on to Sheet 9

TA249416

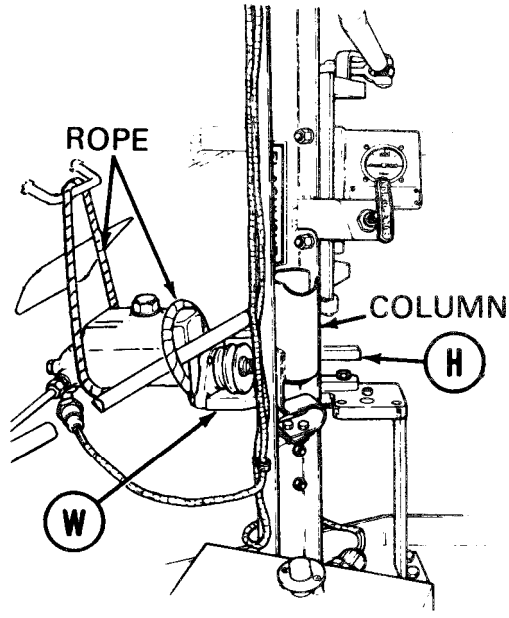
MASTER BRAKE CYLINDER MOUNTING BRACKET, TIE ROD, PUSH ROD, CLEVIS, AND BOOT REPLACEMENT (Sheet 9 of 9)

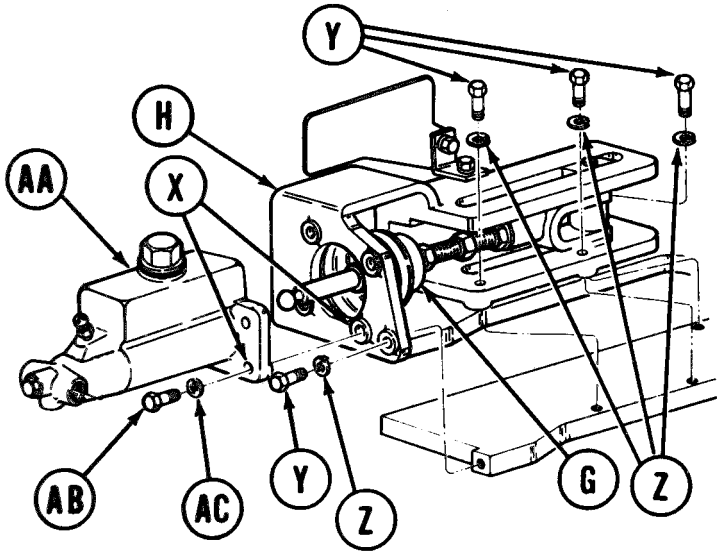
12. Place assembled bracket (H) behind the column on mount assembly (W), with holes (X) alined.

13. Using 9/16 inch wrench, install four screws (Y) and lockwashers (Z).

14. Using hands, install forward lip of boot (G) to rear lip on master cylinder (AA).

15. Using 9/16 inch wrench, install four screws (AB) and lockwashers (AC).





Remove web straps or ropes used to secure master cylinder.

17. Install brake foot pedal assembly (page 13-14).

18. Perform brake pedal adjustment (page 13-17).

19. Place shift lever in P (park) position and remove blocks from track (TM 5-5420-202-10).

End of Task

TA249417

MASTER CYLINDER AND PEDAL LEVER MOUNT ASSEMBLY REPLACEMENT (Sheet 1 of 3)

TOOLS: Ratchet with 1/2 in. drive
5 in. extension socket wrench, 1/2 in. sq drive
9/16 in. socket with 1/2 in. drive
9/16 in. combination box and open end wrench

SUPPLIES: Two web straps or ropes, 3 feet long
Dry cleaning solvent (Item 55, Appendix D)
Rags (Item 65, Appendix D)
Gloves (Item 69, Appendix D)
Goggles (Item 70, Appendix D)

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES:
Block tracks to prevent vehicle movement (TM 5-5420-202-10)
Place transmission shift lever in N (neutral) position (TM 5-5420-202-10)
Remove brake foot pedal lever mounting bracket assembly (page 13-11).
Remove master brake cylinder mounting bracket assembly (page 13-19).

NOTE

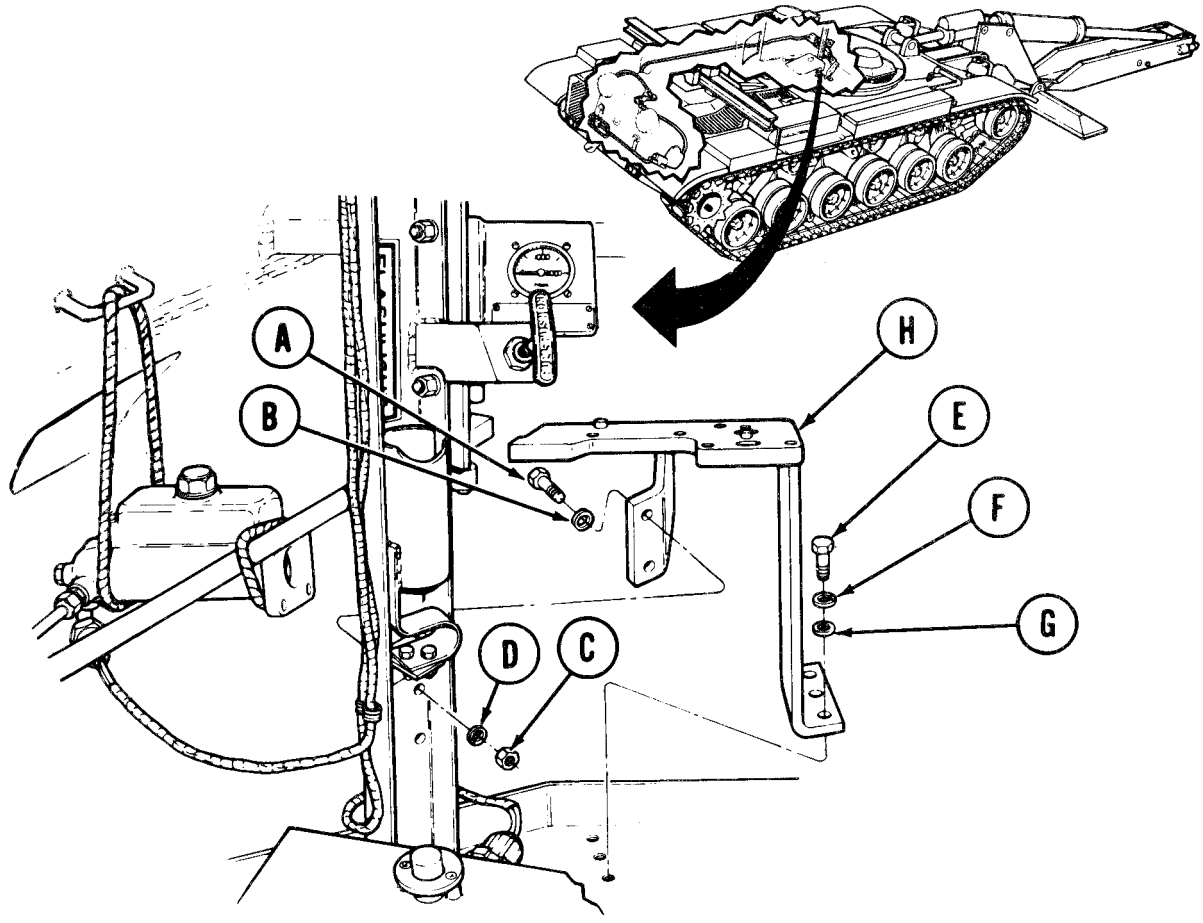
Clean all parts and general area prior to disassembly.

CAUTION

Using web strapping or rope, secure master cylinder to prevent damage when bracket is removed.

Go on to Sheet 2

MASTER CYLINDER AND PEDAL LEVER MOUNT ASSEMBLY REPLACEMENT (Sheet 2 of 3)



REMOVAL:

1. Use 9/16 inch wrench to hold two screws (A) and two washers (B).
2. Using socket and extension, remove two nuts (C) and lockwashers (D). Remove two screws (A) and washers (B).
3. Using socket and extension, remove three screws (E), lockwashers (F), and washers (G).

CLEANING AND INSPECTION:

WARNING

Cleaning agent specified is flammable. Use only in well ventilated areas. Keep away from flames, sparks, or heat. Do not smoke while using. Prevent contact with eyes, mouth, and/or skin. Wear rubber gloves when performing cleaning procedures.

1. Using drycleaning solvent and rags, clean and dry mount (H).

TA249418

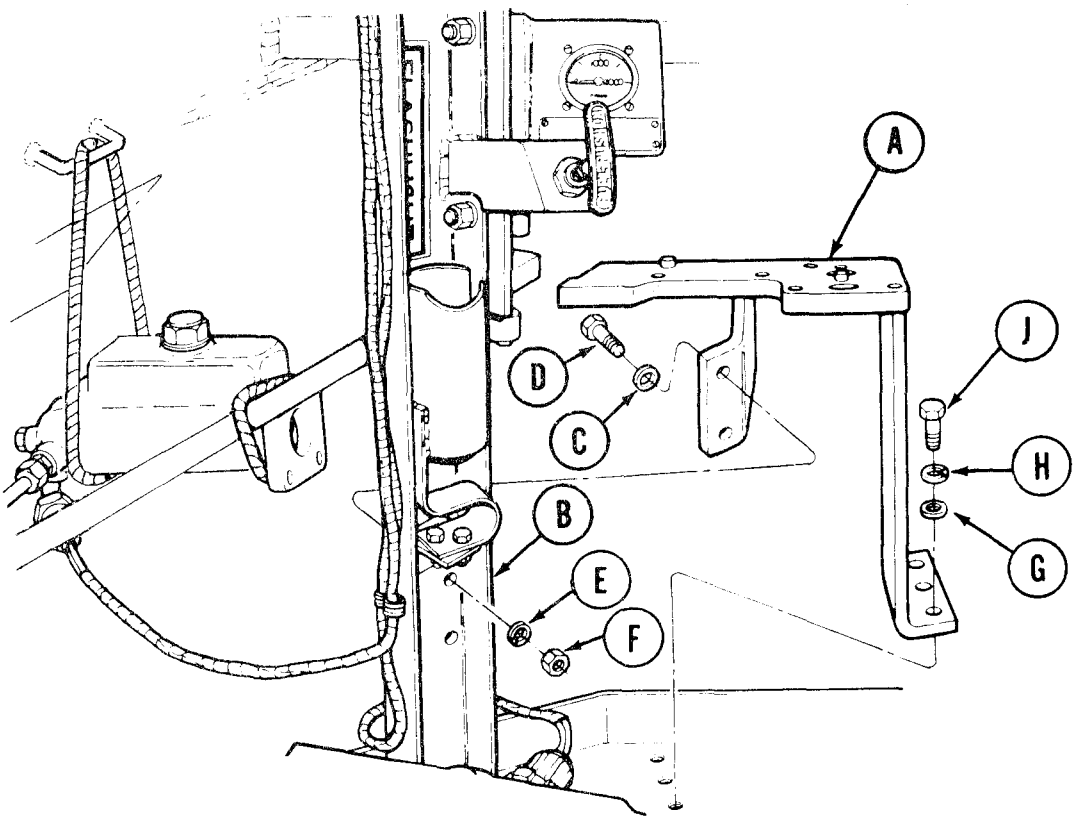
Go on to Sheet 3

MASTER CYLINDER AND PEDAL LEVER MOUNT ASSEMBLY REPLACEMENT (Sheet 3 of 3)

2. Inspect the mount (A) for cracks or broken alinement pins. Replace if unserviceable.

INSTALLATION:

1. Place mount (A) behind column (B) with holes alined.
2. Place two washers (C) on screws (D) and install through rear of mount (A).
3. Use 9/16 inch wrench to hold screws (D). Using socket and extension, install two lockwashers (E) and nuts (F).



4. Using socket and extension, install three washers (G), lockwashers (H), and screws (J).
5. Install master brake cylinder mounting bracket (page 13-25).
6. Remove web straps or rope securing master cylinder.
7. Install brake foot pedal assembly (page 13-14).
8. Place shift lever in P (park) position and remove blocks from tracks (TM 5-5420-202-10).

End of Task

TA249419

BRAKE SWITCH (STOPLIGHT) REPLACEMENT (Sheet 1 of 4)

PROCEDURE INDEX

TOOLS: Ratchet with 1/2 in. drive
1 in. socket (deep style) with 1/2 in. drive
1-1/8 in. socket with 1/2 in. drive
Funnel, 1 qt cap. with flexible spout
10 in. pipe wrench

SUPPLIES: Container, 1 qt. cap.
Rags (Item 65, Appendix D)
Dry cleaning solvent (Item 55, Appendix D)
11/16 in. plug
Brake fluid (Item 40, Appendix D)
Gloves (Item 69, Appendix D)
Goggles (Item 70, Appendix D)

PERSONNEL: Two

PRELIMINARY PROCEDURES: Block tracks to prevent vehicle movement (TM 5-5420-202-10)
Place MASTER BATTERY switch in OFF position (TM 5-5420-202-10)
Place transmission shift lever in neutral “N” (TM 5-5420-202-10)

Go on to Sheet 2

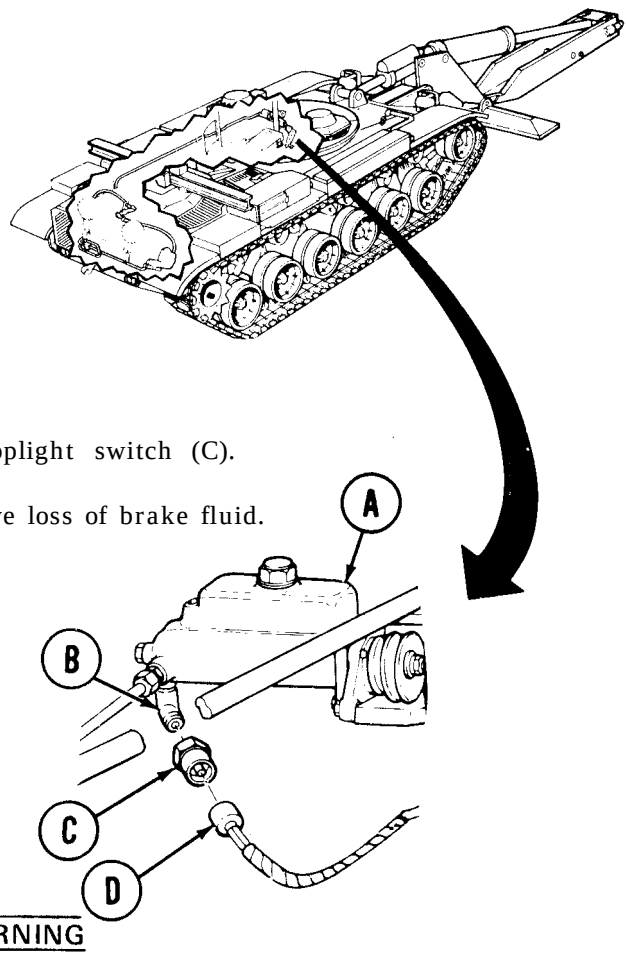
BRAKE SWITCH (STOPLIGHT) REPLACEMENT (Sheet 2 of 4)

REMOVAL:

WARNING

Cleaning agent specified is flammable. Use only in well ventilated areas. Keep away from flames, sparks, or heat. Do not smoke while using. Prevent contact with eyes, mouth, and/or skin. Wear rubber gloves when performing cleaning procedures.

1. Using drycleaning solvent and rags, clean master cylinder (A), elbow (B), stoplight switch (C), electrical connector (D), and general area.
2. Using hands, place funnel and container under elbow (B) to catch brake fluid.
3. Using fingers, disconnect electrical connector (D) from stoplight switch (C).
4. Using pipe wrench, hold elbow (B).
5. Using 1 inch deep style socket, remove stoplight switch (C).
6. Using plug, plug elbow (B) to prevent excessive loss of brake fluid.



CLEANING AND INSPECTION:

WARNING

Cleaning agent specified is flammable. Use only in well ventilated areas. Keep away from flames, sparks, or heat, Do not smoke while using. Prevent contact with eyes, mouth, and/or skin. Wear rubber gloves when performing cleaning procedures.

1. Using rags and drycleaning solvent, clean all parts before installation.
2. Inspect elbow (B) for worn threads. Replace if unserviceable.
3. Inspect electrical connector D) and lead in wires for cracks and worn spots. Replace if unserviceable.

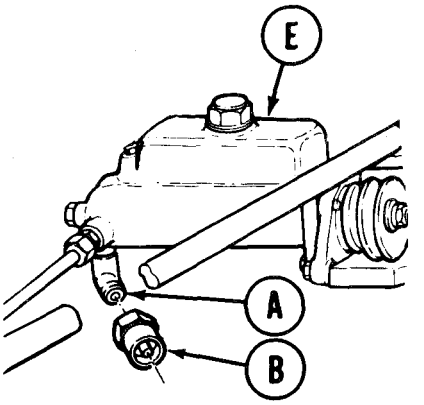
Go on to Sheet 3

TA249421

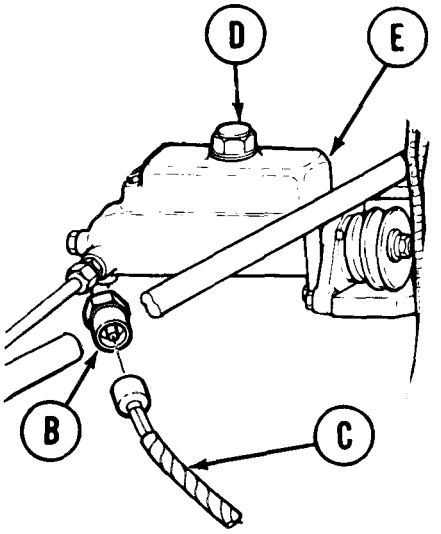
BRAKE SWITCH (STOPLIGHT) REPLACEMENT (Sheet 3 of 4)

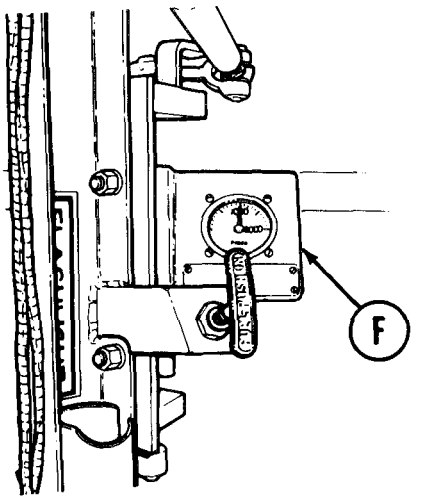
INSTALLATION:

1. Using fingers, remove plug from elbow (A).
2. Using pipe wrench, hold elbow (A).
3. Using 1 inch deep style socket, install stoplight switch (B).
4. Using fingers, connect electrical connector (C) to stoplight switch (B).
5. Using 1-1/8 inch socket, remove filler cap (D).
6. Using funnel, fill master cylinder (E) with brake fluid to 1/4 inch from top of opening.
7. Using 1-1/8 inch socket, install filler cap (D).



8. Press (not pump) brake pedal to ensure a pressure of 800 to 1000 psi (see gage F) is maintained without spongy pedal movement.
9. Place MASTER BATTERY switch in ON position.
10. While pressing brake pedal, have second person check that both brake lights light up.
11. Place MASTER BATTERY switch in OFF position.





Go on to Sheet 4

TA249422

BRAKE SWITCH (STOPLIGHT) REPLACEMENT (Sheet 4 of 4)

12. If brake operation is not satisfactory, perform brake system bleeding operations (page 13-86).

13. Place transmission shift lever in P (park) and remove blocks from tracks (TM 5-5420-202-10).

End of Task

BRAKE PRESSURE GAGE, TUBE ASSEMBLY, REDUCER, AND GASKET REPLACEMENT (Sheet 1 of 7)

PROCEDURE INDEX

TOOLS: Screwdriver, cross-tip
Ratchet with l/2 in. drive
1-1/8 in. socket with 1/2 in. drive
1/2 in. combination box and open end wrench
9/16 in. combination box and open end wrench
11/16 in. combination box and open end wrench
3/4 in. combination box and open end wrench
Funnel, 1 qt. cap. with flexible spout

SUPPLIES: Container, 1 qt. cap.
Rags (Item 65, Appendix D)
Dry cleaning solvent (Item 55, Appendix D)
1/2 in. plastic plug
Brake fluid (Item 40, Appendix D)
Gasket
Packing
Masking tape (Item 57, Appendix D)
Gloves (Item 69, Appendix D)
Goggles (Item 70, Appendix D)

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Block tracks (TM 5-5420-202-10)
Place MASTER BATTERY switch in OFF position (TM 5-5420-202-10)
Place transmission shift lever in neutral “N” (TM 5-5420-202-10)

Go on to Sheet 2

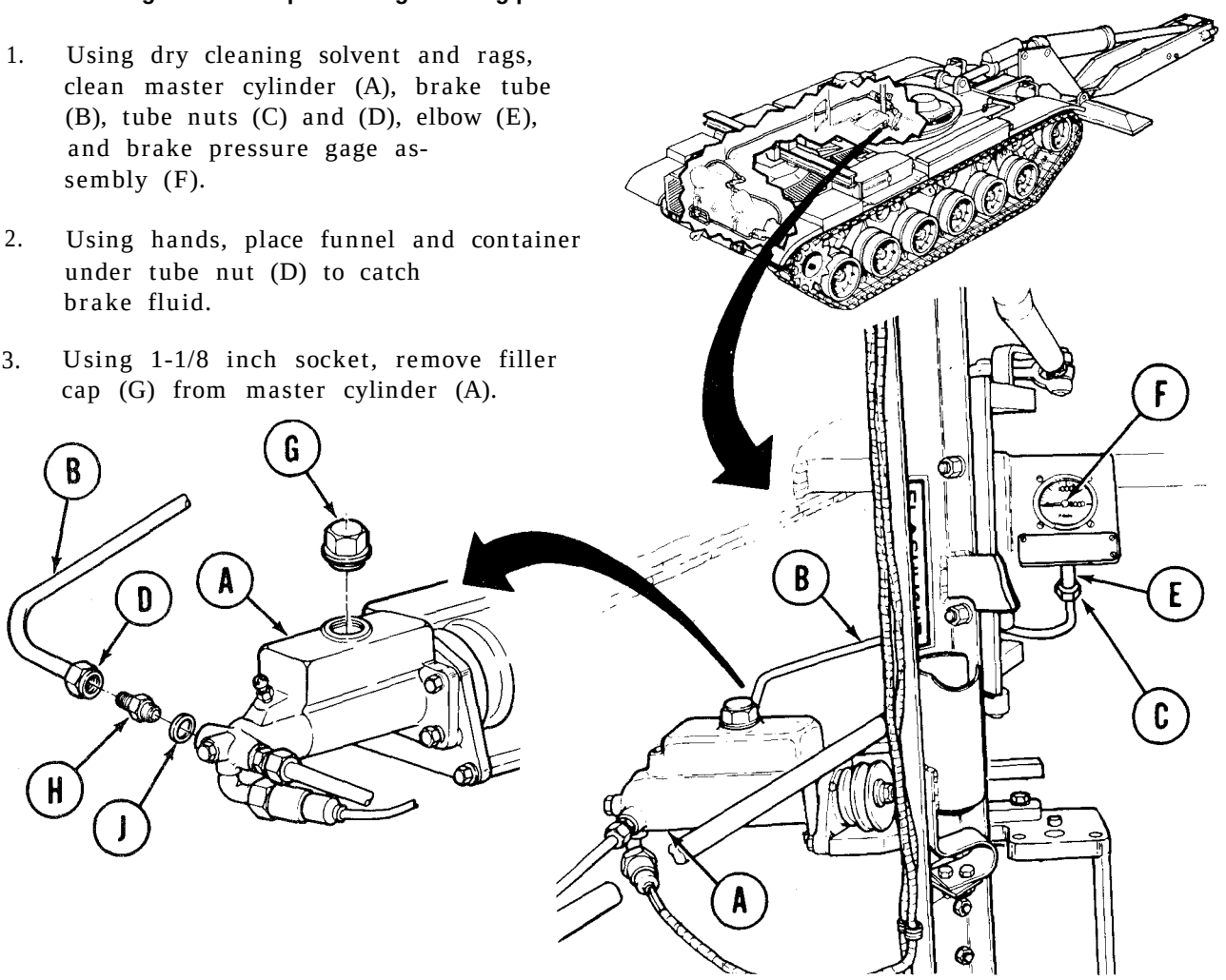
BRAKE PRESSURE GAGE, TUBE ASSEMBLY, REDUCER, AND GASKET REPLACEMENT (Sheet 2 of 7)

REMOVAL:

WARNING

Cleaning agent specified is flammable. Use only in well ventilated areas. Keep away from flames, sparks, or heat. Do not smoke while using. Prevent contact with eyes, mouth, and/or skin. Wear rubber gloves when performing cleaning procedures.

1. Using dry cleaning solvent and rags, clean master cylinder (A), brake tube (B), tube nuts (C) and (D), elbow (E), and brake pressure gage assembly (F).
2. Using hands, place funnel and container under tube nut (D) to catch brake fluid.
3. Using 1-1/8 inch socket, remove filler cap (G) from master cylinder (A).



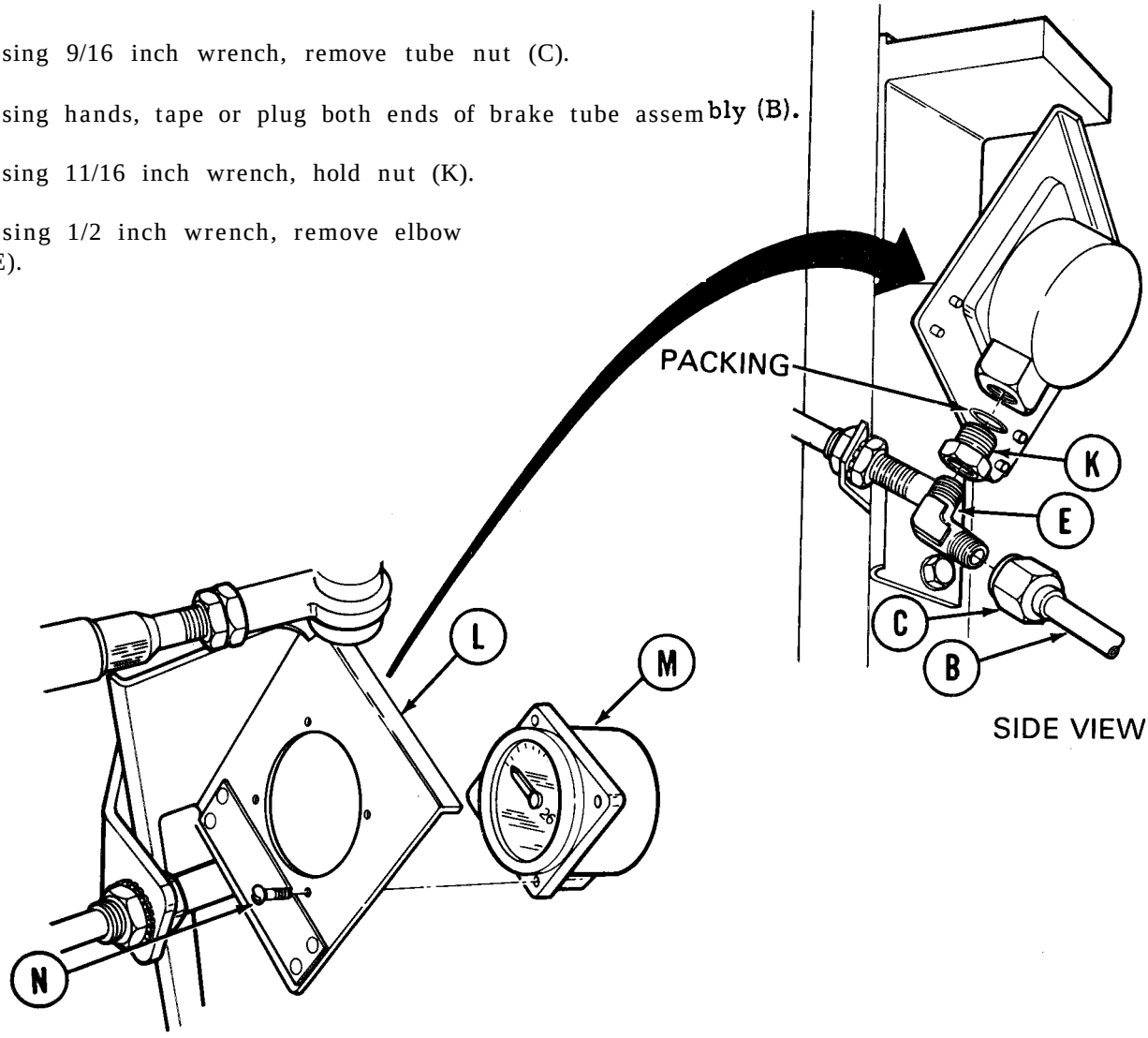
4. Using 3/4 inch wrench to hold reducer (H), use 9/16 inch wrench to remove tube nut (D).
5. After brake fluid has drained from master cylinder (A), use fingers to install filler cap (G) to master cylinder.
6. Using 3/4 inch wrench, remove reducer (H) and gasket (J). Throw gasket (J) away. Plug hole with plastic plug.

Go on to Sheet 3

TA249424

BRAKE PRESSURE GAGE, TUBE ASSEMBLY, REDUCER, AND GASKET REPLACEMENT (Sheet 3 of 7)

7. Using 9/16 inch wrench, remove tube nut (C).
8. Using hands, tape or plug both ends of brake tube assembly (B).
9. Using 11/16 inch wrench, hold nut (K).
10. Using 1/2 inch wrench, remove elbow (E).



11. Using 11/16 inch wrench, remove nut (K) and packing. Throw packing away.
12. Place hand behind bracket assembly (L) and hold gage (M) firmly.
13. Using screwdriver, remove four screws (N) from face of bracket assembly (L).
14. Using hands, remove gage (M). Place gage in safe area.

Go on to Sheet 4

TA249425

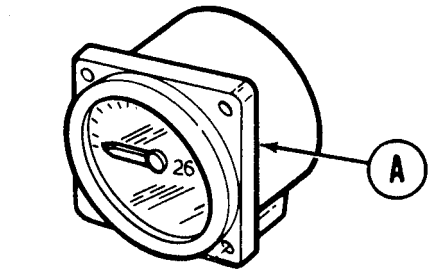
BRAKE PRESSURE GAGE, TUBE ASSEMBLY, REDUCER, AND GASKET REPLACEMENT (Sheet 4 of 7)

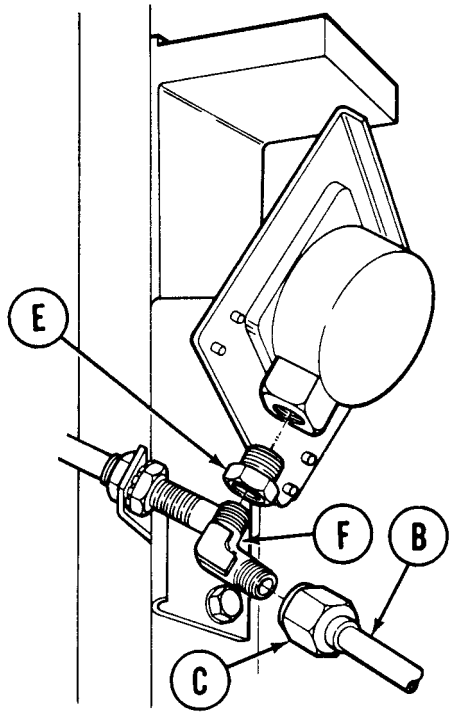
CLEANING AND INSPECTION:

WARNING

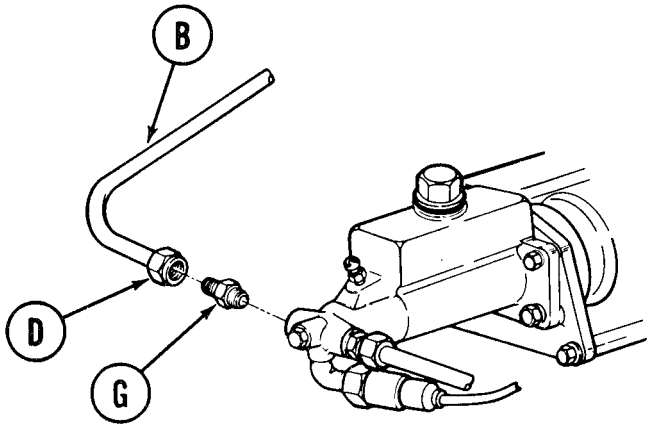
Cleaning agent specified is flammable. Use only in well ventilated areas. Keep away from flames, sparks, or heat. Do not smoke while using. Prevent contact with eyes, mouth, and/or skin, Wear rubber gloves when performing cleaning procedures.

1. Using rags and dry cleaning solvent, clean all parts inside and out.
2. Inspect gage (A) for cracked or broken glass. Replace if unserviceable.
3. Inspect brake tube assembly (B) and tube nuts (C) and (D) for worn threads, holes, and cracks. Replace if unserviceable.
4. Inspect nut (E) and elbow (F) for worn threads and cracks. Replace if unserviceable.
5. Inspect reducer (G) for worn threads or cracks. Replace if unserviceable.





SIDE VIEW



REAR VIEW

Go on to Sheet 5

TA249426

BRAKE PRESSURE GAGE, TUBE ASSEMBLY, REDUCER, AND GASKET REPLACEMENT (Sheet 5 of 7)

INSTALLATION:

1. Using fingers, install nut (A) to elbow (B). Install packing (C) above nut (A) and install elbow (B) to gage (D).

2. Using 11/16 inch wrench, tighten nut (A) while holding gage (D).

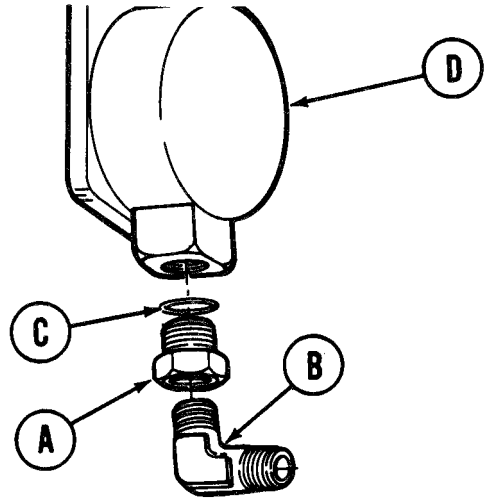
3. Using 1/2 inch wrench, tighten elbow (B) while holding nut (A) with 11/16 inch wrench, Aline elbow (B) toward year of gage as shown.

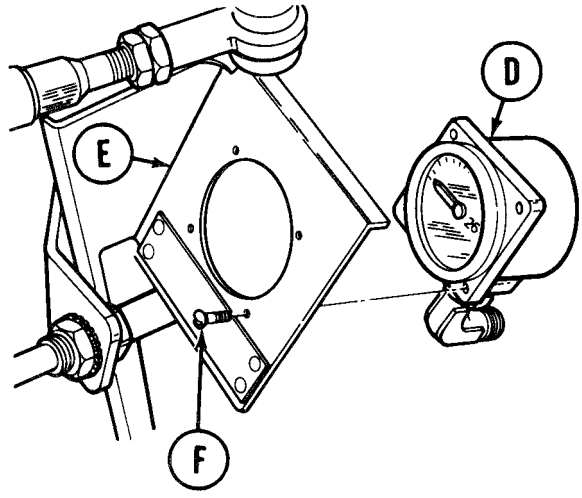
4. Using hands, place gage (D) behind bracket. assembly (E) and aline four screw holes.

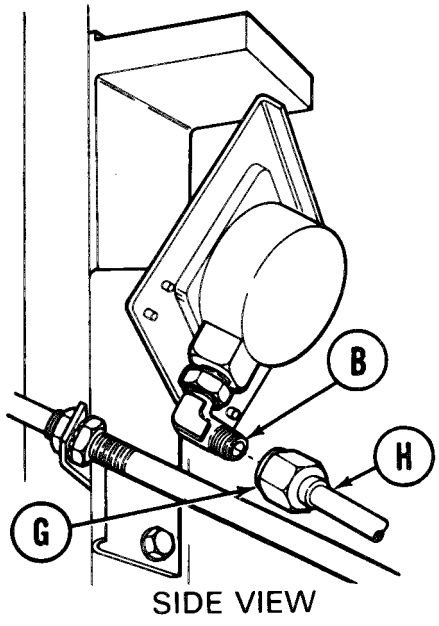
5. Using screwdriver, install four screws (F) through holes in bracket assembly (E) to secure gage (D) to bracket assembly (E).

6. Using fingers, remove protective covering, rags or tape from brake tube assembly (H) ends.

7. Using fingers, install tube nut (G) and brake tube assembly (H) finger tight to elbow (B).







SIDE VIEW

Go on to Sheet 6

TA249427

BRAKE PRESSURE GAGE, TUBE ASSEMBLY, REDUCER, AND GASKET REPLACEMENT (Sheet 6 of 7)

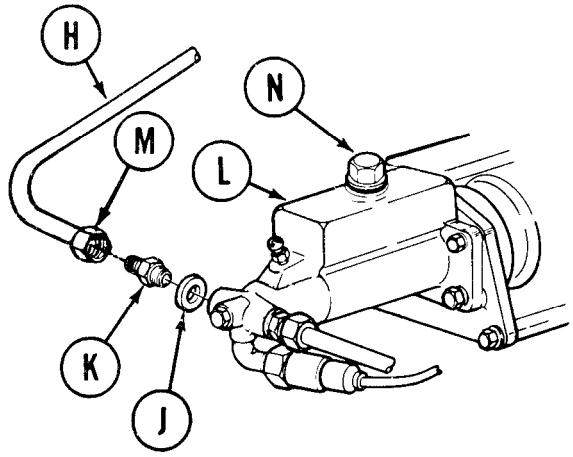
8. Using fingers, install gasket (J) to reducer (K).

9. Using 3/4 inch wrench, install reducer (K) to master cylinder (L).

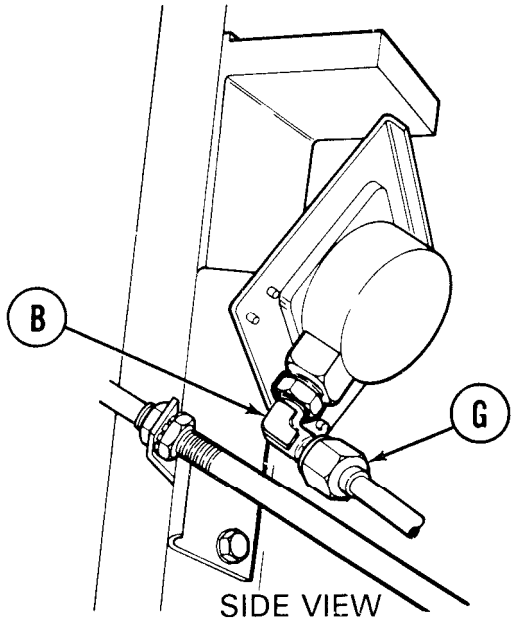
10. Using 9/16 inch wrench, install tube connecting nut (M) and brake tube assembly (H) to reducer (K).

11. Using fingers, remove filler cap (N) from master cylinder (L).

12. Using funnel, fill master cylinder with brake fluid to 1/4 inch from top of opening.



REAR VIEW



SIDE VIEW

13. Using 1-1/8 inch socket, install filler cap (N) to master cylinder (L).

14. Using hands, place rags or container under line connecting nut (G) to catch brake fluid during line bleeding procedure.

15. Depress brake pedal until brake fluid appears running clear and free of bubbles at line nut (G).

16. Using 9/16 inch wrench, tighten nut (G) while holding elbow (B) with 1/2 inch wrench.

17. Using 1-1/8 inch socket, remove filler cap (N).

18. Fill master cylinder with brake fluid to 1/4 inch from top of opening and install filler cap (N).

Go on to Sheet 7

TA249428

BRAKE PRESSURE GAGE, TUBE ASSEMBLY, REDUCER, AND GASKET REPLACEMENT (Sheet 7 of 7)

19. Repeat steps 10 through 16 until brake pedal can be pushed in (not pumped) and pressure of 800 to 1000 psi is maintained without a spongy pedal.

20. Place transmission shift lever in P (park) and remove blocks from tracks.

End of Task

MASTER BRAKE CYLINDER-TO-BULKHEAD TUBE ASSEMBLY REPLACEMENT (Sheet 1 of 5)

PROCEDURE INDEX

TOOLS: 7/8 in. combination box and open end wrench
11/16 in. combination box and open end wrench
13/16 in. combination box and open end wrench
Ratchet with 1/2 in. drive
1-1/8 in. socket with 1/2 in. drive
Funnel, 1 qt. cap. with flexible spout

SUPPLIES: Container, 1 qt. cap.
Rags (Item 65, Appendix D)
Dry cleaning solvent (Item 55, Appendix D)
Caps (2 required)
Brake fluid (Item 34, Appendix D)
Gloves (Item 69, Appendix D)
Goggles (Item 70, Appendix D)

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Block tracks to prevent vehicle movement (TM 5-5420-202-10)
Place MASTER BATTERY switch in OFF position (TM 5-5420-202-10)
Place transmission shift lever in neutral “N” (TM 5-5420-202-10)

Go on to Sheet 2

MASTER BRAKE CYLINDER-TO-BULKHEAD TUBE ASSEMBLY REPLACEMENT (Sheet 2 of 5)

REMOVAL:

WARNING

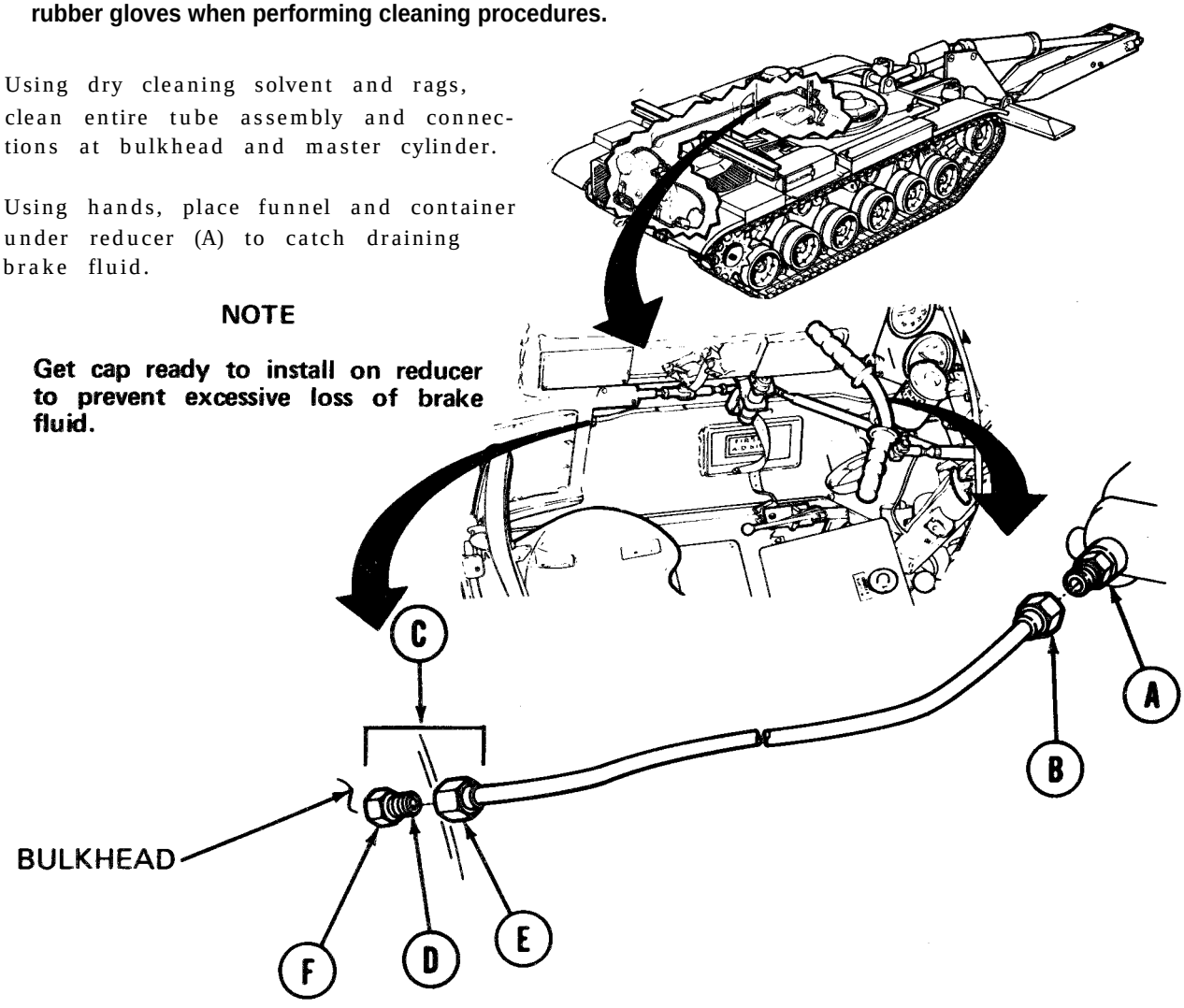
Cleaning agent specified is flammable. Use only in well ventilated areas. Keep away from flames, sparks, or heat. Do not smoke while using. Prevent contact with eyes, mouth, and/or skin. Wear rubber gloves when performing cleaning procedures.

1. Using dry cleaning solvent and rags, clean entire tube assembly and connections at bulkhead and master cylinder.

2. Using hands, place funnel and container under reducer (A) to catch draining brake fluid.

NOTE

Get cap ready to install on reducer to prevent excessive loss of brake fluid.



3. Using 13/16 inch wrench to hold reducer (A), use 11/16 inch wrench to remove tube connecting nut (B). Cap reducer (A).

NOTE

Place rags under union (C) at bulkhead to catch dripping brake fluid. Have cap ready to place on nipple (D).

4. Using 7/8 inch wrench to hold nut (F), use 11/16 inch wrench to remove tube nut (E). Install cap on nipple (D).

Go on to Sheet 3

TA249430

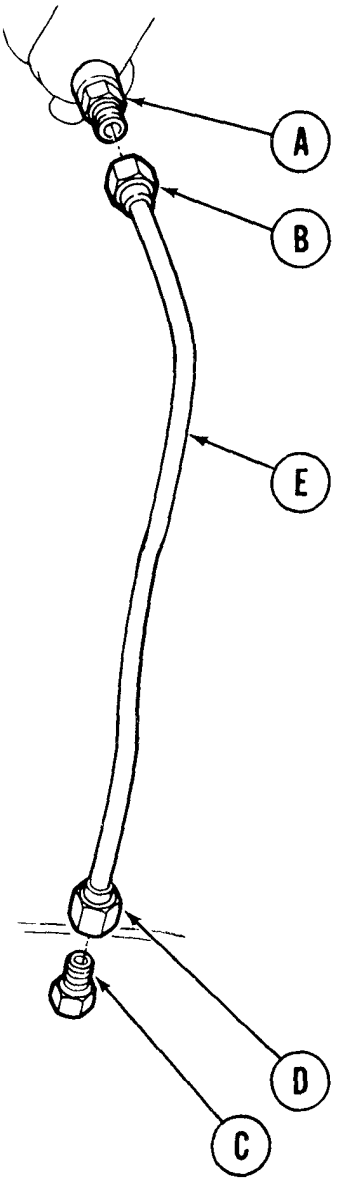
MASTER BRAKE CYLINDER-TO-BULKHEAD TUBE ASSEMBLY REPLACEMENT (Sheet 3 of 5)

CLEANING AND INSPECTION:

WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. To prevent personal injury, wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point for Type #1 Dry Cleaning Solvent is 100°F (38°C) and for Type #2 is 138°F (50°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

1. Using rags and dry cleaning solvent, clean all parts.
2. Using low pressure air, dry all parts.
3. Inspect tube reducer (A), tube nut (B), nipple (C), and tube nut (D) for worn threads. Replace if unserviceable.
4. Inspect tube assembly (E) for cracks, dents or holes. Replace if unserviceable.



TA249431

Go on to Sheet 4

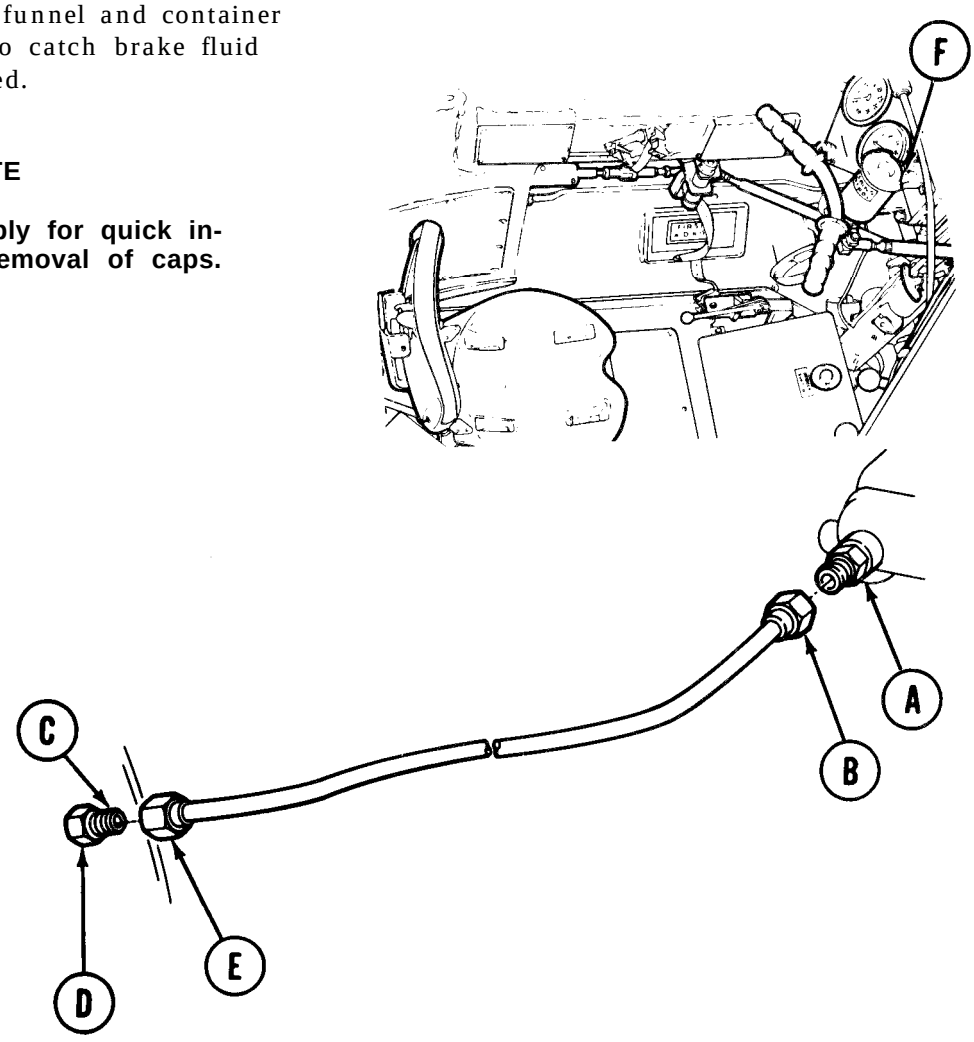
MASTER BRAKE CYLINDER-TO-BULKHEAD TUBE ASSEMBLY REPLACEMENT (Sheet 4 of 5)

INSTALLATION:

1. Using hands, place funnel and container under reducer (A) to catch brake fluid when cap is removed.

NOTE

Place tube assembly for quick installation before removal of caps.



2. Using 13/16 inch wrench to hold reducer (A), use hand to remove cap from reducer (A). Use 11/16 inch wrench to install tube connecting nut (B).

3. Using 7/8 inch wrench to hold nut (D), use hand to remove cap from nipple (C). Use 11/16 inch open end wrench to install tube connecting nut (E).

4. Using socket, remove filler cap (F) from master cylinder. Fill to 1/4 inch from top of opening with brake fluid. Install filler cap (F).

Go on to Sheet 5

TA249432

MASTER BRAKE CYLINDER-TO-BULKHEAD TUBE ASSEMBLY REPLACEMENT (Sheet 5 of 5)

5. Bleed brakes (page 13-86).

6. Place transmission shift lever in P (park) and remove blocks from tracks (TM 5-5420-202-10).

7. Test drive vehicle (TM 5-5420-202-10) to ensure brake system is operational.

End of Task

BRAKE QUICK-DISCONNECT AND HOSE ASSEMBLY REPLACEMENT (Sheet 1 of 7)

PROCEDURE INDEX

TOOLS: 9/16 in. socket with 1/2 in. drive
11/16 in. socket with 1/2 in. drive
11/16 in. combination box and open end wrench
13/16 in. open end wrench
Ratchet with 1/2 in. drive
5 in. extension with 1/2 in. drive
Adjustable wrench (crescent)
7/8 in. combination box and open end wrench

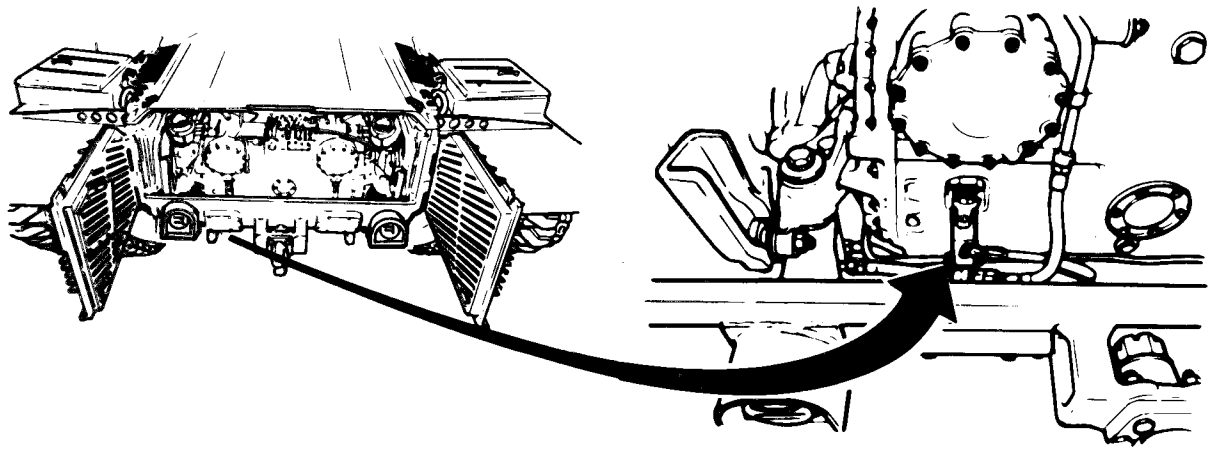
SUPPLIES: Drain pan
1/2 in. plastic plugs (5)
Dry cleaning solvent (Item 55, Appendix D)
Rags (Item 65, Appendix D)
Lockwasher
Gloves (Item 69, Appendix D)
Goggles (Item 70, Appendix D)

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Block tracks to prevent vehicle movement (TM 5-5420-202-10)
Place shift lever in N (neutral) position and release brakes (TM 5-5420-202-10)
Remove transmission shroud (page 9-2)

NOTE

Clean all parts and general area prior to disassembly.



Go on to Sheet 2

TA249433

BRAKE QUICK-DISCONNECT AND HOSE ASSEMBLY REPLACEMENT (Sheet 2 of 7)

REMOVAL:

1. Place rags under hose assembly (A) to absorb brake fluid.
2. Using hand, turn brake quick-disconnect (B) off coupling half (C).
3. Using adjustable wrench to hold elbow (D) and 11/16 inch wrench on nut of hose assembly (A), disconnect nut.
4. Using adjustable wrench to hold elbow (D) and 11/16 inch wrench on nut of tube assembly (E), disconnect nut and remove elbow.

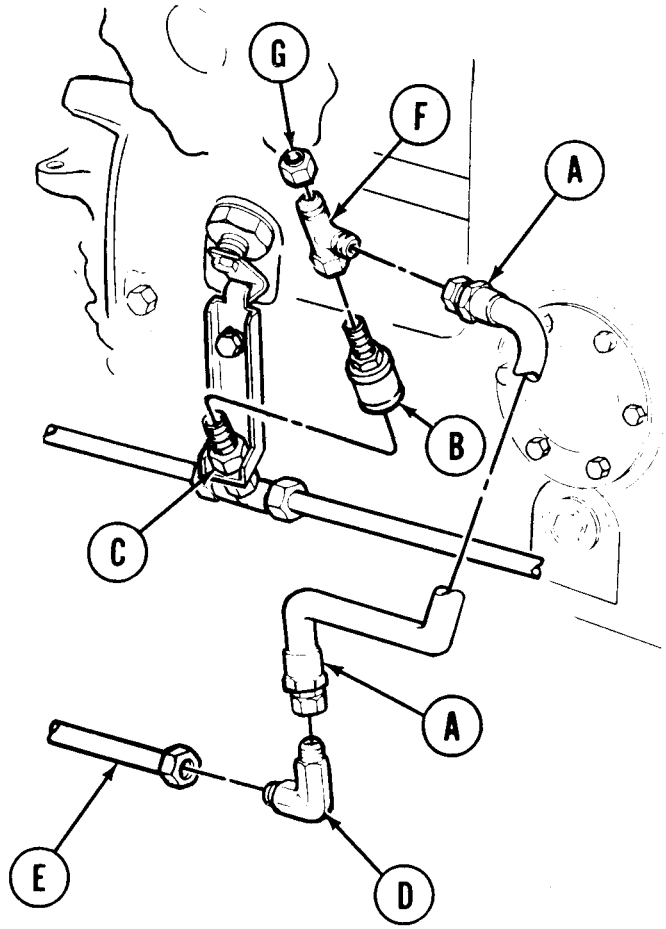
NOTE

Insert plastic plug in nut of tube assembly (E).

5. Using 11/16 inch wrench on nut of hose assembly (A) at tee (F), disconnect nut and remove hose assembly (A).

NOTE

If hose assembly (A) is not defective, insert plastic plugs in end fittings.



6. Using adjustable wrench to hold tee (F) and 11/16 inch socket on cap (G), remove cap.
7. Using 13/16 inch wrench to hold top of disconnect (B) and 11/16 inch wrench on nut of tee (F), remove tee.

Go on to Sheet 3

TA249434

BRAKE QUICK-DISCONNECT AND HOSE ASSEMBLY REPLACEMENT (Sheet 3 of 7)

8. Using adjustable wrench to hold tee (M) and 11/16 inch wrench on nuts of tube assemblies (H and J), disconnect nuts.

9. Using 9/16 inch socket, remove screw (K) and lockwasher (L).

NOTE

Replace screw (K) and lockwasher (L) after step 10, finger tight, to hold adjusting screw lock plate.

10. Remove parts (C, M, N, and P) as an assembly.

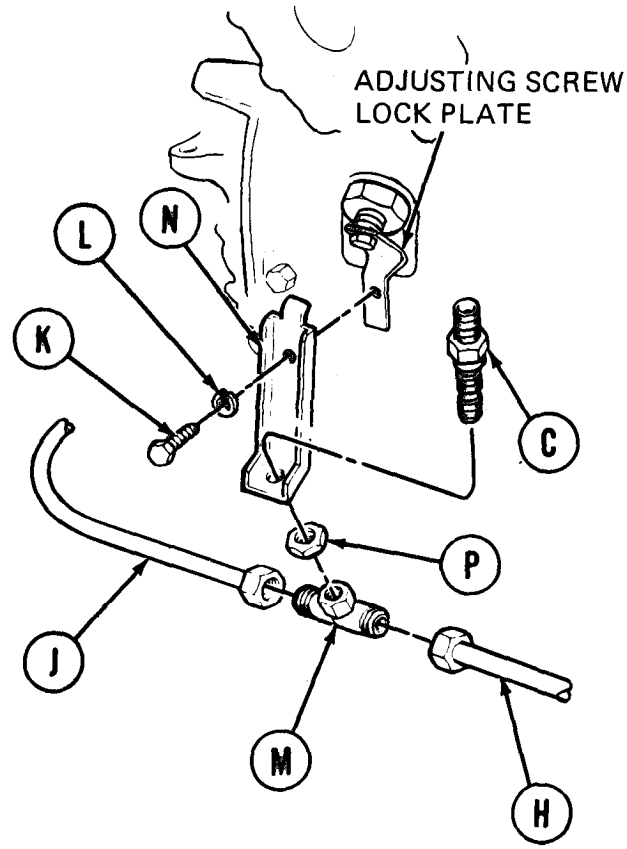
NOTE

It may be necessary to wiggle or pull tube assemblies (H or J) slightly to clear tee (M).

11. Insert plastic plug in nuts of both tube assemblies (H and J).

12. Using 13/16 inch wrench to hold coupling half (C) and 11/16 inch wrench on nut of tee (M), disconnect and remove tee (M) from bracket (N).

13. Using 13/16 inch wrench to hold coupling half (C) and 7/8 inch wrench on nut (P), remove nut (P) from coupling half (C) and bracket (N).



Go on to Sheet 4

TA249435

BRAKE QUICK-DISCONNECT AND HOSE ASSEMBLY REPLACEMENT (Sheet 4 of 7)

CLEANING AND INSPECTION:

WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. To prevent personal injury, wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point for Type #1 Dry Cleaning Solvent is 100°F (38°C) and for Type #2 is 138°F (50°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

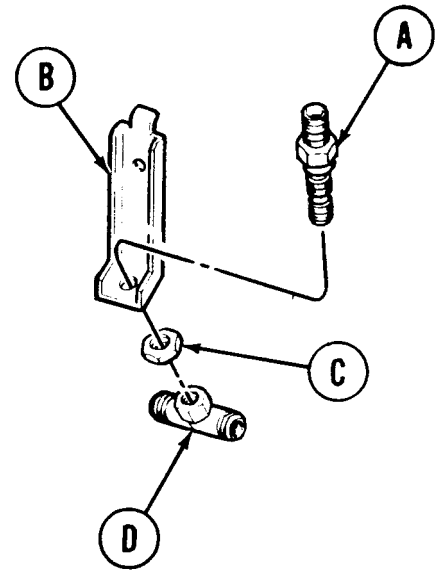
1. Clean all metallic parts with dry cleaning solvent.
2. Inspect all parts for damage or wear. Replace all unserviceable parts.
3. Inspect tube and hose assembly nuts for cracks. Replace tube or hose assembly if cracks are found.

INSTALLATION:

1. Insert coupling half (A) through hole in bracket (B).
2. Thread nut (C) onto coupling half (A) finger tight.
3. Using 13/16 inch wrench to hold coupling (A) and 7/8 inch wrench on nut (C), tighten nut.
4. Thread tee (D) on coupling half (A) finger tight.

NOTE

Do not tighten nut of tee (D) at this time. It will have to be alined later.



Go on to Sheet 5

TA249436

BRAKE QUICK-DISCONNECT AND HOSE ASSEMBLY REPLACEMENT (Sheet 5 of 7)

5. Remove plastic plugs from tube assemblies (E and F) and position assembled parts (A thru D) with tee (D) between tube assemblies (E and F).

6. Tighten nuts of tube assemblies (E and F) to tee (D) finger tight.

7. Remove screw (G) and lockwasher (H) holding adjusting screw lock plate.

8. Position bracket (B) over adjusting screw lock plate. Insert screw (G) and lockwasher (H). Tighten finger tight.

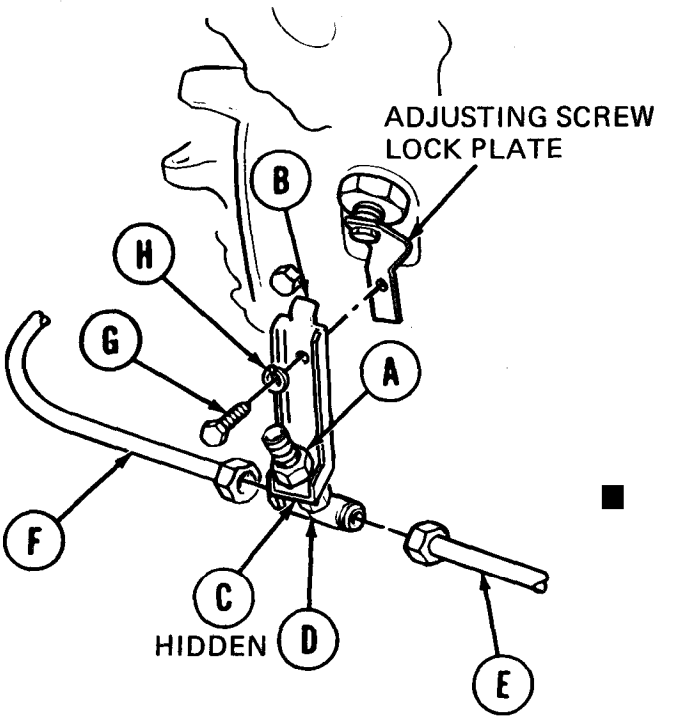
9. Using 9/16 inch socket, tighten screw (G).

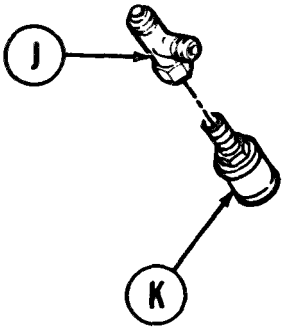
10. Using adjustable wrench to hold tee (D) and 11/16 inch wrench, tighten nuts of tube assemblies (E and F).

11. Using 11/16 inch wrench, tighten nut of tee (D).

12. Thread nut of tee (J) on coupling half (K) finger tight.

13. Using 13/16 inch wrench to hold coupling half (K) and 11/16 inch wrench on nut of tee (J), tighten nut.





Go on to Sheet 6

TA249437

BRAKE QUICK-DISCONNECT AND HOSE ASSEMBLY REPLACEMENT (Sheet 6 of 7)

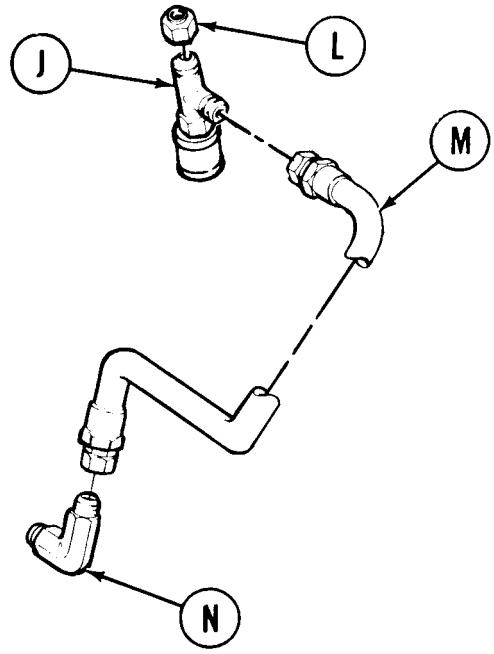
14. Thread cap (L) on tee (J).

15. Using adjustable wrench to hold tee (J), use 11/16 inch wrench and tighten cap (L).

16. Thread nuts of hose assembly (M) on tee (J) and elbow (N).

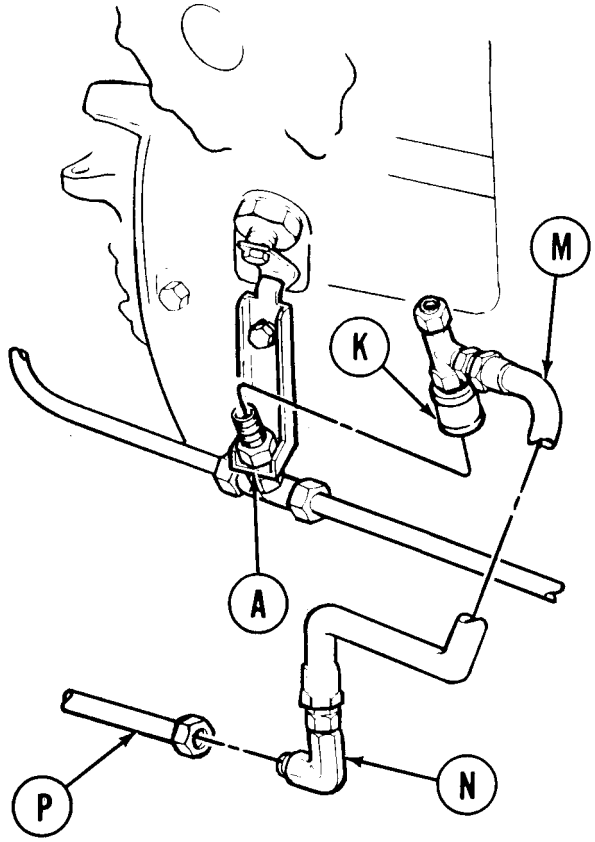
17. With elbow (N) facing as shown, using adjustable wrench to hold elbow (N) and 11/16 inch wrench on nut of hose assembly (M), tighten nut.

18. Using adjustable wrench to hold tee (J) and 11/16 inch wrench on nut of hose assembly (M), tighten nut.



19. Position assembled parts (J thru N) in vehicle with elbow (N) positioned at nut of tube assembly (P). Tighten nut finger tight.

20. Using adjustable wrench to hold elbow (N) and 11/16 inch wrench on nut of tube assembly (P), tighten nut.



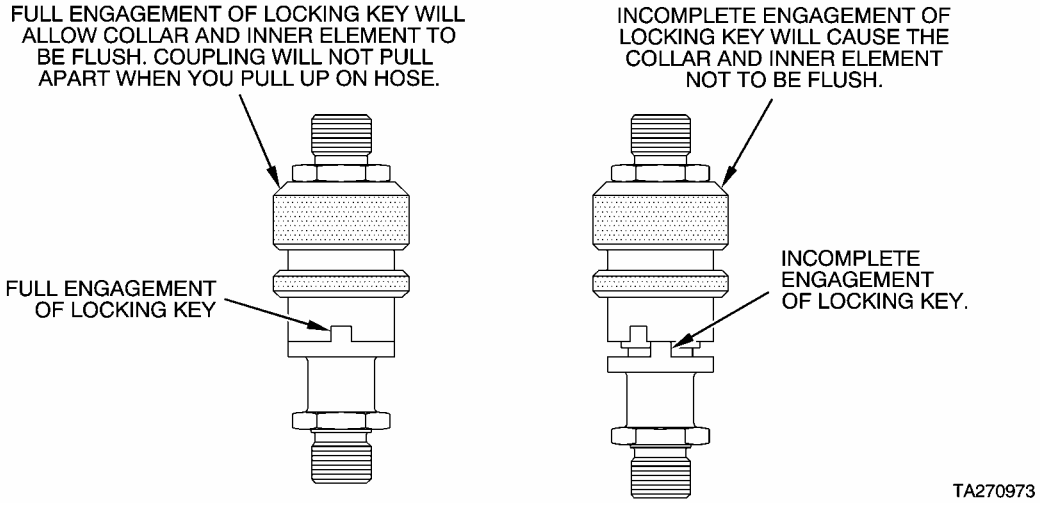
TA249438

Go on to Sheet 7

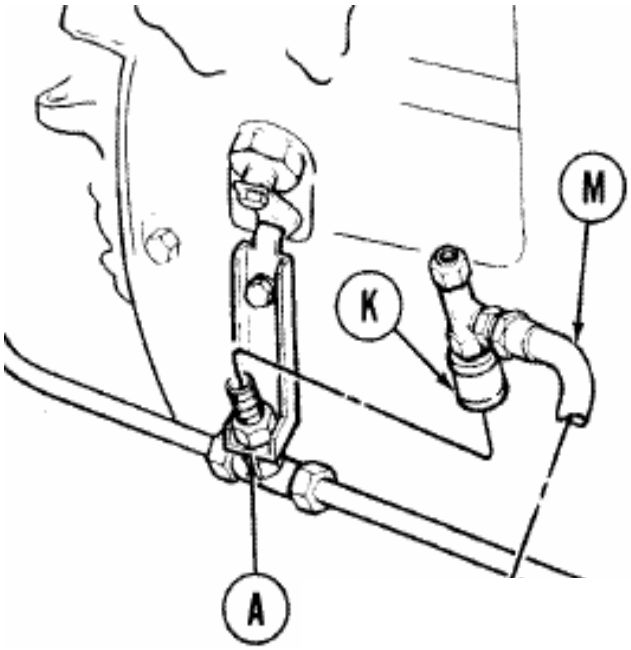
BRAKE QUICK-DISCONNECT AND HOSE ASSEMBLY REPLACEMENT (Sheet 7 of 7)

WARNING

Failure to correctly connect quick disconnect (full engagement) will result in brake failure and could cause serious injury or death.



21. Use hand to connect brake quick-disconnect (K) to coupling half (A).
22. Pull up on hose assembly (M) to ensure quick-disconnect halves (K) and (A) are in full engagement.
23. Perform brake bleeding procedures (page 13-86).
24. Install transmission shroud (page 9-6).
25. Place shift lever in P (park) position and remove blocks from track (TM 5-5420-202-10).



End of Task

BRAKE LEFT HAND SLAVE CYLINDER AND TUBE ASSEMBLY REPLACEMENT (Sheet 1 of 4)

PROCEDURE INDEX

TOOLS: 9/16 in. socket with 1/2 in. drive
5 in. extension and ratchet with 1/2 in. drive
Putty knife
11/16 in. combination box and open end wrench
13/16 in. combination box and open end wrench

SUPPLIES: Container
1/2 in. plastic cap
Lint-free cloth (Item 12, Appendix D)
1/2 in. plastic plug
1/2 in. masking tape (Item 57, Appendix D)
Dry cleaning solvent (Item 55, Appendix D)
Gaskets
Gloves (Item 69, Appendix D)
Goggles (Item 70, Appendix D)

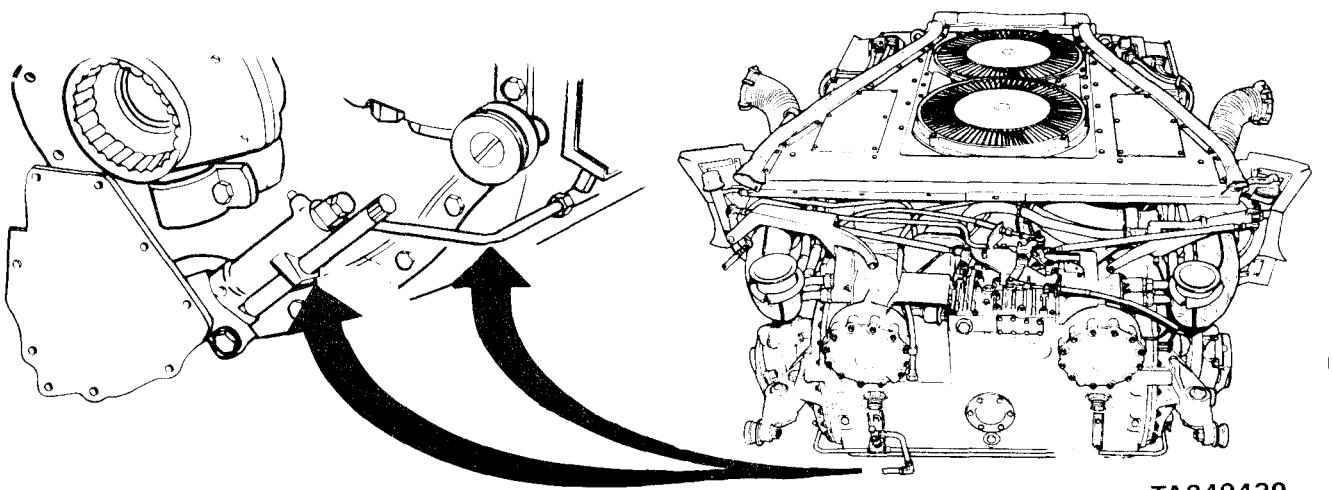
REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Remove powerplant (page 5-2)

REMOVAL:

NOTE

Clean all parts and general area prior to disassembly.



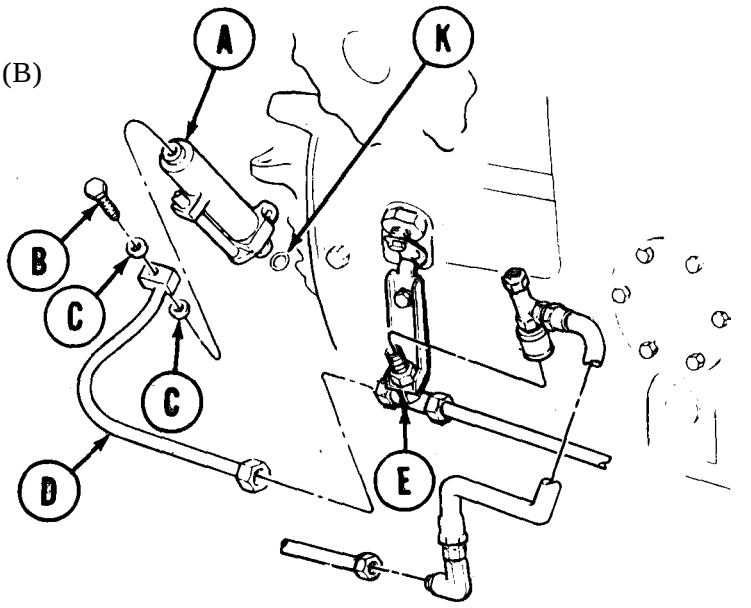
TA249439

Go on to Sheet 2

BRAKE LEFT HAND SLAVE CYLINDER AND TUBE ASSEMBLY REPLACEMENT (Sheet 2 of 4)

1. Position container under slave cylinder (A) to catch brake fluid.

2. Using 13/16 inch wrench, remove bolt (B) and two gaskets (C). Throw gaskets



NOTE

Allow brake fluid to drain, then throw away fluid. Check bolt (B) to make sure internal passages are open and clean.

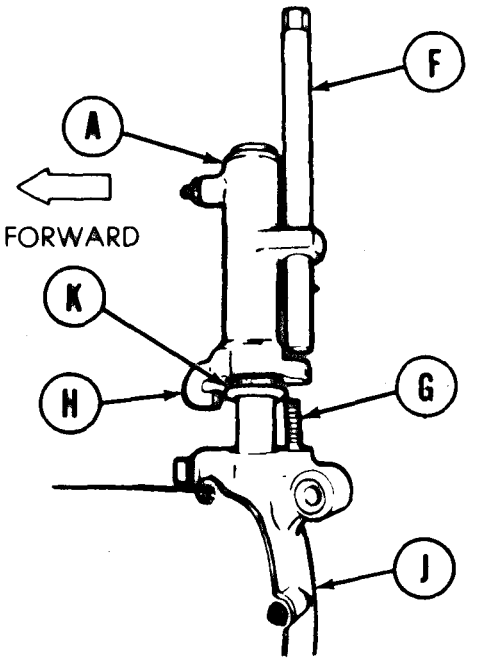
3. Using 11/16 inch wrench, disconnect nut on tube assembly (D) from tee (E) and install plastic cap on tee.

4. Install plastic plug in nut of tube assembly (D) and masking tape over parts in other end.

5. Using 9/16 inch socket, disconnect mounting nut (F) from stud (G).

6. Move slave cylinder (A) forward and wiggle it side to side while pulling up until catch (H) clears housing assembly. Continue this procedure until it comes loose from housing assembly (J).

7. Using putty knife, remove packing (K) from groove of slave cylinder (A) and throw away.



Go on to Sheet 3

TA249440

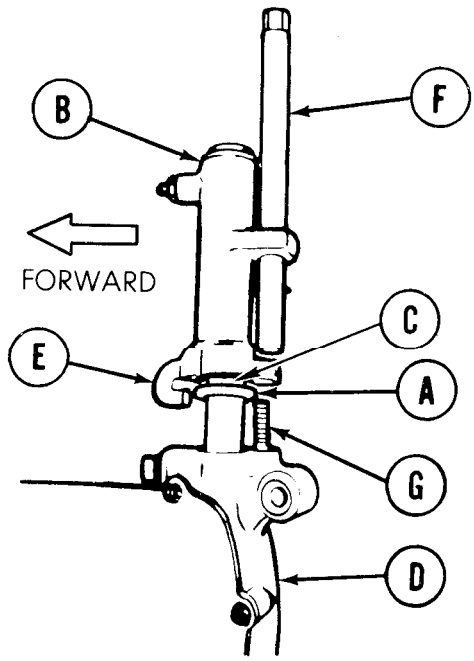
BRAKE LEFT HAND SLAVE CYLINDER AND TUBE ASSEMBLY REPLACEMENT (Sheet 3 of 4)

CLEANING AND INSPECTION:

WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. To prevent personal injury, wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point for Type #1 Dry Cleaning Solvent is 100°F (38°C) and for Type #2 is 138°F (50°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

1. Clean all metallic parts in dry cleaning solvent.
2. Inspect all parts for damage or wear. Replace all unserviceable parts.
3. Inspect tube assembly nut for cracks. Replace tube assembly if any cracks are found.



INSTALLATION:

1. Insert new packing (A) in groove of slave cylinder (B).
2. Position and slide slave cylinder (B) down over housing assembly push rod (C). Wiggle it back and forth while pushing down. Push slave cylinder (B) forward when on housing assembly (D), then pull back to make sure catch (E) engages in housing assembly (D).
3. Tighten mounting nut (F) to stud (G) finger tight.
4. Using 9/16 inch socket, tighten mounting nut (F).

Go on to Sheet 4

TA249441

BRAKE LEFT HAND SLAVE CYLINDER AND TUBE ASSEMBLY REPLACEMENT (Sheet 4 of 4)

5. Remove plastic cap from tee (G) and plastic plug and masking tape from tube assembly (H).

6. **Thread nut of tube assembly (H) on tee (G) finger tight.**

7. **Position two new gaskets (J) and end of tube assembly (H) over part in slave cylinder (B).**

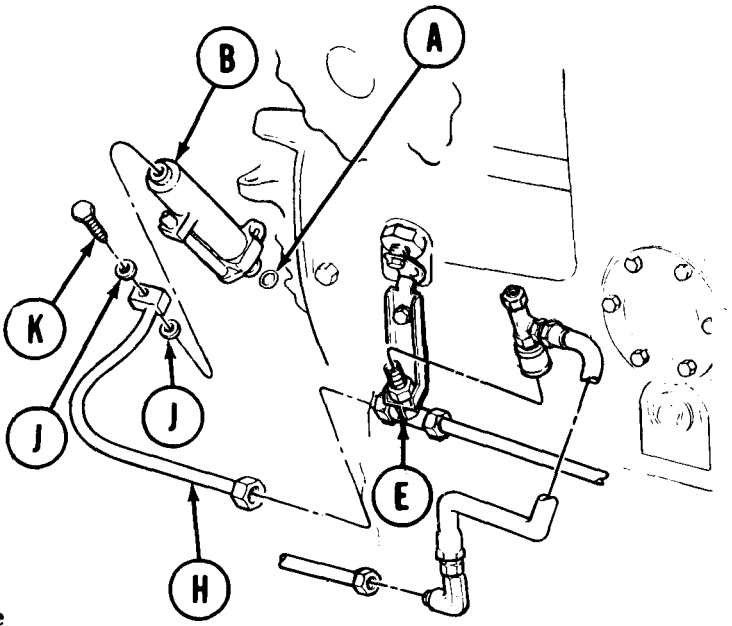
8. **Insert bolt (K) and tighten finger tight.**

9. **Using 13/16 inch wrench, tighten bolt (K).**

10. **Using 11/16 inch wrench, tighten nut of tube assembly (H) to tee (G).**

11. **Install powerplant (page 5-14).**

12. **Perform brake bleeding procedure (page** 13-86).



13. Place shift lever in P (park) position and remove blocks from track (TM 5-5420-202-10).

End of Task

TA249442

BRAKE RIGHT HAND SLAVE CYLINDER AND TUBE ASSEMBLY REPLACEMENT (Sheet 1 of 6)

PROCEDURE INDEX

TOOLS: Ratchet with 1/2 in. drive
5 in. extension with 1/2 in. drive
9/16 in. socket with 1/2 in. drive
7/16 in. socket with 1/2 in. drive
11/16 in. combination box and open end wrench
Putty knife
13/16 in. combination box and open end wrench
Lockwashers

SUPPLIES: Container
1/2 in. plastic cap
1/2 in. plastic plug
1/2 in. masking tape (Item 57, Appendix D)
Dry cleaning solvent (Item 55, Appendix D)
Rags (Item 65, Appendix D)
Gasket (2 required)
Gloves (Item 69, Appendix D)
Goggles (Item 70, Appendix D)

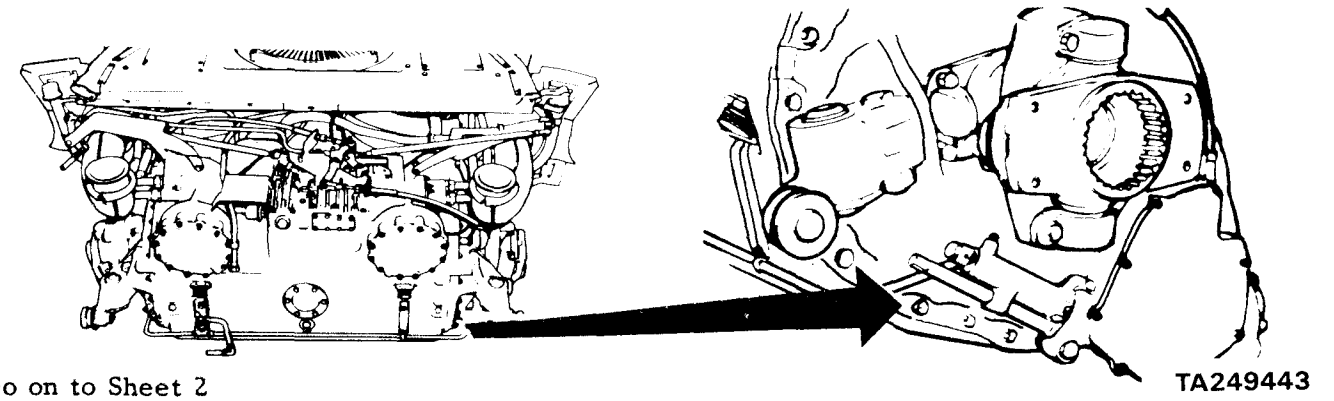
REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Remove powerplant (page 5-2)

REMOVAL:

NOTE

Clean all parts and general area prior to disassembly.



TA249443

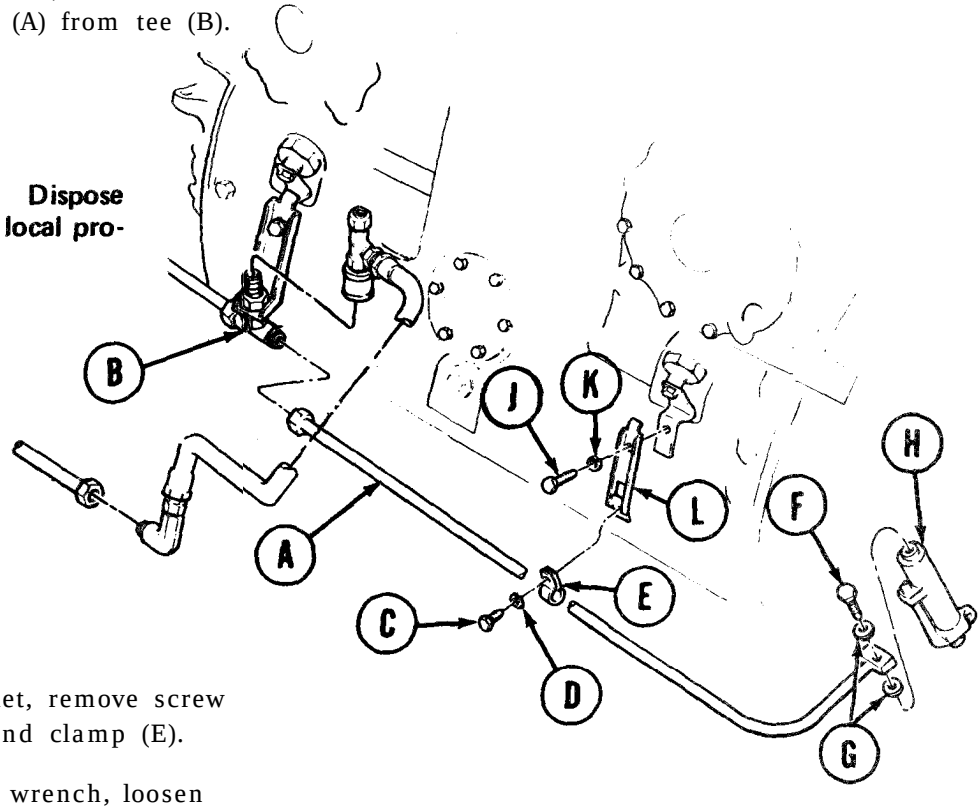
Go on to Sheet 2

BRAKE RIGHT HAND SLAVE CYLINDER AND TUBE ASSEMBLY REPLACEMENT (Sheet 2 of 6)

1. Position container under tube (A) and tee (B) to catch brake fluid.
2. Using 11/16 inch wrench, disconnect nut of tube assembly (A) from tee (B).

NOTE

Allow brake fluid to drain. Dispose of fluid in accordance with local procedures.



3. Using 7/16 inch socket, remove screw (C), lockwasher (D), and clamp (E).
4. Using 13/16 inch box wrench, loosen bolt (F) from slave cylinder.
5. Remove bolt (F), tube (A), and two gaskets (G) as an assembly from slave cylinder (H). Throw gaskets (G) away.
6. Installl plastic cap on tee (B).
7. Install plastic plug in nut of tube assembly (A) and masking tape on parts in other end.
8. Using 9/16 inch socket, remove screw (J), lockwasher (K), and bracket (L).

NOTE

Replace screw (J) and lockwasher (K) to hold adjusting screw lock plate in place until installation of bracket (L).

Go on to Sheet 3

TA249444

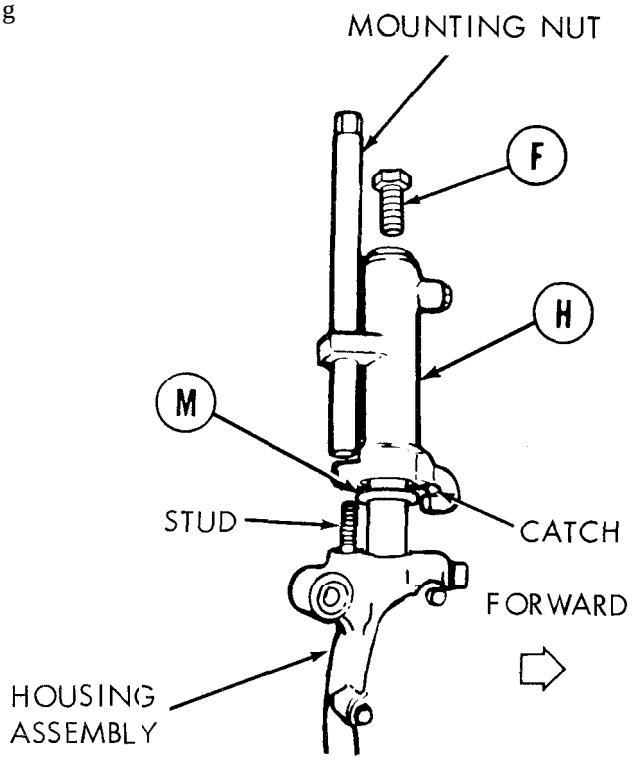
BRAKE RIGHT HAND SLAVE CYLINDER AND TUBE ASSEMBLY REPLACEMENT (Sheet 3 of 6)

9. Using 9/16 inch socket, disconnect mounting nut from stud.

10. Move slave cylinder (H) forward and wiggle it side to side while pulling up until catch clears housing assembly. Continue this procedure until it comes loose from housing assembly.

11. Remove slave cylinder (H).

12. Using putty knife, remove packing (M) from groove of slave cylinder (H) and throw away packing.



CLEANING AND INSPECTION:

WARNING

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1. Clean all metallic parts in dry cleaning solvent.

2. Inspect all parts for damage or wear. Replace all unserviceable parts.

3. Inspect tube assembly nut for cracks. Replace tube assembly if any cracks are found.

4. Check bolt (F) for open and clean internal passages.

Go on to Sheet 4

TA249445

BRAKE RIGHT HAND SLAVE CYLINDER AND TUBE ASSEMBLY REPLACEMENT (Sheet 4 of 6)

INSTALLATION:

1. Insert new packing (A) in groove of slave cylinder (B).

2. Position and slide slave cylinder (B) down over housing assembly push rod. Wiggle it back and forth while pushing down. Push slave cylinder forward when on housing assembly, then pull back to make sure catch engages in housing assembly.

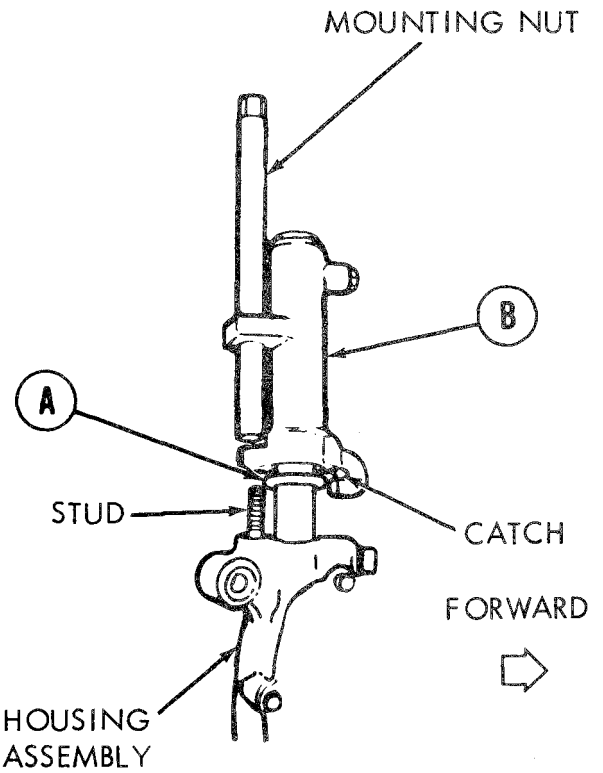
3. Tighten mounting nut to stud, finger tight.

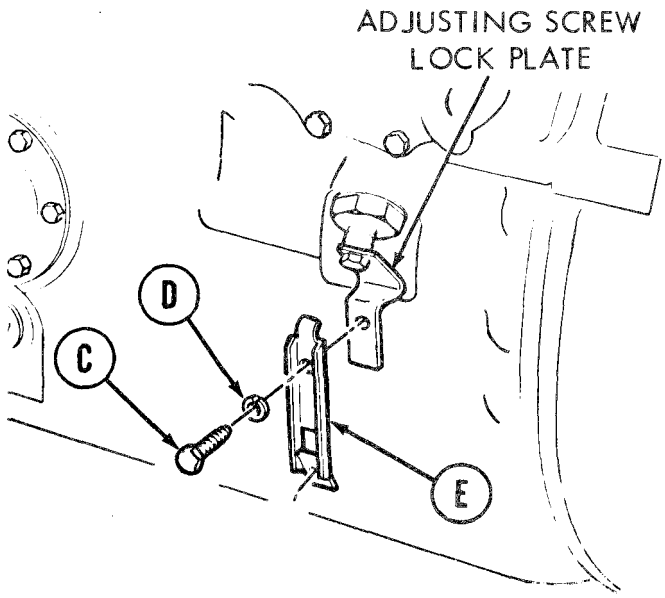
4. Using 9/16 inch socket, tighten mounting nut .

5. Using 9\16 inch socket, remove screw (G) and lockwasher (D) from adjusting screw lock plate.

6. Position and aline adjusting screw lock plate and bracket (E). Insert screw (C) and lockwasher (D) finger tight.

7. Using 9/16 inch socket, tighten screw (C).





Go on to Sheet 5

TA249446

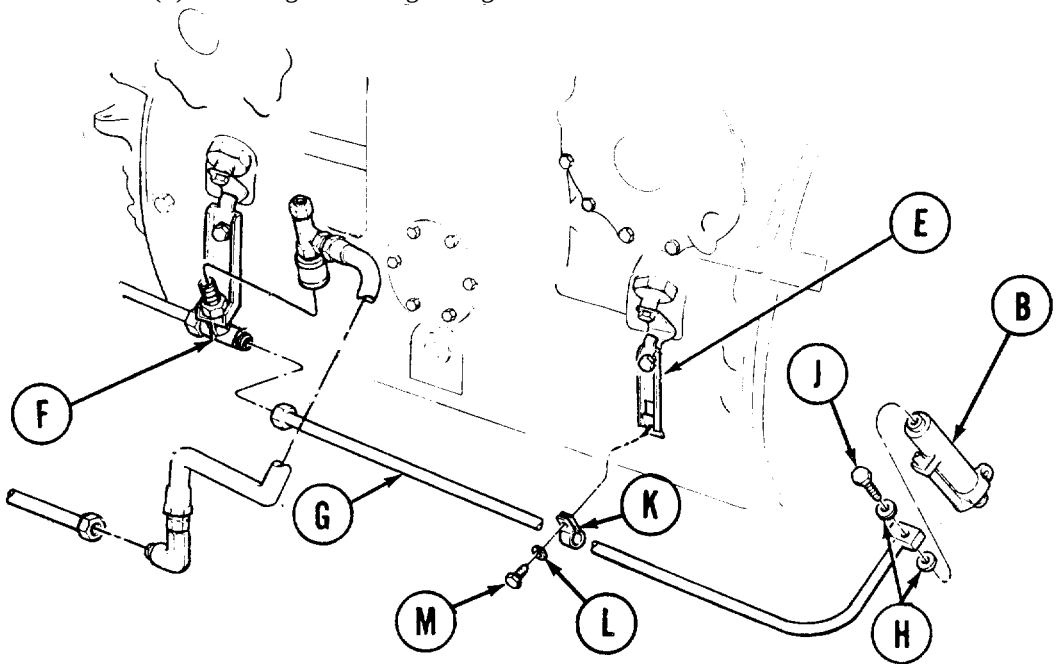
BRAKE RIGHT HAND SLAVE CYLINDER AND TUBE ASSEMBLY REPLACEMENT (Sheet 5 of 6)

8. Remove plastic cap from tee (F) and plastic plug and masking tape from tube assembly (G).

9. Thread nut of tube assembly (G) on tee (F) finger tight.

10. Position two new gaskets (H), bolt (J), and end of tube assembly (G) as an assembly over hole in slave cylinder (B).

11. Insert bolt (J) and tighten finger tight.



12. Using 13/16 inch wrench, tighten bolt (J).

13. Using 11/16 inch wrench, tighten nut of tube assembly (G) to tee (F).

14. Place clamp (K) over tube assembly (G) and position clamp on bracket (E).

15. Place lockwasher (L) on screw (M) and insert through clamp (K) and bracket (E). Tighten finger tight.

16. Using 7/16 inch socket, tighten screw (M).

Go on to Sheet 6

TA249447

BRAKE RIGHT HAND SLAVE CYLINDER AND TUBE ASSEMBLY REPLACEMENT (Sheet 6 of 6)

17. Install powerplant (page 5-14).

18. Perform brake bleeding procedure (page 13-86).

BRAKE CONTROL HOUSING REPAIR (Sheet 1 of 14)

PROCEDURE INDEX

TOOLS:
- Retaining ring pliers (external)
- 6 in. steel rule
- 1/4 in. drive punch
- 1/2 in. drive punch
- Hammer
- 7/8 in. combination box and open end wrench
- 9/16 in. combination box and open end wrenches (two)
- 3/4 in. socket with 1/2 in. drive
- 7/16 in. socket with 1/2 in. drive
- Ratchet with 1/2 in. drive
- Slip joint pliers
- 15/16 in. open end wrench
- 15/16 in. socket with 1/2 in. drive
- 9/16 in. socket with 1/2 in. drive
- Torque wrench with 1/2 in. drive (0-175 lb-ft) (0-237 N•m)
- 5 in. extension with 1/2 in. drive
- 9/16 in. deep well socket with 1/2 in. drive
- Vise
- Vise jaw caps, brass

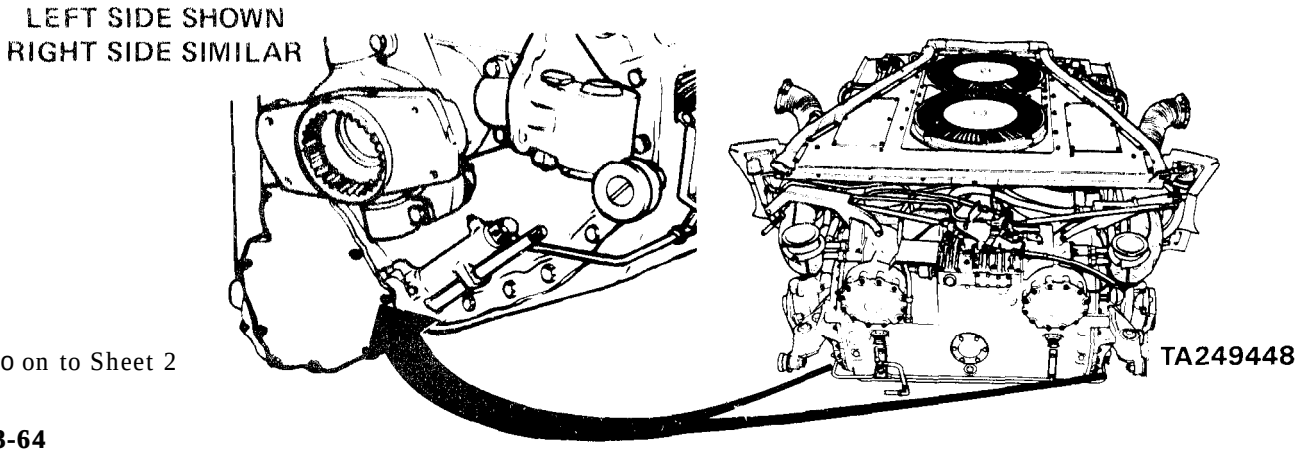
SUPPLIES:
- Cotter pins (two)
- Gasket
- Preformed packings (6 required)
- Dry cleaning solvent (Item 55, Appendix D)
- Shims
- Rags (Item 65, Appendix D)
- Stud
- Lockwashers
- Gloves (Item 69, Appendix D)
- Goggles (Item 70, Appendix D)

PRELIMINARY PROCEDURES:
- Remove powerplant (page 5-2)
- Remove slave cylinders (pages 13-54, 13-58) (as applicable)

REMOVAL:

NOTE

Clean all parts and general area prior to disassembly

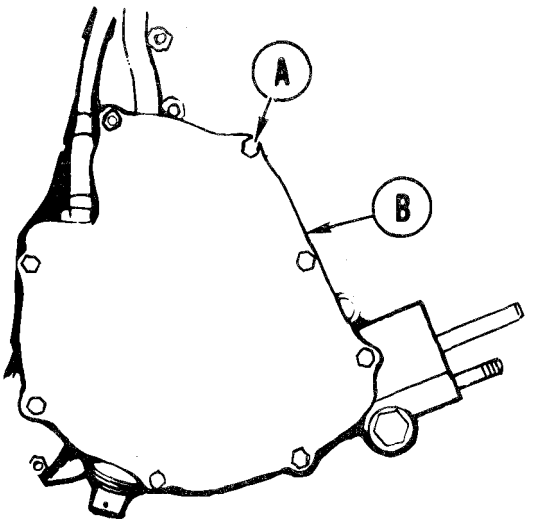


Go on to Sheet 2

BRAKE CONTROL HOUSING REPAIR (Sheet 2 of 14)

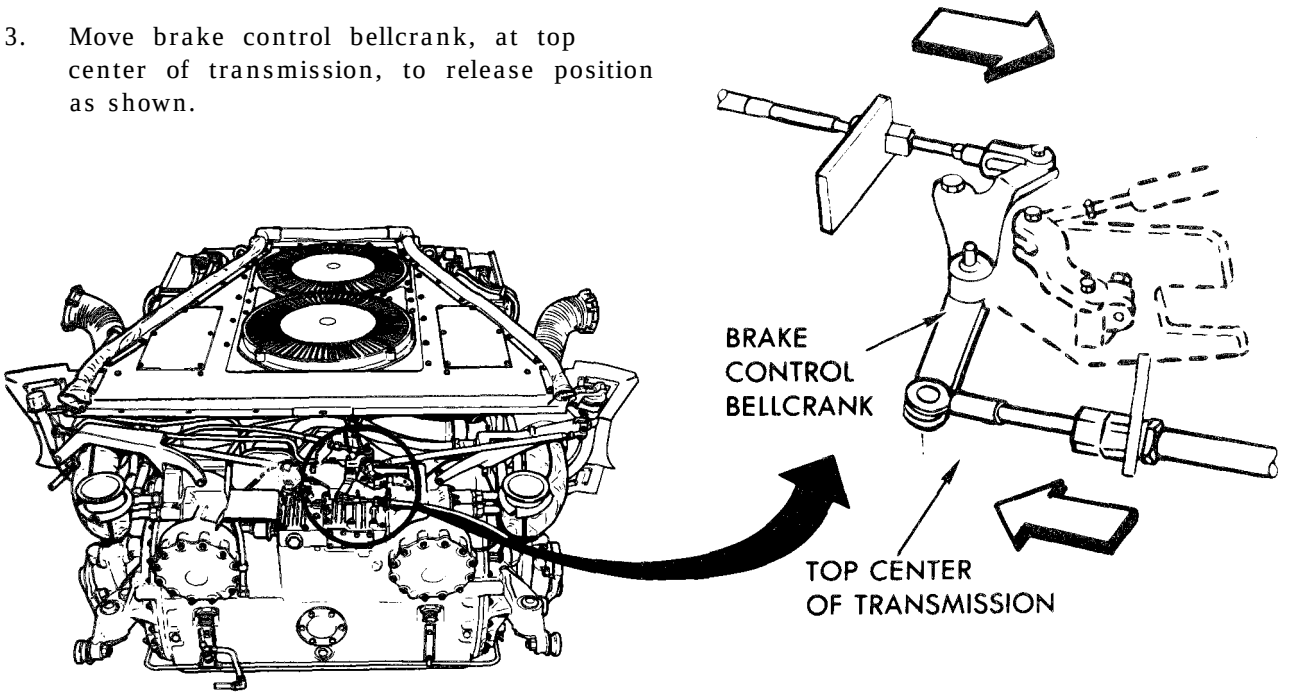
NOTE

This task is for left hand brake control housing. Procedure for right hand housing is exactly the same.



1. Using 7/16 inch socket, remove eight nuts and lockwashers (A).
2. Remove cover and gasket (B). Throw gasket away.

3. Move brake control bellcrank, at top center of transmission, to release position as shown.



TA249449

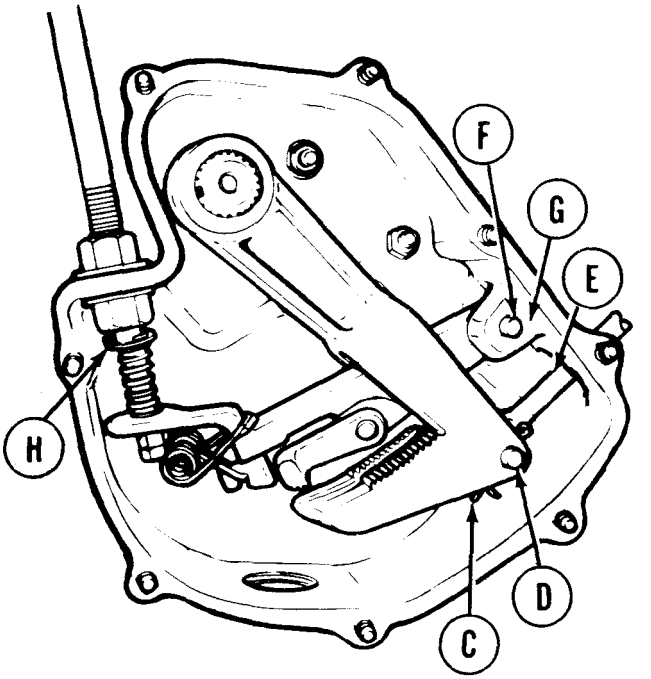
BRAKE CONTROL HOUSING REPAIR (Sheet 3 of 14)

4. Using pliers, remove cotter pin (C).

5. Remove pin (D) by pulling out. Remove push rod (E).

6. Using pliers, pull pin (F) from housing clevis (G).

7. Using pliers, remove cotter pin (H).

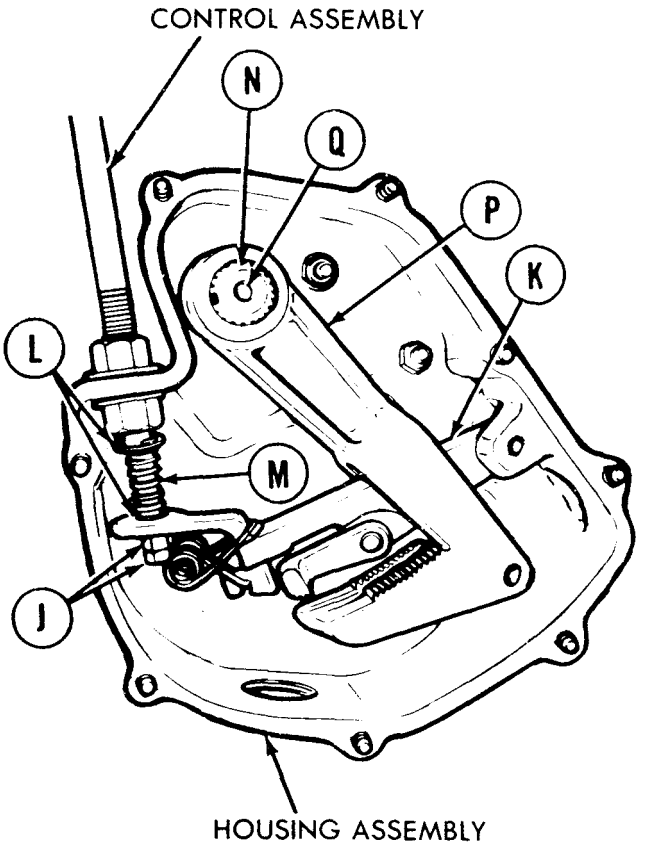


8. Using two 9/16 inch wrenches, remove two nuts (J) by removing lower nut first while holding upper one.

9. Move lever assembly (K) clear of control assembly and remove two washers (L) and spring (M).

10. Using retaining ring pliers, remove snap ring (N).

11. Slide lever (P) off shaft (Q) and remove lever (P) and lever assembly (K) with attached parts from control housing.



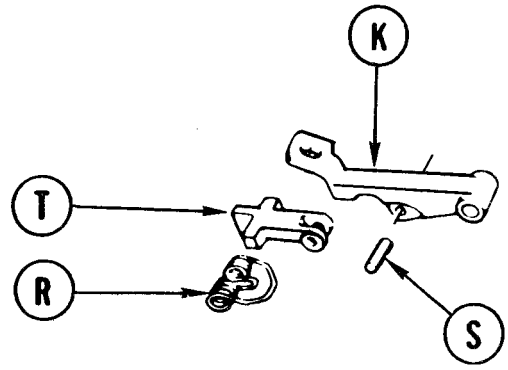
TA249450

Go on to Sheet 4

BRAKE CONTROL HOUSING REPAIR (Sheet 4 of 14)

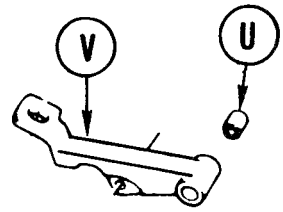
12. Remove spring (R) from lever assembly (K).

13. Place lever assembly (K) in a vise.

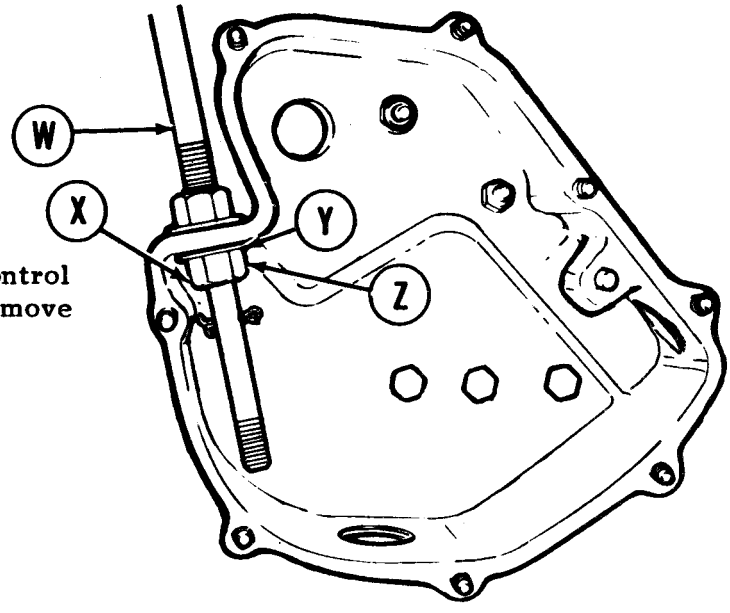


14. Using 1/4 inch punch and hammer, drive out pin (S) and remove pawl (T).

15. Using 1/2 inch punch and hammer, drive bearing (U) out of lever (V).



16. Using 9/16 inch wrench on flats of control assembly (W) and 7/8 inch wrench, remove nut (X) packing with retainer (Y) and packing (Z) (inside nut) from control assembly (W). Throw packings away.



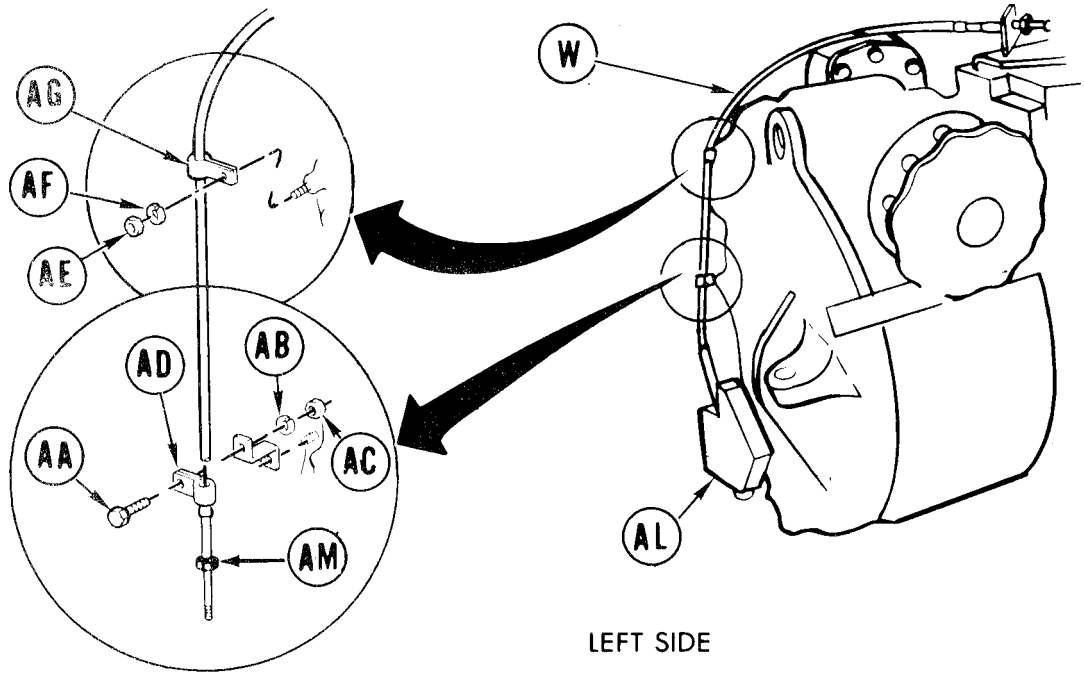
TA249451

Go on to Sheet 5

BRAKE CONTROL HOUSING REPAIR (Sheet 5 of 14)

NOTE

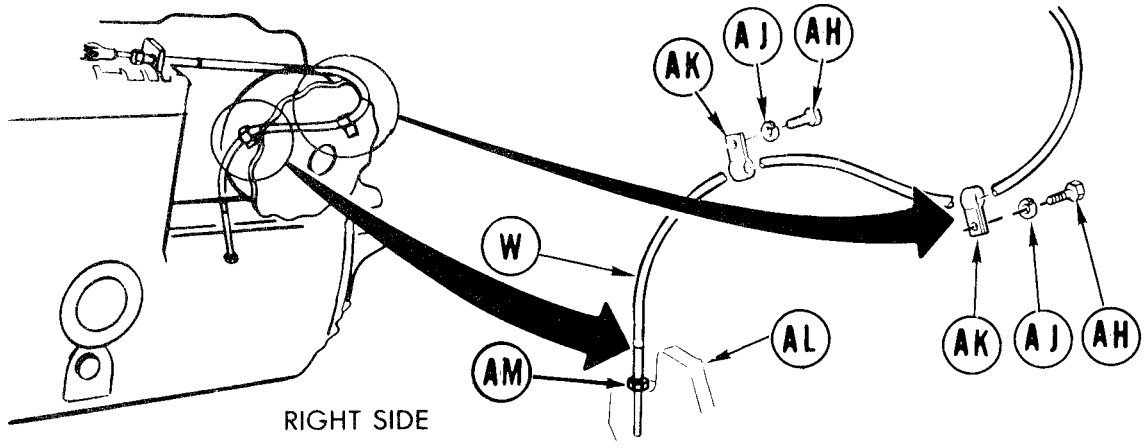
If left control cable is to be removed, perform steps 17 and 18. For right control cable perform step 19.



LEFT SIDE

17. Using 7/16 inch socket, remove screw (AA), lockwasher (AB), and nut (AC) releasing clamp (AD).

18. Using 3/4 inch socket and extension, remove nut (AE) and washer (AF) releasing clamp (AG).



RIGHT SIDE

19. Using 3/4 inch socket, remove two screws (AH) and washers (AJ) releasing clamps (AK).

20. Pull control assembly (W) from housing assembly (AL).

21. Using 9/16 inch wrench on flats of control assembly (W), use 15/16 inch wrench and remove nut (AM).

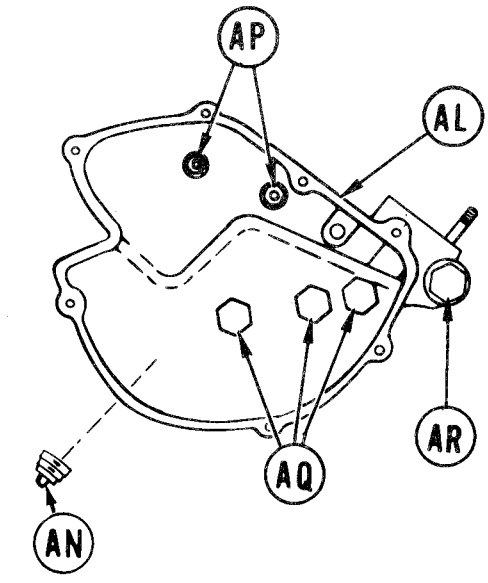
Go on to Sheet 6

TA249452

BRAKE CONTROL HOUSING REPAIR (Sheet 6 of 14)

22. Using 15/16 inch wrench, remove plug (AN).

23. Using 9/16 inch socket with extension, remove two nuts, lockwashers, and flat washers (AP).



NOTE

Shims are located between housing assembly (AL) and transmission on bolts (AQ and AR), be careful when removing control housing so as not to lose shims.

24. Using 15/16 inch socket and extension, remove three bolts and packings (AQ) (under head) and bolt (AR). Throw packings away.

25. Remove housing assembly (AL) and shims (AS).

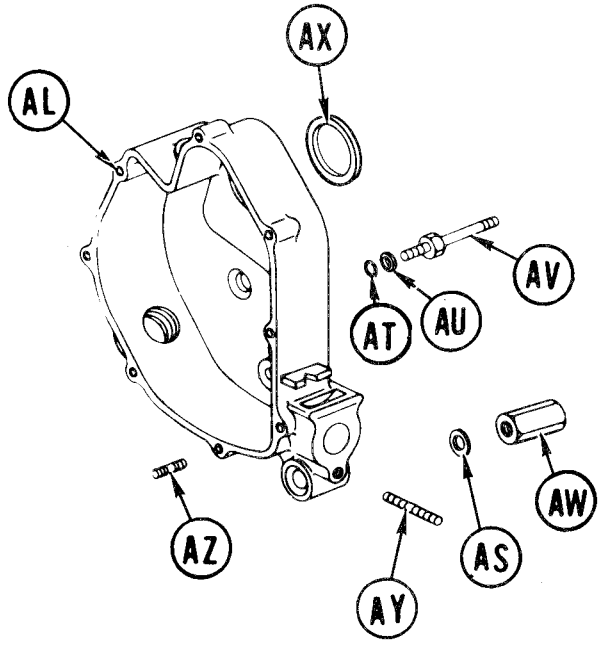
26. Remove two packings (AT) and shims (AU). Throw packings away.

27. Using 9/16 inch deep well socket, remove two studs (AV).

28. Using 3/4 inch socket, remove four spacer nuts (AW).

29. Remove gasket (AX). Throw gasket away.

30. Remove stud (AY) and eight studs (AZ).



Go on to Sheet 7

TA249453

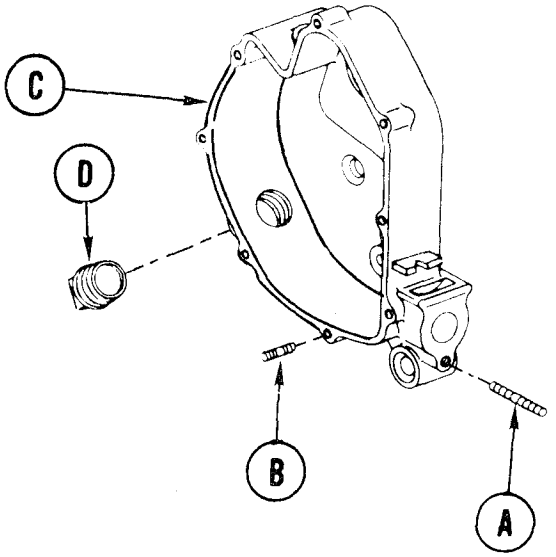
BRAKE CONTROL HOUSING REPAIR (Sheet 7 of 14)

CLEANING AND INSPECTION:

WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. To prevent personal injury, wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point for Type #1 Dry Cleaning Solvent is 100°F (38°C) and for Type #2 is 138°F (50°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

1. Clean all metallic parts in dry cleaning solvent.
2. Inspect all parts for damage or wear.
3. Replace all unserviceable parts.

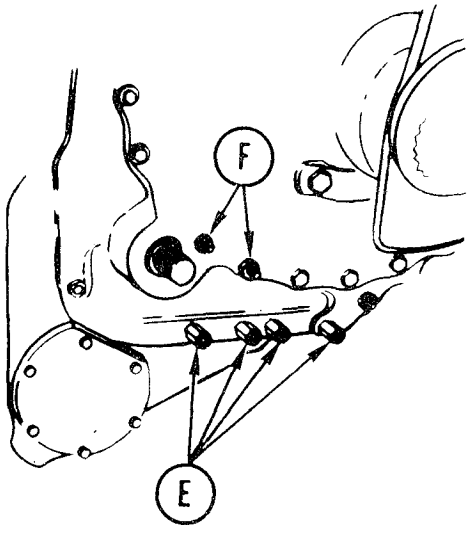


INSTALLATION:

1. Install stud (A) and eight studs (B) in housing assembly (C).
2. Using 15/16 inch wrench, install plug (D) in housing assembly (C).

NOTE

If new transmission has been installed, remove four nuts and lockwashers from spacer nut (E) locations, and two screws and lockwashers from stud (F) locations.



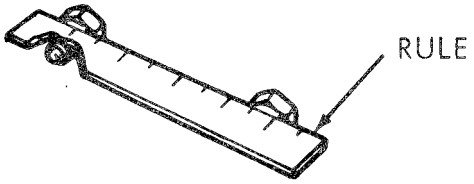
3. Using 9/16 inch deep well socket, install two studs (F). Using 9/16 inch socket and torque wrench, tighten to 20-25 lb-ft (27-34 N·m).
4. Using 3/4 inch socket, install four spacer nuts (E). Using 3/4 inch socket and torque wrench, tighten to 55-60 lb-ft (74-81 N·m).

Go on to Sheet 8

TA249454

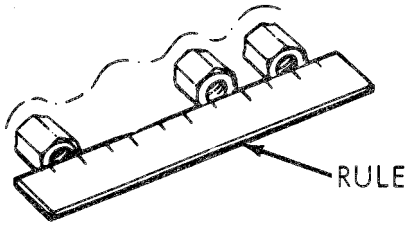
BRAKE CONTROL HOUSING REPAIR (Sheet 8 of 14)

5. Using rule, check that top surface of hex on stud (F) (the one closest to brake shaft) stands out beyond transmission cover surface.



NOTE

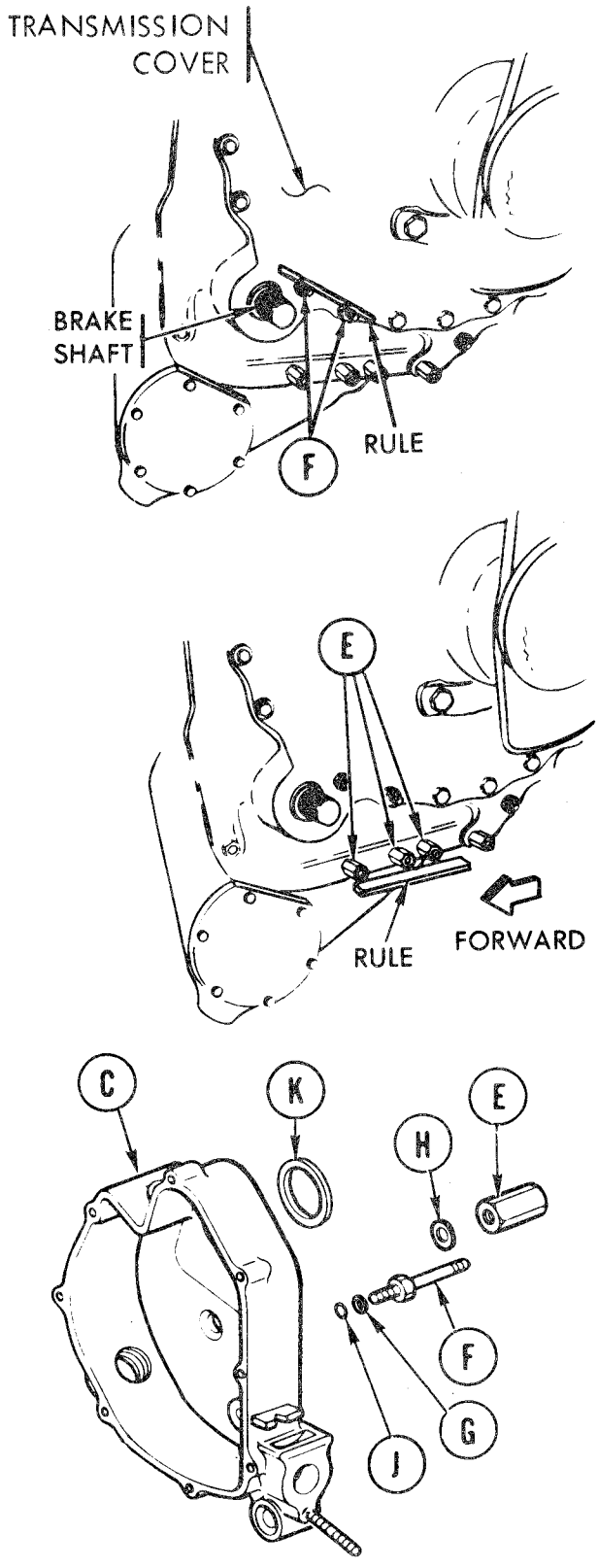
If hex of stud (F) (the one closest to brake shaft) does not stand out beyond transmission cover surface, add shims (G). If shims are added, an equal number should be added to the other stud (F) (the one farthest from brake shaft).



6. Using rule, check that end surfaces of three forward spacer nuts (E) are equal in height. If they are not, add shims (H) as necessary between spacer nuts (E) and housing assembly (C).

7. Place shim (G) and new packing (J) on each stud (F).

8. Position new gasket (K) in groove of housing assembly (C).



TA249455

Go on to Sheet 9

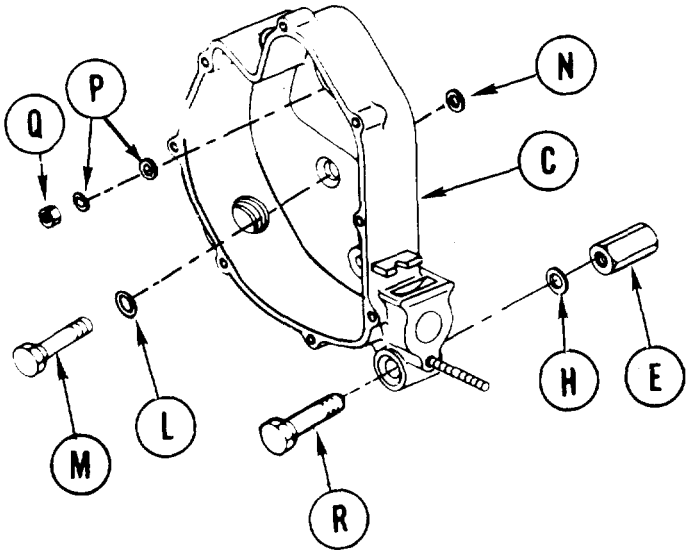
BRAKE CONTROL HOUSING REPAIR (Sheet 9 of 14)

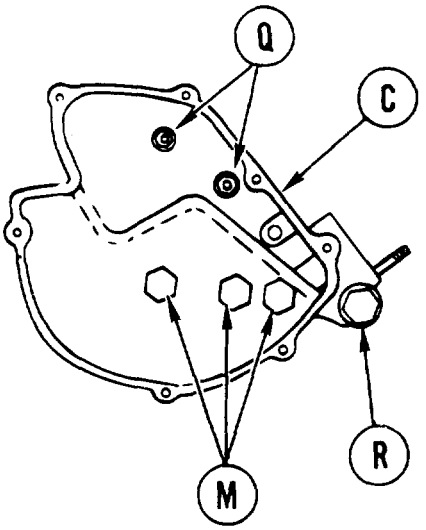
9. Place new packings (L) on three bolts (M) and insert bolts in housing assembly (C).

10. Place one shim (N) on each bolt (M) (on back side of brake housing (C)) in addition to any shims added in step 6.

11. Carefully position housing assembly (C) on transmission and start each bolt (M). Tighten finger tight.

12. Place a flat washer and lockwasher (P) and nut (O) on each of two studs. Tighten finger tight.





13. With housing assembly (C) firmly positioned, insert as many shims (H) as necessary to fill gap between brake housing and spacer nut (E).

14. Insert bolt (R) (no packing under head) and tighten finger tight.

15. Using torque wrench, extension, and 9/16 inch socket, tighten two nuts (Q) to 20-25 lb-ft (27-34 N.m).

16. Using torque wrench, extension and 15/16 inch socket, tighten three bolts (M) to 55-60 lb-ft (74-81 N.m). Tighten bolt (R) to 20-25 lb-ft (27-34 N.m).

Go on to Sheet 10

TA249456

BRAKE CONTROL HOUSING REPAIR (Sheet 10 of 14)

17. Using vise and brass jaw caps press bearing (S) into lever (T).

18. Position lever (U) assembly on pawl (V) and start pin (W) through pawl and lever assembly. Position in vise and press pin through.

19. Place large loop of spring (X) over end of lever assembly (U) and other loop over end of pawl (V).

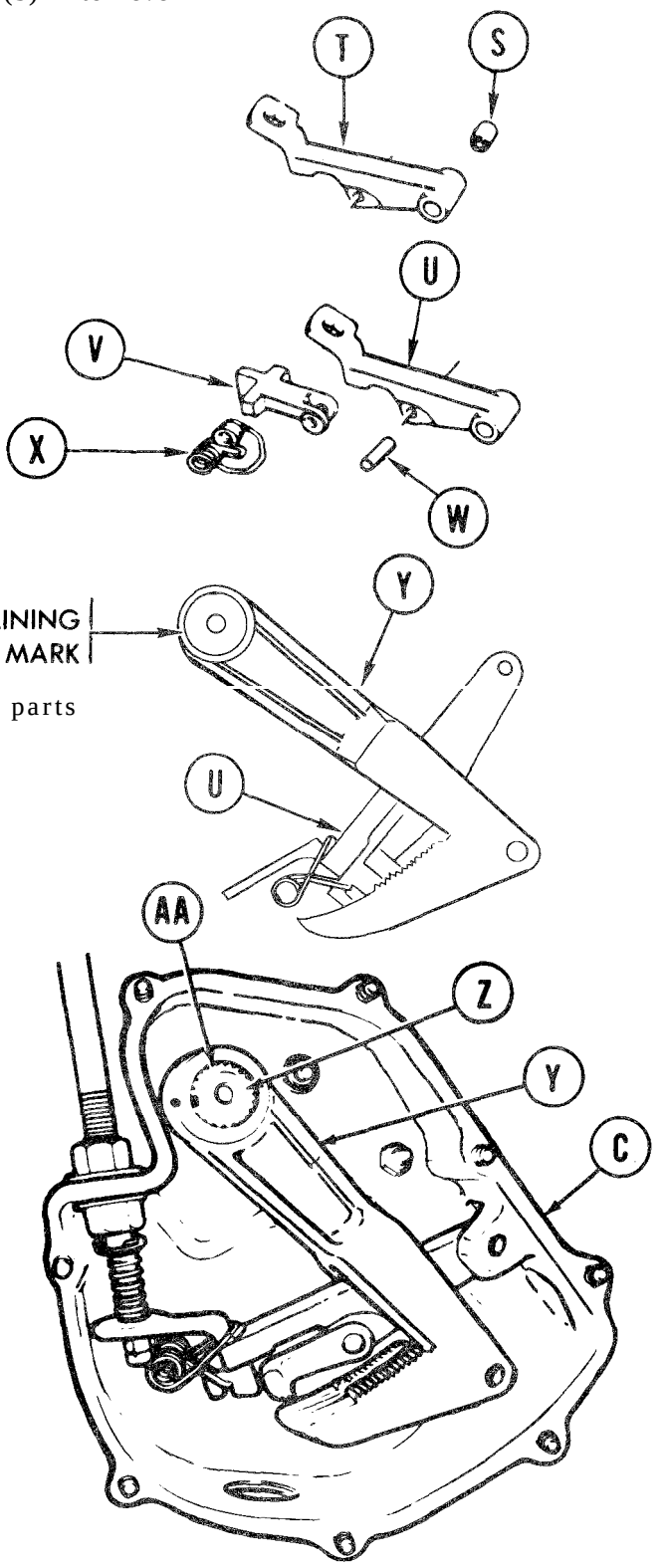
20. Insert lever assembly (U) with its attached parts through cut out in lever (Y).

NOTE

When installing lever (Y) in housing assembly (C) make sure alining mark (dot) on lever (Y) is in line with wide slot in shaft (Z).

21. Slide lever (Y) with its assembled parts on shaft (Z).

22. Using retaining ring pliers, install snap ring (AA) in groove of shaft (Z).



TA249457

Go on to Sheet 11

BRAKE CONTROL HOUSING REPAIR (Sheet 11 of 14)

23. Insert push rod (AB) through hole in housing and position in clevis of lever (Y).

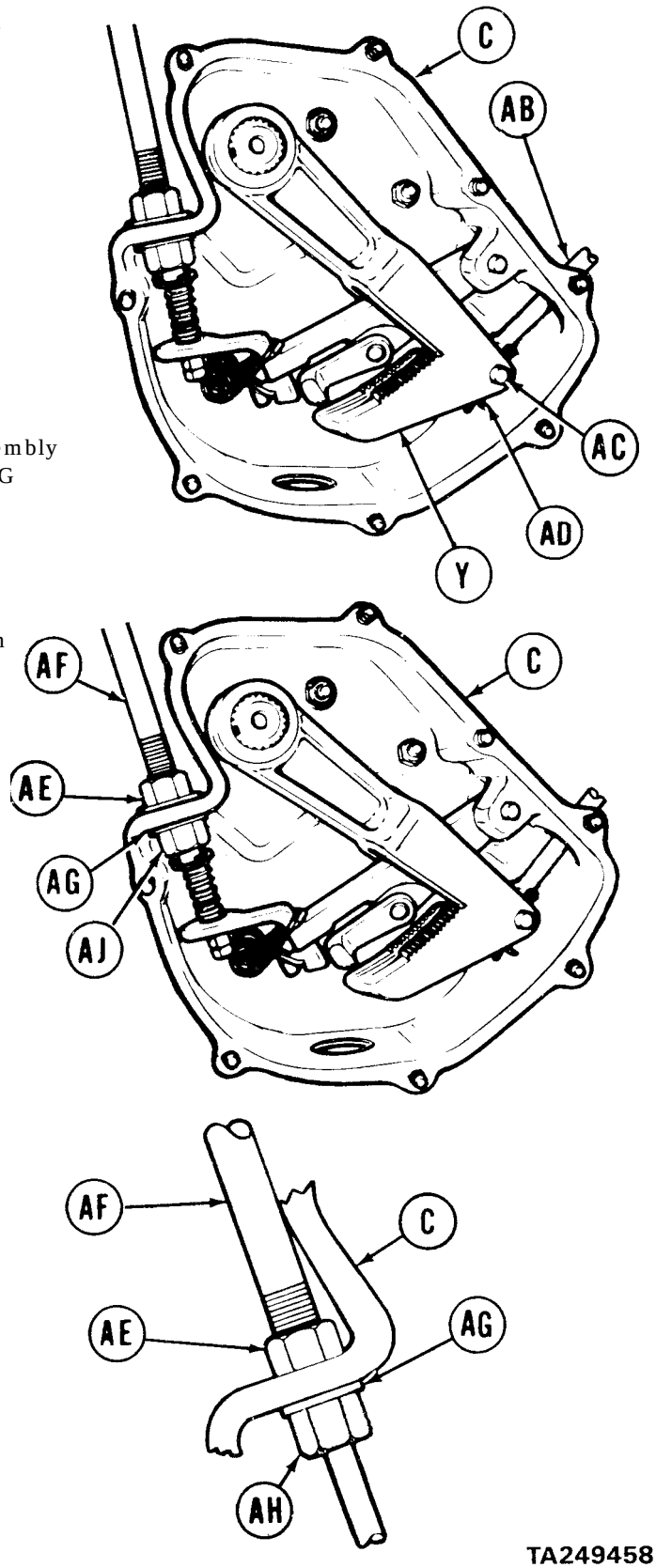
24. Insert pin (AC) and, using pliers, install cotter pin (AD).

25. Thread nut (AE) all the way on control assembly (AF) to provide enough threads for parts (AG thru AJ).

26. Insert end of control assembly (AF) through hole of housing assembly (C).

27. Place new packing with retainer (AG) on control assembly (AF).

28. Thread nut (AN) on control assembly (AF) and tighten finger tight.



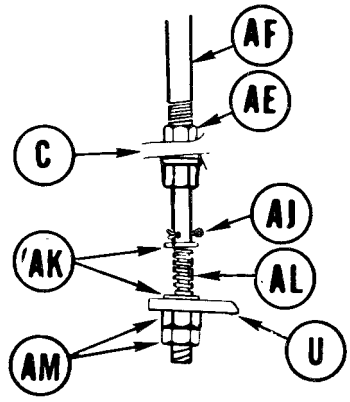
TA249458

Go on to Sheet 12

BRAKE CONTROL HOUSING REPAIR (Sheet 12 of 14)

29. Using a 9/16 inch wrench on flats of control assembly (AF) and a 15/16 inch wrench on nut (AE), tighten nut.

30. Using pliers, install cotter pin (AJ).

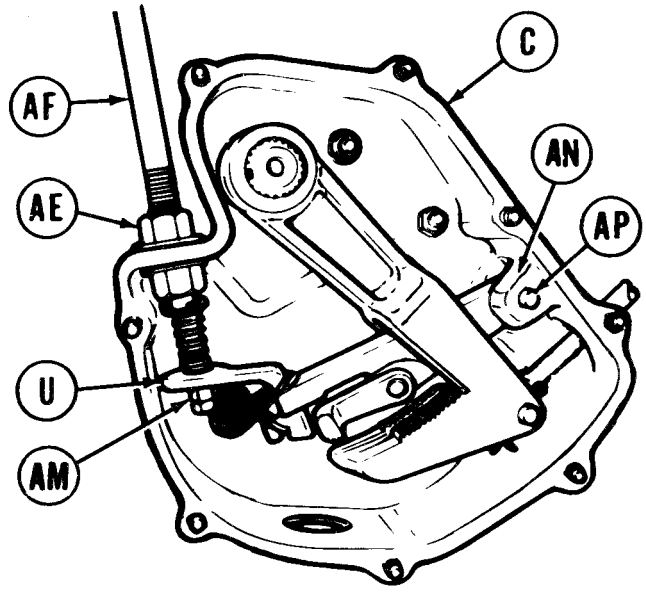


31. Position two washers (AK) and spring (AL) on control assembly (AF).

32. Position lever assembly (U) on control assembly (AF) and thread two nuts (AM) on control assembly finger tight.

NOTE

Do not tighten nuts (AM). They will be tightened during adjustment procedure.



35. Position lever assembly (U) in housing clevis (AN) and, using pliers, insert pin (AP).

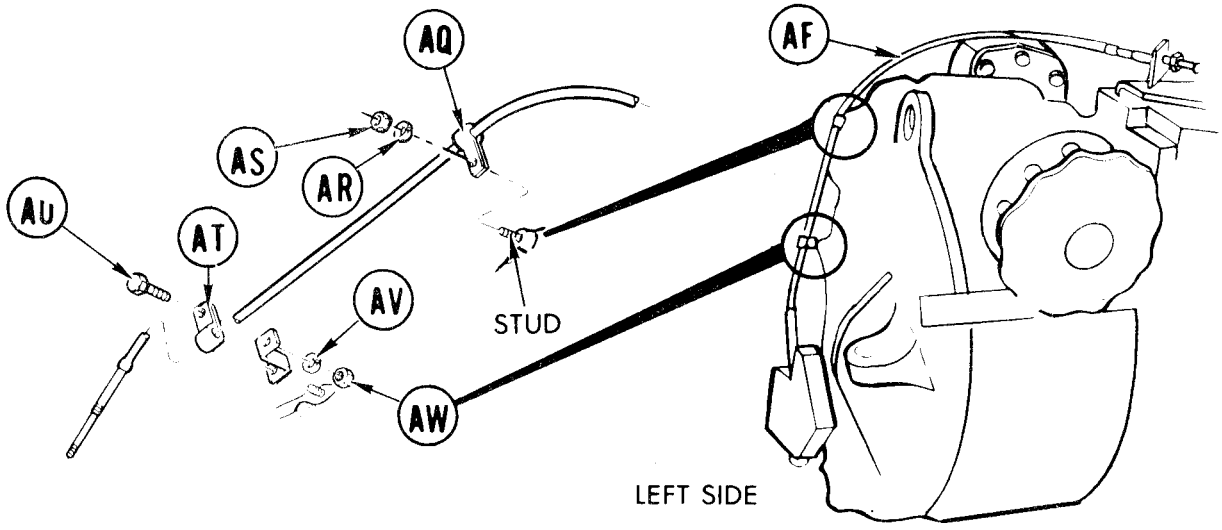
Go on to Sheet 13

TA249459

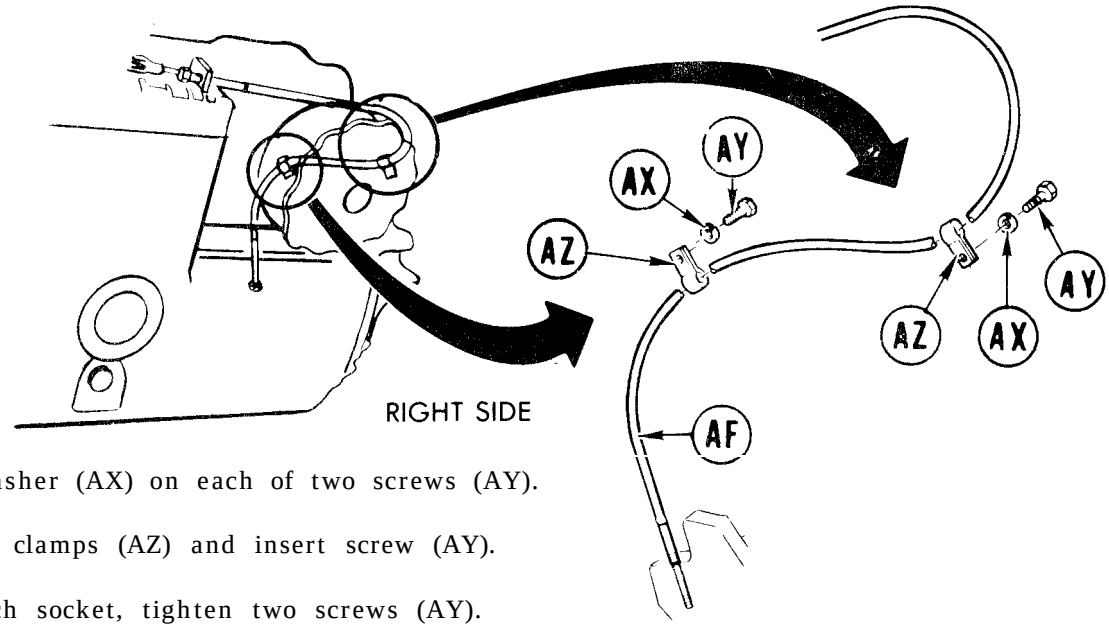
BRAKE CONTROL HOUSING REPAIR (Sheet 13 of 14)

NOTE

If left control cable (AF) was removed, perform steps 34 thru 38.
For right control cable perform steps 39 thru 41.



34. Position clamp (AQ) on stud, add lockwasher (AR) and nut (AS) and tighten fingr tight.
35. Using 3/4 inch socket and extension, tighten nut (AS).
36. Position clamp (AT) and insert screw (AU).
37. Place lockwasher (AV) and nut (AW) on screw (AU) finger tight.
38. Using 7/16 inch socket, tighten screw (AU).



39. Place lockwasher (AX) on each of two screws (AY).
40. Position two clamps (AZ) and insert screw (AY).
41. Using 3/4 inch socket, tighten two screws (AY).

Go on to Sheet 14

TA249460

BRAKE CONTROL HOUSING REPAIR (Sheet 14 of 14)

42. Perform parking brake adjustment (page 13-130).

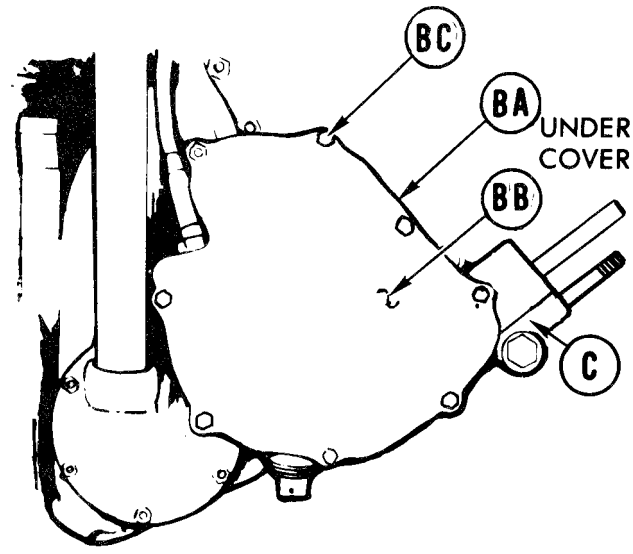
43. Position new gasket (BA) and install cover (BB) on studs of housing assembly

44. Install eight lockwashers and nuts (BC)

45. Using 7/16 in. socket and torque wrench, tighten nuts (BC) to 6-9 lb-ft (8-12 N.m).

46. Install slave cylinder (pages 13-56, 13-61) (as applicable).

47. Install powerplant (page 5-14).



End of Task

TA249461

BRAKES ADJUSTMENT (Sheet 1 of 8)

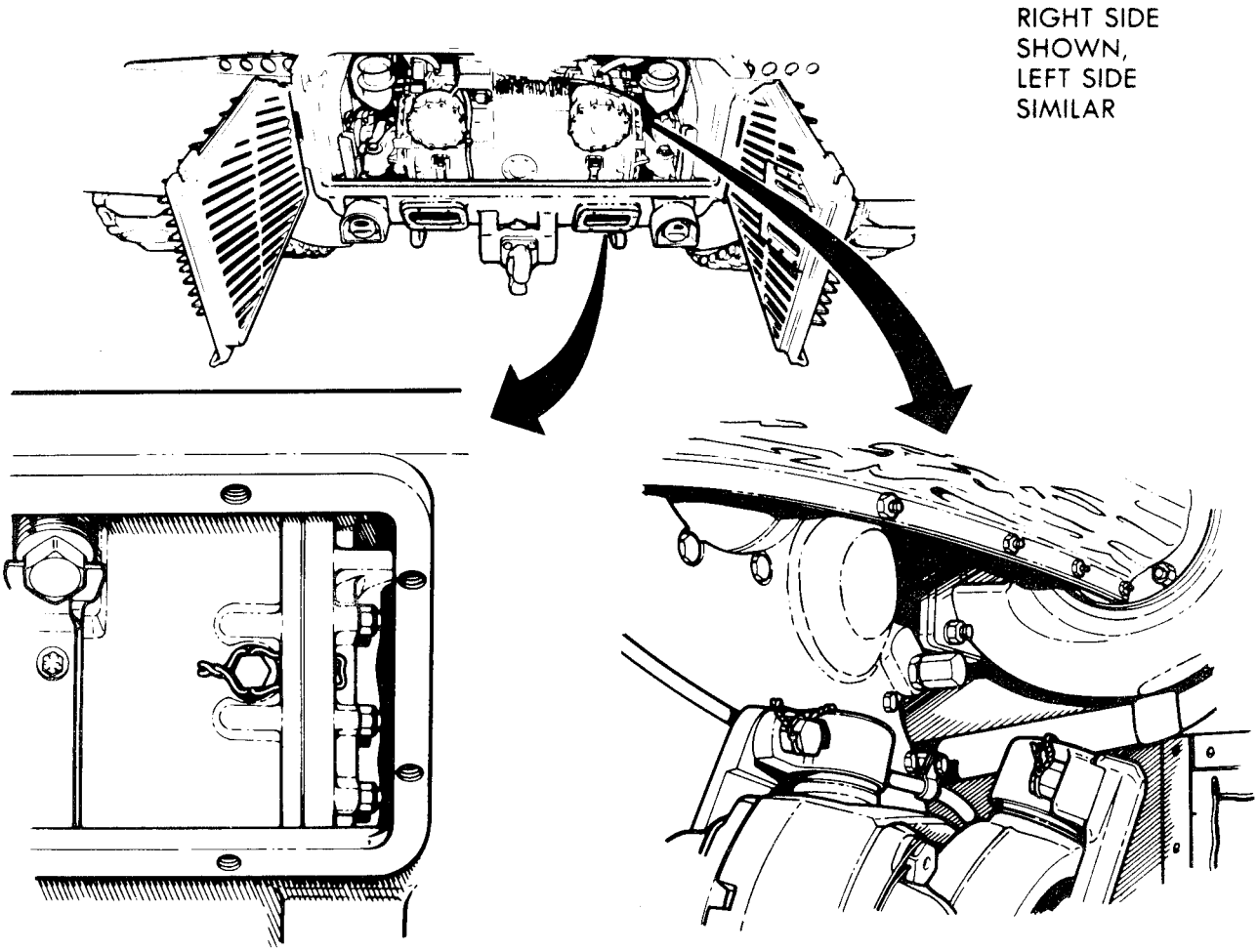
TOOLS: 7/16 in. combination box and open end wrench
15/16 in. combination box and open end wrench
7/8 in. combination box and open end wrench
Diagonal cutting pliers
1 in. combination box and open end wrench
Slip joint pliers

SUPPLIES: Lockwire (Item 61, Appendix D)
Gaskets (two required)

PERSONNEL: Two

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Block vehicle tracks (TM 5-5420-202-10)
Place transmission in "N" neutral (TM 5-5420-202-10)
Remove transmission shroud (page 9-2)
Remove rear transmission access covers (page 16-34)



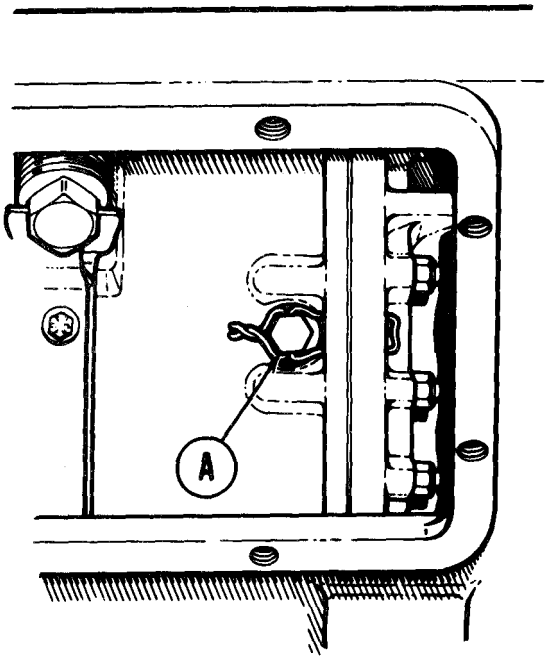
Go on to Sheet 2

TA249462

BRAKES ADJUSTMENT (Sheet 2 of 8)

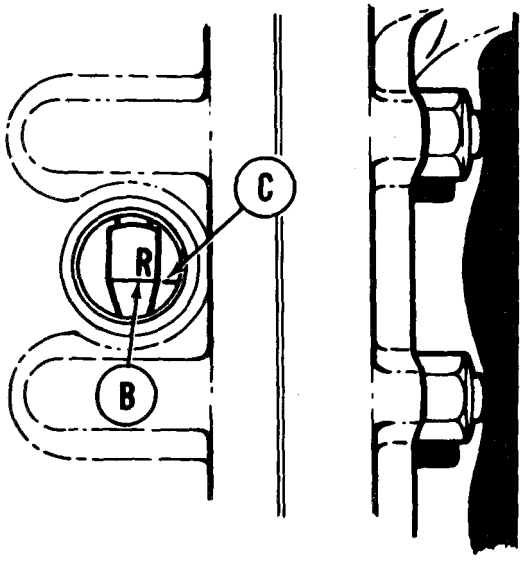
NOTE

Both right and left brakes must be adjusted. Left brake adjustment is located equally opposite right brake adjustment on transmission.



1. Using pliers, cut two locking wires holding two brake inspection hole plugs (A). Remove locking wires.

2. Using 7/8 inch wrench, remove two brake inspection hole plugs and gaskets (A).



3. Check whether index line (B) marked R and index mark (C) are lined up.

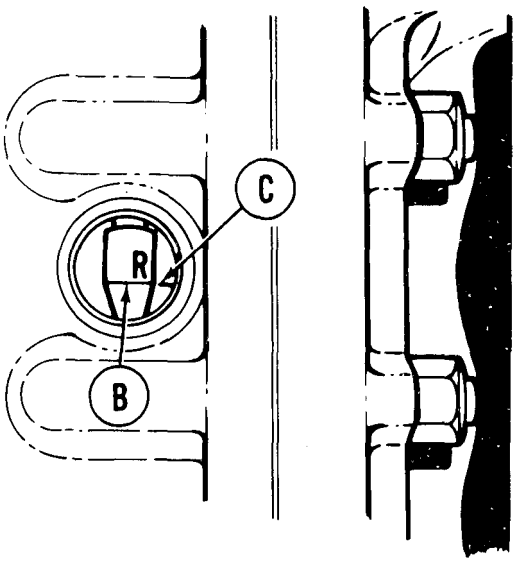
Go on to Sheet 3

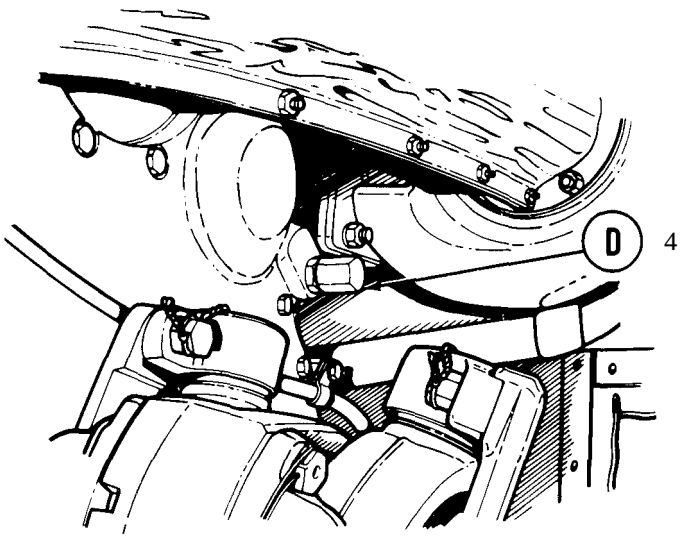
TA249463

BRAKES ADJUSTMENT (Sheet 3 of 8)

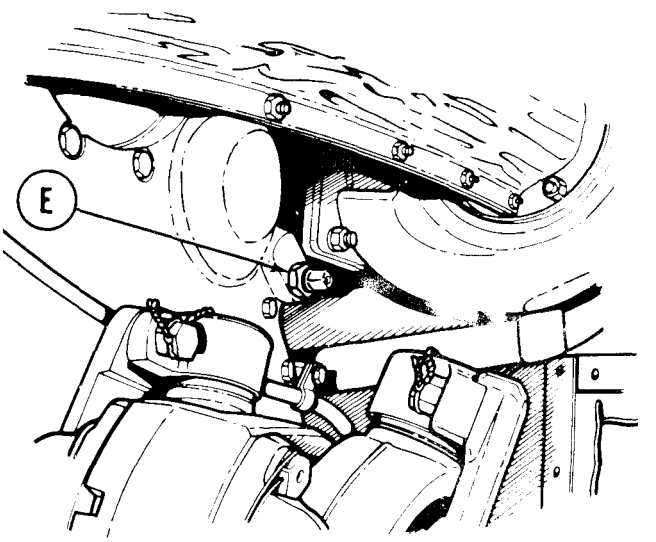
NOTE

If index line (B) marked R, and index mark (C) are lined up, skip step 4 and go to step 10. If they are not lined up, go to step 4.





4. Using 1 inch wrench, remove brake adjusting worm cap (D).



5. Using 15/16 inch wrench, loosen locknut (E).

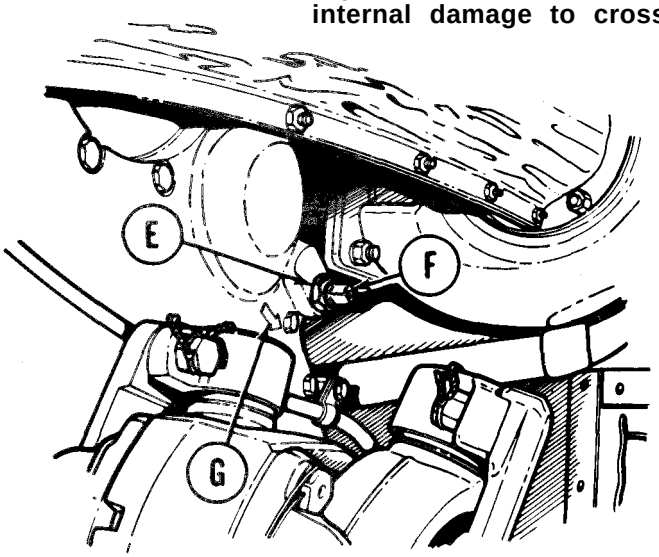
Go on to Sheet 4

TA249464

BRAKES ADJUSTMENT (Sheet 4 of 8)

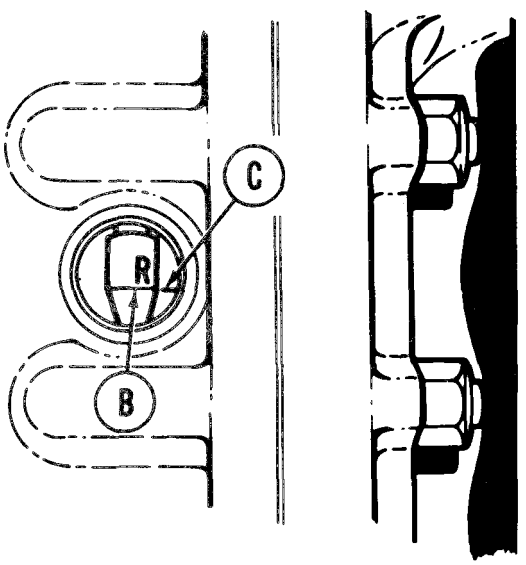
CAUTION

Make sure brakes are fully released before making brake adjustment. Failure to fully release brakes can cause internal damage to cross-drive transmission.



6. Using 7/16 inch wrench, turn brake adjusting worm (F) about 25 turns in opposite direction of arrow (G) on transmission end cover (right side, turn clockwise; left side, turn counterclockwise).

7. Using 7/16 inch wrench, attempt to line up index line (B) marked R with index mark (C) by turning brake adjustment worm (F) in direction of arrow (G) on transmission end cover (right side, turn counterclockwise; left side, turn clockwise).



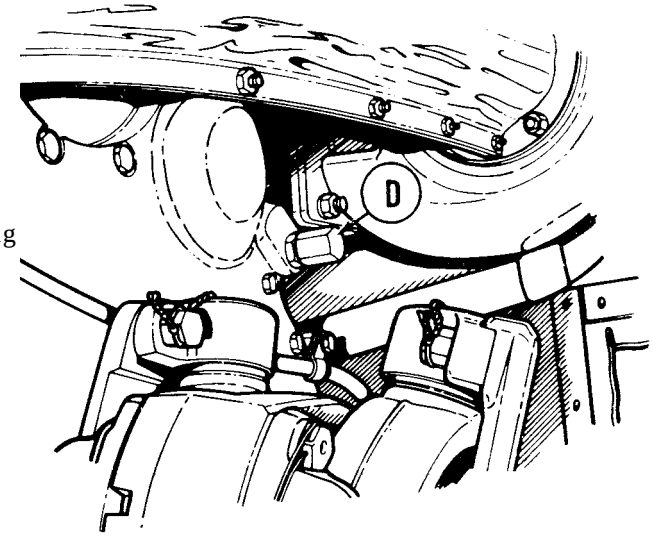
8. If index line (B) marked R, and index mark (C) are lined up, using 7/16 inch wrench, hold brake adjusting worm (F). Using 15/16 inch wrench, tighten locknut (E).

NOTE

If index line (B) marked R, and index mark (C) are not lined up, notify supervisor that brakes require higher level maintenance.

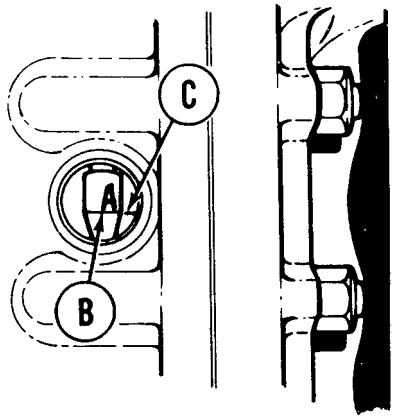
TA249465

BRAKES ADJUSTMENT (Sheet 5 of 8)



9. Using 1 inch wrench, install brake adjusting worm cap (D).

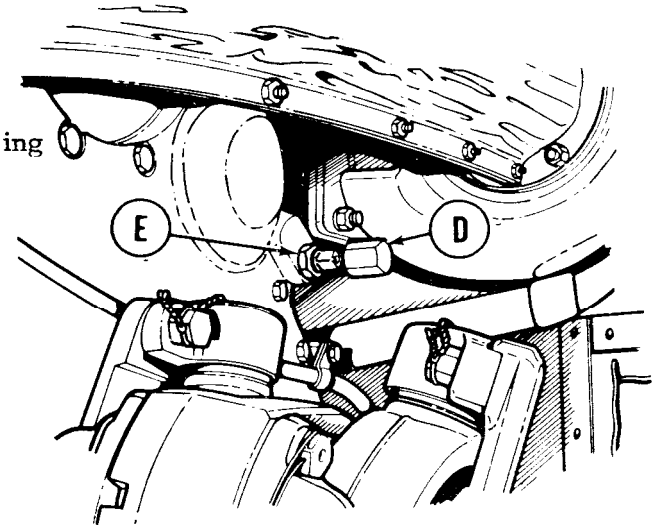
10. Fully apply brakes (TM 5-5420-202-10).



11. Check whether index line (B) marked A and index mark (C) are lined up.

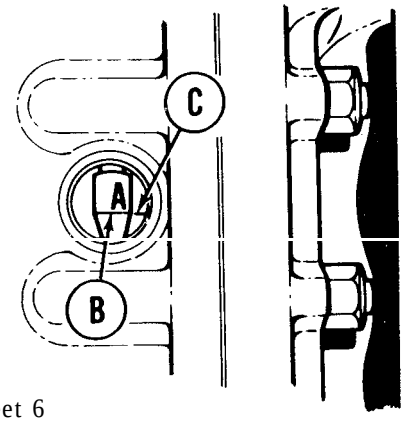
12. If index line (B) marked A and index mark (C) are lined up within 1/64 inch, brakes are adjusted. Release brakes and go to step 24.

13. If index line (B) marked A and index mark (C) are not lined up within 1/64 inch, release brakes and go to step 14.



14. Using 1 inch wrench, remove brake adjusting worm cap (D).

15. Using 15/16 inch wrench, loosen locknut (E).

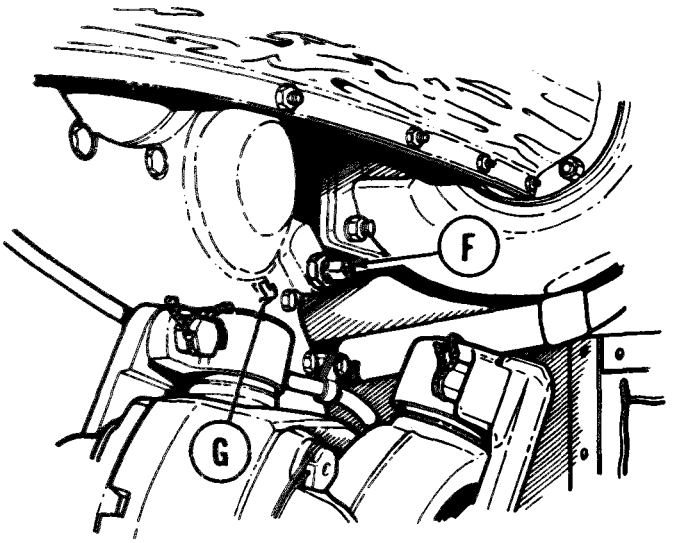


16. Fully apply brakes (TM 5-5420-202-10). If index line (B) marked A moves past index mark (C), brake is too loose.

Go on to Sheet 6

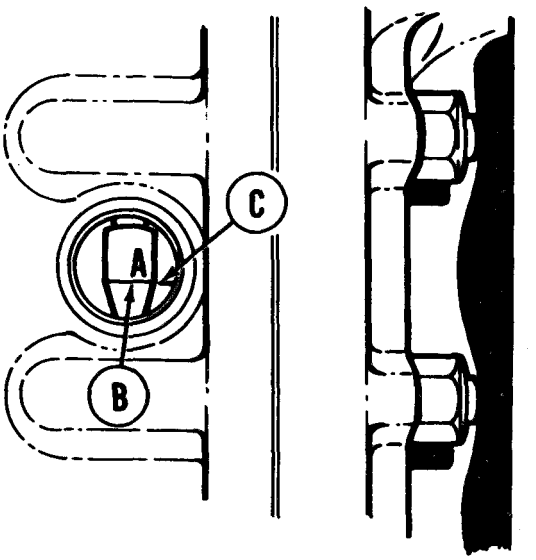
TA249466

BRAKES ADJUSTMENT (Sheet 6 of 8)



17. Release brakes.

18. Using 7/16 inch wrench, turn brake adjusting worm (F) in direction of arrow (G) on transmission end cover (right side, turn counterclockwise; left side, turn clockwise).



19. If index line (B) marked A does not move back to index mark (C), brake is too tight.

20. Using 7/16 inch wrench, turn brake adjusting worm (F) about 25 turns toward opposite direction of arrow (G) on transmission end cover (right side, turn clockwise; left side, turn counterclockwise).

NOTE

Always try to bring index line (B) marked A, and index mark (C) into line by turning brake adjusting worm (F) counterclockwise.

CAUTION

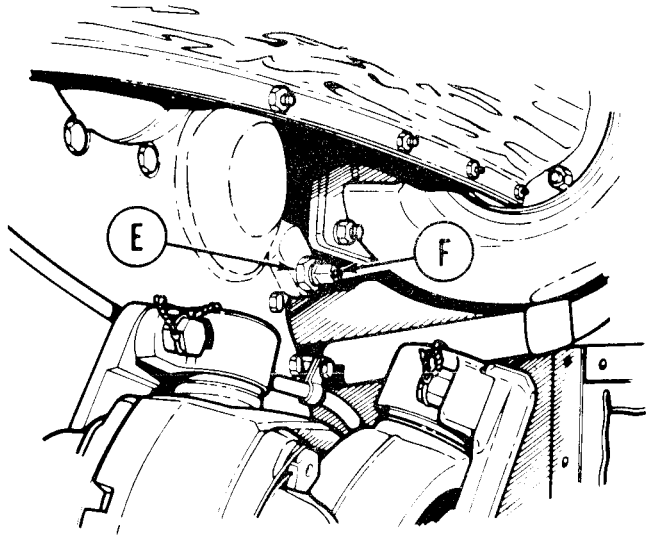
Always release brakes before making adjustments.

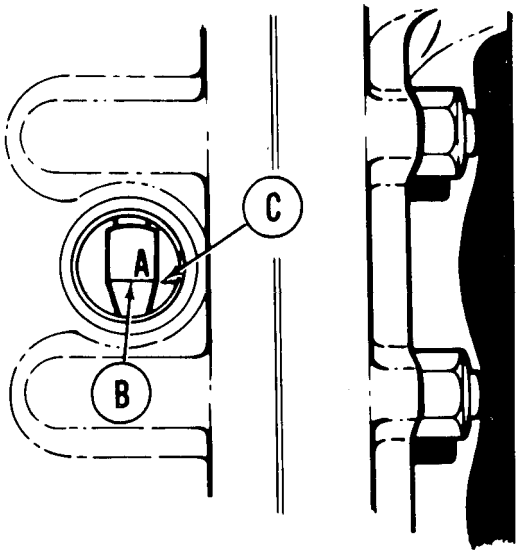
21. Using 7/16 inch wrench, turn brake adjusting worm (F) in direction of arrow (G) until index line (B) marked A, lines up with index mark (C) when brakes are applied.

TA249467

BRAKES ADJUSTMENT (Sheet 7 of 8)

22. When brakes have been adjusted, using 7/16 inch wrench, hold adjusting worm (F). Using 15/16 inch wrench, tighten locknut (E).

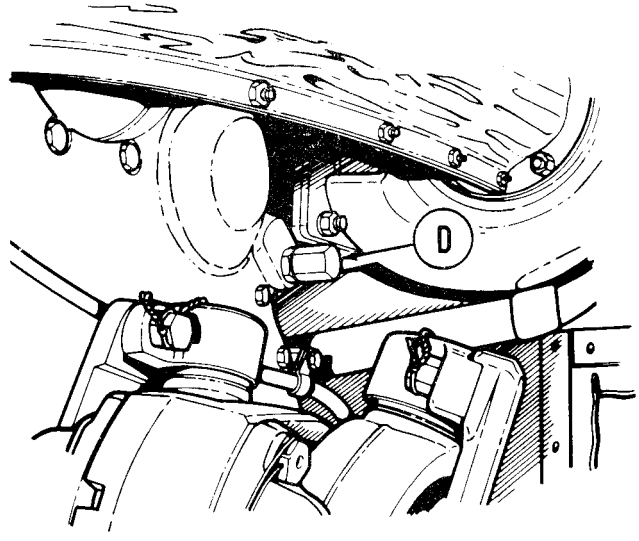




NOTE

If index line (B) marked A cannot be lined up with index mark (C) within 1/64 inch, notify supervisor that brakes require higher level maintenance.

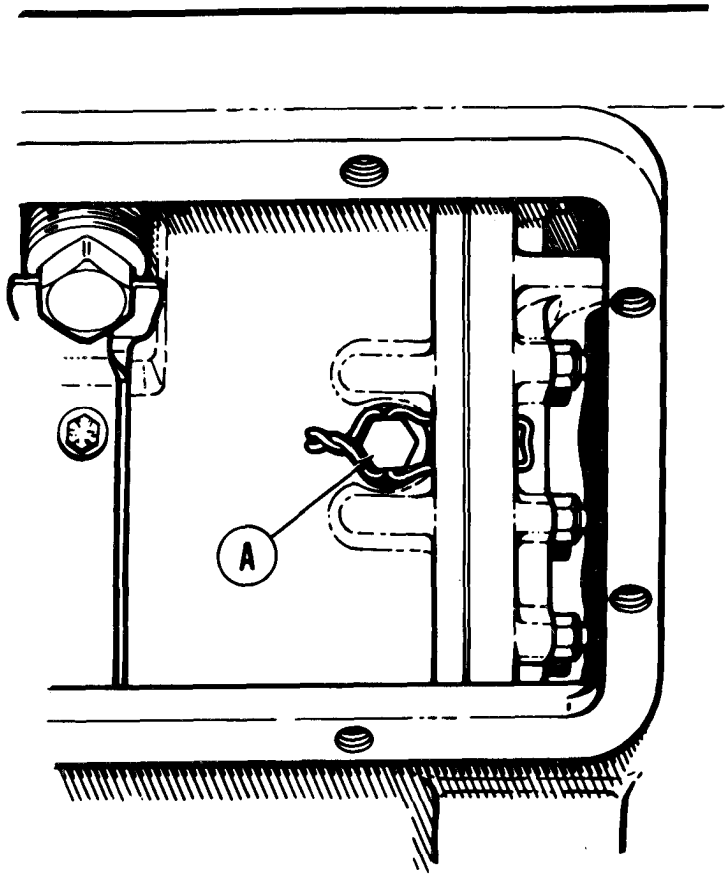
23. Using 1 inch wrench, install brake adjusting worm cap (D).



Go on to Sheet 8

TA249468

BRAKES ADJUSTMENT (Sheet 8 of 8)



24. Using 7/8 inch wrench, install two brake inspection hole plugs and gaskets (A).

25. Using pliers, install locking wire to two brake inspection hole plugs.

26. Install rear transmission access covers (page 16-42).

27. Install transmission shroud (page 9-6).

28. Place transmission in “P” park position and remove blocks from track (TM 5-5420-202-10).

29. Road test vehicle to check brake adjustment (TM 5-5420-202-10).

End of Task

TA249469

HYDRAULIC BRAKE SYSTEM BLEEDING (Sheet 1 of 4)

TOOLS: 1-1/8 in. open end wrench
3/8 in. open end wrench
3/4 in. open end wrench
Filler and bleeder (4910-00-273-3658)
9/16 in. open end wrench

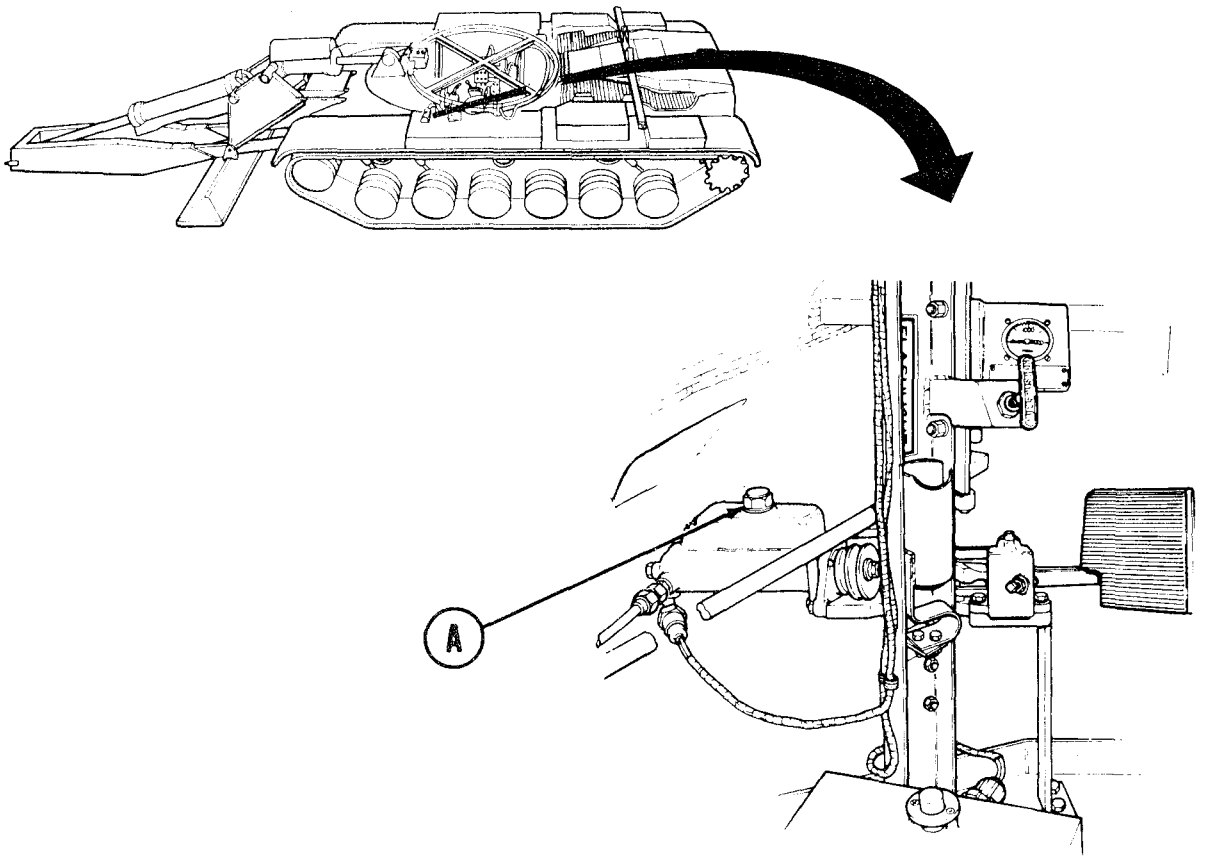
SUPPLIES: Brake fluid (Item 34, Appendix D)

PERSONNEL: Two

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Remove transmission shroud (page 9-2).

1. Block vehicle tracks to prevent movement (TM 5-5420-202-10).
2. Place transmission lever to neutral “N” (TM 5-5420-202-10).
3. Using 1-1/8 inch wrench, remove master cylinder filler cap (A).

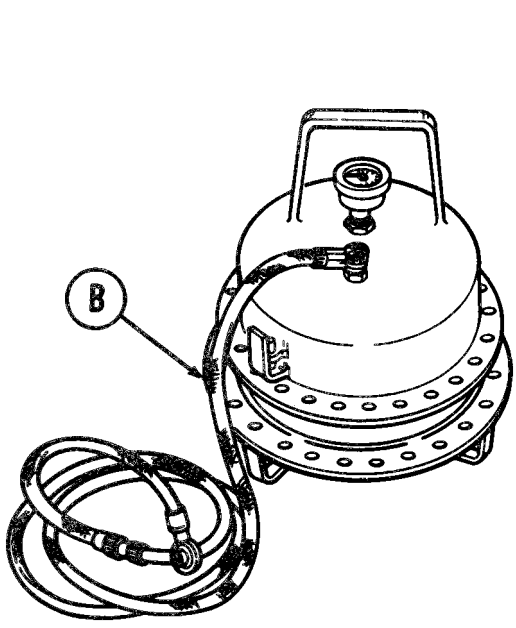


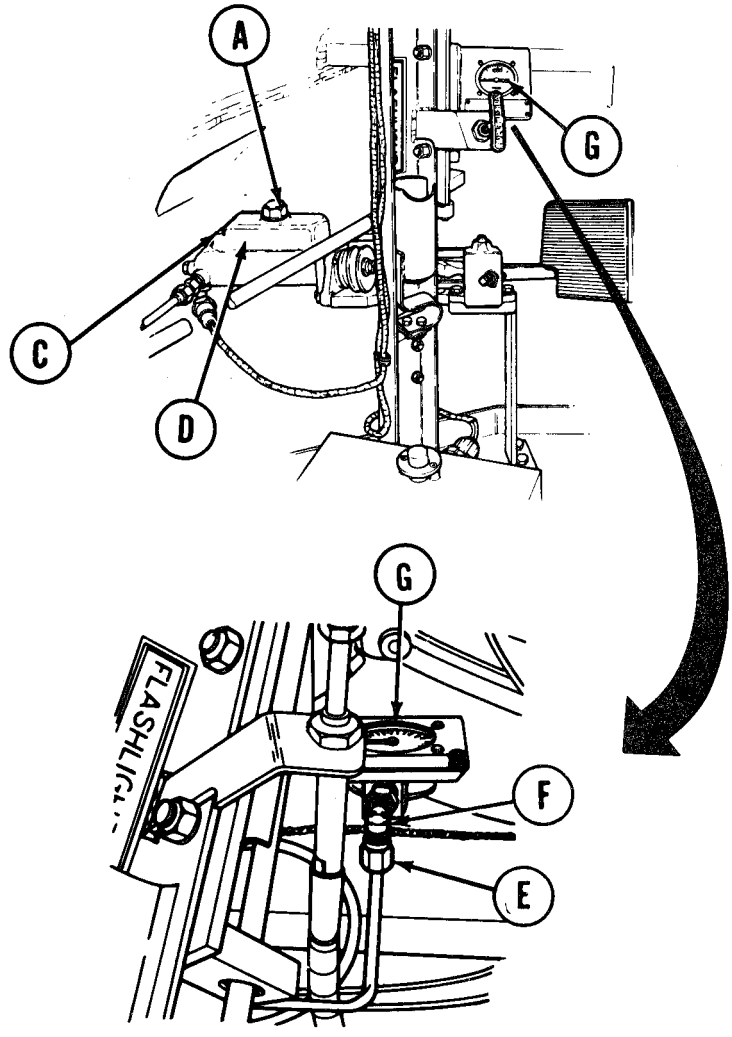
Go on to Sheet 2

TA249470

HYDRAULIC BRAKE SYSTEM BLEEDING (Sheet 2 of 4)

4. Connect the filler and bleeder hydraulic system (B) to filler cap (A) hole.





SIDE VIEW

NOTE

Filler and bleeder hydraulic system will maintain pressure and fill master cylinder with fluid.

5. Using 3/8 inch wrench, open bleeder valve (C) on master cylinder (D). Let hydraulic fluid run until no air bubbles are detected in hydraulic fluid. Close bleeder valve (C).

6. Using 9/16 inch wrench on nut (E) and 3/4 inch wrench on elbow (F), loosen nut (E) and bleed gage (G) until no air bubbles are observed in hydraulic fluid. Tighten nut (E) holding elbow (F).

Go on to Sheet 3

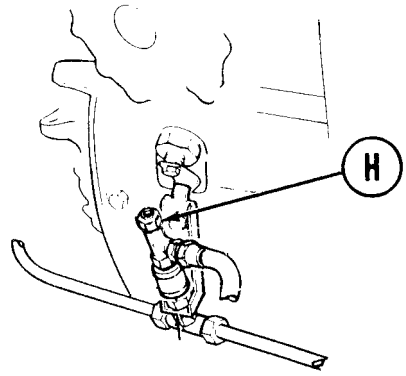
TA249471

HYDRAULIC BRAKE SYSTEM BLEEDING (Sheet 3 of 4)

NOTE

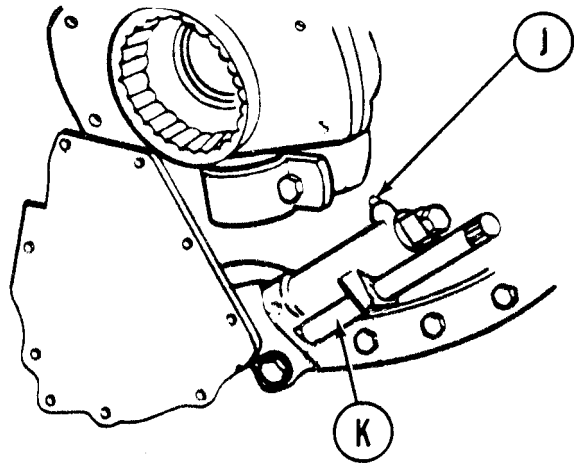
Steps 7 thru 9 require that one person be at driver's station and one person be at rear of vehicle.

7. Using 3/4 inch wrench, open bleed valve (H) and observe hydraulic fluid until air bubbles are no longer present. Close bleed valve (H).



8. Using 3/8 inch wrench, open bleed valve **(J)** on slave cylinder **(K)** until no air bubbles are observed in hydraulic fluid. Close bleed valve **(J).**

9. Repeat step 8 for opposite slave cylinder.

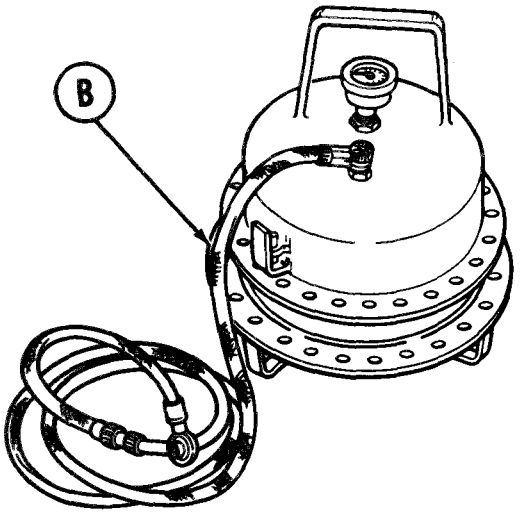


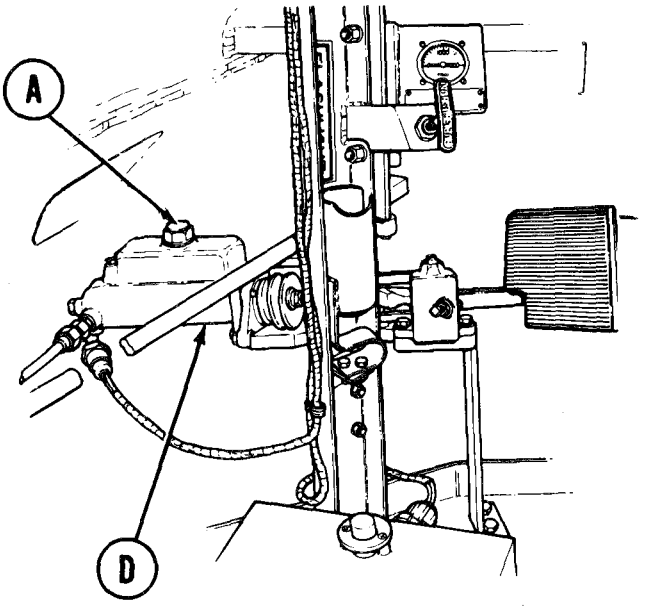
Go on to Sheet 4

TA249472

HYDRAULIC BRAKE SYSTEM BLEEDING (Sheet 4 of 4)

10. Remove filler and bleeder hydraulic system (B) from filler cap (A) hole.





11. Using 1-1/8 inch wrench, install filler cap (A) to master cylinder (D).

12. Place transmission lever in “P” park position (TM 5-5420-202-10).

13. Install transmission shroud (page 9-6).

14. Remove blocks from vehicle tracks (TM 5-5420-202-10).

End of Task

TA249473

PARKING BRAKE CONTROL ASSEMBLY (ONE PIECE OR FRONT SECTION) AND LINKAGE REPLACEMENT (Sheet 1 of 17)

PROCEDURE INDEX

TOOLS: 7/16 in. open end wrench
9/16 in. open end wrench
7/8 in. open end wrench
15/16 in. open end wrench
8 in. adjustable wrench
9/16 in. socket with 1/2 in. drive
5 in. extension with 1/2 in. drive
Ratchet handle with 1/2 in. drive
1/4 in. punch
1/8 in. punch
Hammer
Slip joint pliers
Torque wrench with 3/8 in. drive (0-200 lb-in)
Flat-tip screwdriver
7/8 in. crowfoot wrench with 3/8 in. drive
15/16 in. crowfoot wrench with 1/2 in. drive
Adapter socket, 3/8 in. to 1/2 in. sq. drive
Torque wrench with 1/2 in. drive
(0-175 lb ft) (0-237 N.m)

SUPPLIES: Spring pins (2 required)
Preformed packing
Black grease pencil
Sealing compound (Item 24, Appendix D)
15 ft. lacing wire (Item 61, Appendix D)
Split bushing
Lockwashers (12 required)

PERSONNEL: Two

REFERENCE: TM 5-5420-202-10

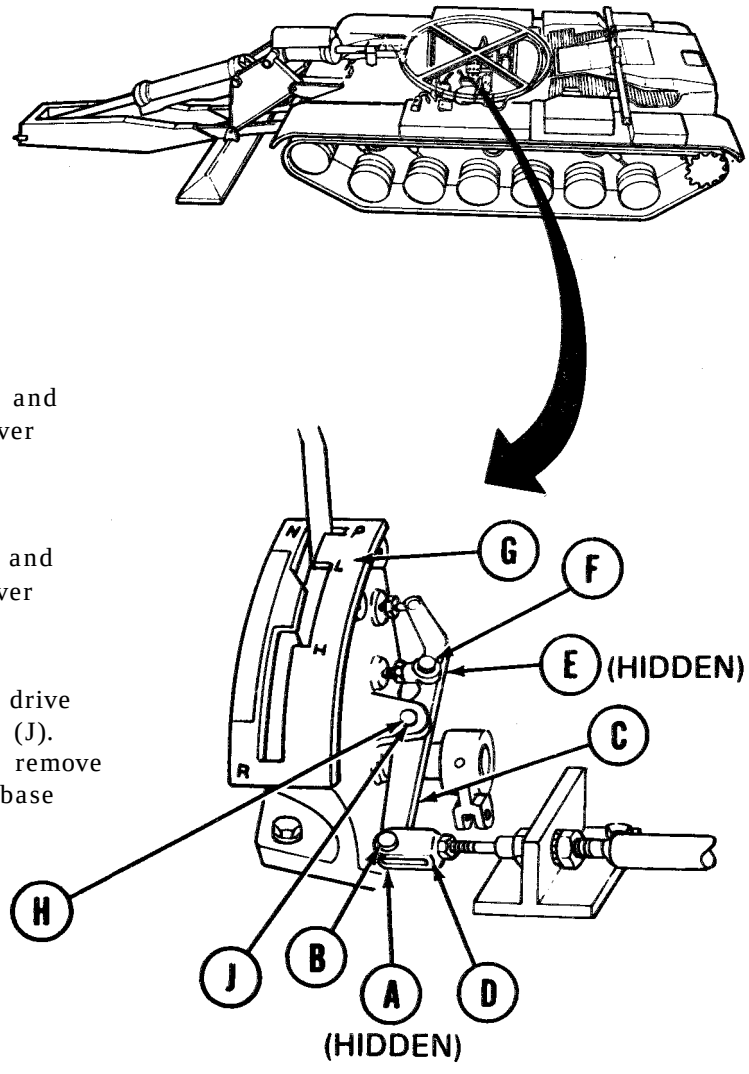
PRELIMINARY PROCEDURES: Block tracks to prevent vehicle movement (TM 5-5420-202-10)
Place transmission shift lever in N (neutral) (TM 5-5420-202-10)
Remove powerplant (page 5-2)
Remove operator's floor access cover (page 17-17)

Go on to Sheet 2

PARKING BRAKE CONTROL ASSEMBLY (ONE PIECE OR FRONT SECTIONI AND LINKAGE REPLACEMENT (Sheet 2 of 17)

NOTE

Parking brake controls in late model vehicles area two-piece cable while those in early model vehicles (not yet modified) area one-piece cable. To remove the rear section of the two-piece cable, see page 13-122.



REMOVAL:

1. Using pliers, remove cotter pin (A) and straight headed pin (B) securing lever (C) to clevis (D).

2. Using pliers, remove cotter pin (E) and straight headed pin (F) securing lever (C) to base.

3. Using hammer and 1/8 inch punch, drive out spring pin (H) from straight pin (J). Using hammer and 1/4 inch punch, remove straight pin (J) from lever (C) and base (6). Throw spring pin (H) away.

Go on to Sheet 3

TA249475

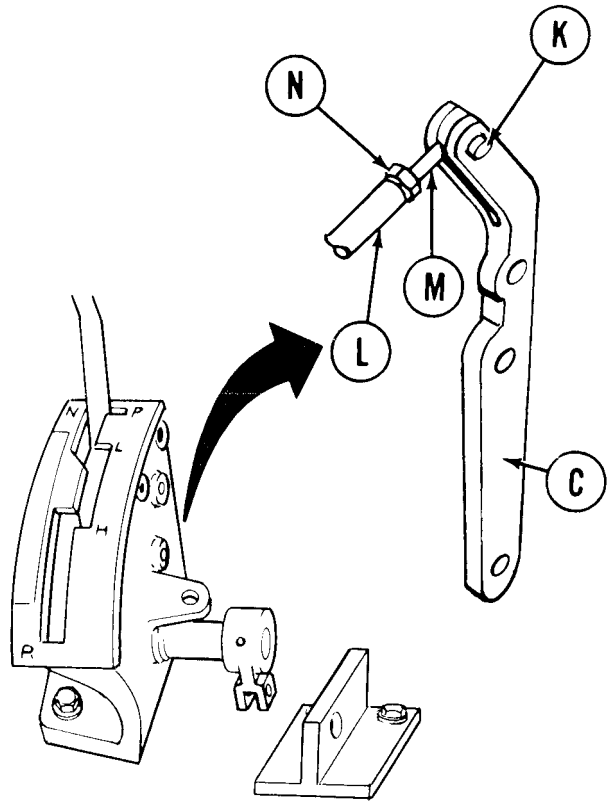
PARKING BRAKE CONTROL ASSEMBLY (ONE PIECE OR FRONT SECTION) AND LINKAGE REPLACEMENT (Sheet 3 of 17)

4. Remove lever (C), spring pin (K), straight pin (L), rod end connector (M), and nut (N) as a unit.

5. Using 7/16 inch wrench, hold nut (N), use pliers and remove straight pin (L) from rod end connector (M).

6. Using 7/16 inch wrench, remove nut (N) from rod end connector (M).

7. Using hammer and punch, drive out spring pin (K) from lever (C). Throw spring pin (K) away.



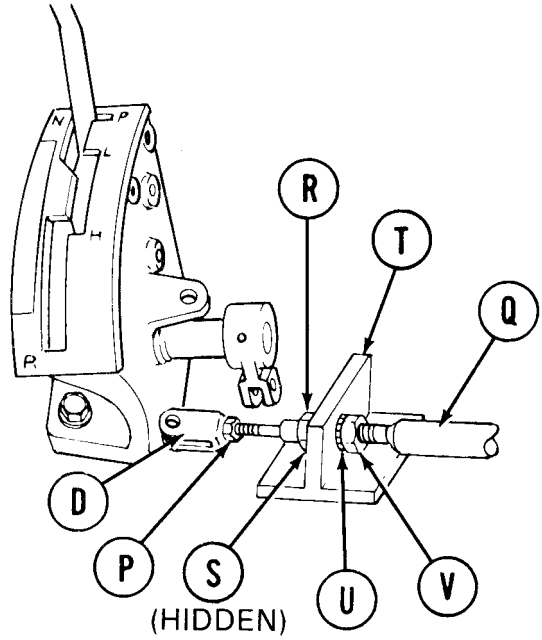
8. Using 9/16 inch wrench, hold nut (P), use 8 inch adjustable wrench to remove clevis (D) from control assembly (Q).

9. Using 9/16 inch wrench, remove nut (P) from control assembly (Q). Discard nut (P).

10. Using 15/16 inch wrench, remove nut (R) and lockwasher (S) from control assembly (Q).

11. Pull control assembly (Q) through support bracket (T).

12. Using 15/16 inch wrench, remove lockwasher (U) and nut (V) from control assembly (Q).



Go on to Sheet 4

TA249476

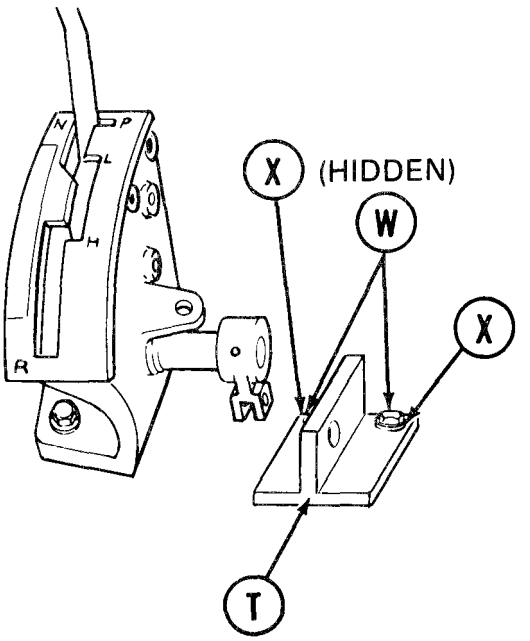
PARKING BRAKE CONTROL ASSEMBLY (ONE PIECE OR FRONT SECTION) AND LINKAGE REPLACEMENT (Sheet 4 of 17)

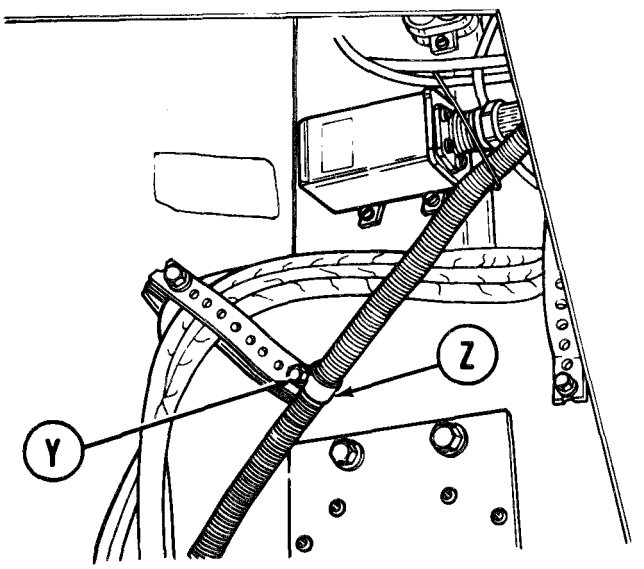
13. Using 9/16 inch socket and 5 inch extension, remove two screws (W) and lockwashers (X).

14. Remove bracket (T).

15. Using 7/16 inch wrench, remove screw (Y).

16. Using screwdriver, remove clamp (Z).





UNDER PLATFORM FLOOR

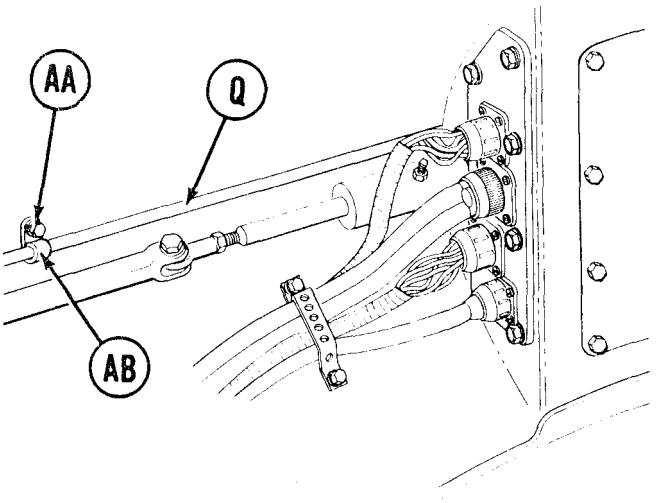
Go on to Sheet 5

TA249477

PARKING BRAKE CONTROL ASSEMBLY (ONE PIECE OR FRONT SECTION) AND LINKAGE REPLACEMENT (Sheet 5 of 17)

17. Using 9/16 inch wrench, remove lockwasher and screw (AA).

18. Using screwdriver, remove clamp (AB).



NOTE

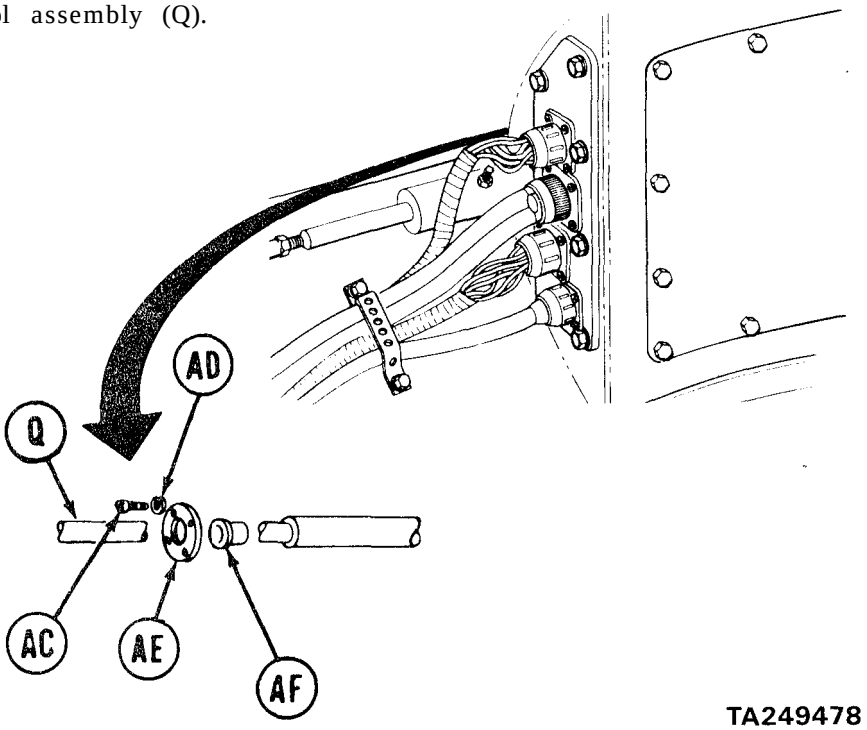
Use black grease pencil and mark control assembly (Q) at bulkhead wall.

19. Using screwdriver, remove four screws (AC) and lockwashers (AD) securing retainer (AE) and control assembly (Q) to bulkhead.

20. Grasp control assembly (Q) with both hands and pull forward 1 to 2 inches. Remove split bushing (AF). Throw bushing (AF) away.

21. Grasp control, assembly (Q) with both hands where the control assembly comes from under subfloor and goes along bulkhead wall. Pull toward rear of launcher until control assembly end (Q) is free from under subfloor.

22. Slide retainer (AE) off control assembly (Q).



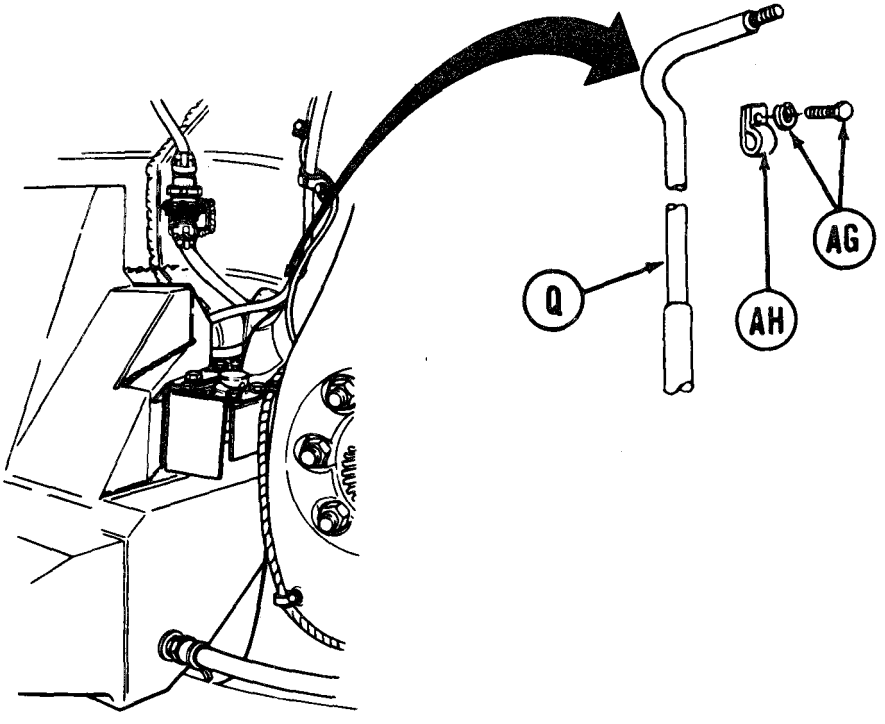
Go on to Sheet 6

TA249478

PARKING BRAKE CONTROL ASSEMBLY (ONE PIECE OR FRONT SECTION) AND LINKAGE REPLACEMENT (Sheet 6 of 17)

23. Using 9/16 inch wrench, remove screw and lockwasher (AG).

24. Using screwdriver, remove clamp (AH) from control assembly (Q).



NOTE

If removing one-piece parking control, omit next step. If removing front section of two-piece control, do next step then go to step 32.

25. Using adjustable wrench, hold control assembly (Q). Using 7/8 inch wrench, loosen connector (AJ) on control assembly (Q). Separate control assembly (Q) into two pieces.

Go on to Sheet 7

TA249479

PARKING BRAKE CONTROL ASSEMBLY (ONE PIECE OR FRONT SECTION) AND LINKAGE REPLACEMENT (Sheet 7 of 17)

26. From engine compartment, using 9/16 inch wrench hold nut (AK), use adjustable wrench and remove rod end connector (AL) from control assembly (Q).

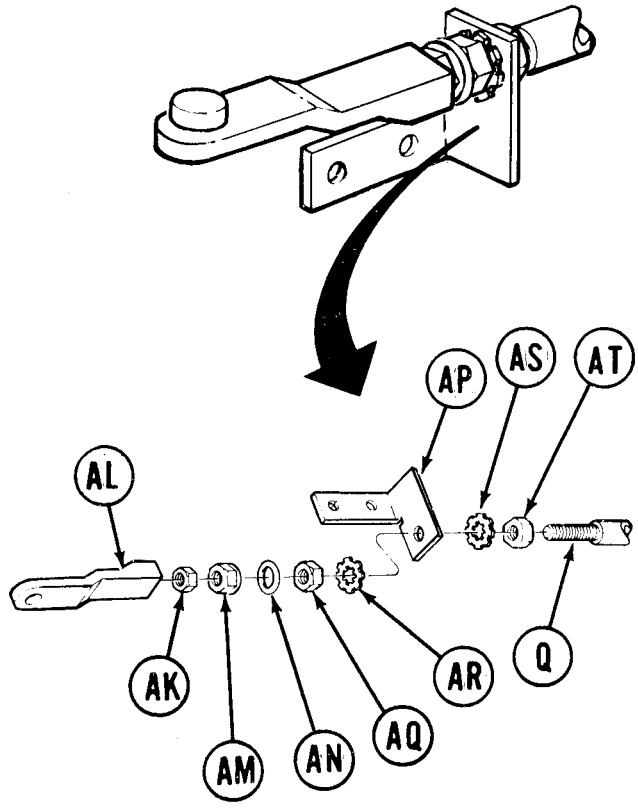
27. Using 9/16 inch wrench, remove nut (AK). Discard nut.

28. Using 15/16 inch wrench, remove brake control nut (AM) and preformed packing (AN) from control assembly (Q). Throw packing (AN) away.

29. Using adjustable wrench to hold support bracket (AP), use 15/16 inch wrench to remove nut (AQ) and lockwasher (AR).

30. Remove support bracket (AP) and lockwasher (AS) from control assembly (Q).

31. Using 15/16 inch wrench, remove nut (AT) from control assembly (Q).

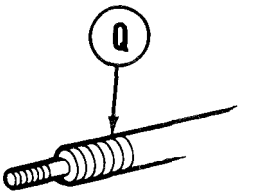


Go on to Sheet 8

TA249480

PARKING BRAKE CONTROL ASSEMBLY (ONE PIECE OR FRONT SECTION) AND LINKAGE REPLACEMENT (Sheet 8 of 17)

32. Attach wire to end of control assembly (Q) located inside compartment (commander's side). Make sure that wire is wrapped tightly several times around end of control assembly (Q) and other end is secured to a wrench or other movable object which will not allow the free end of wire to pass through the bulkhead opening.



NOTE

Two technicians are required to remove control assembly (Q) from vehicle, one technician inside compartment at commander's position and one technician inside engine compartment.

33. Person in engine compartment grasp control assembly (Q) with both hands and pull toward rear of vehicle, while person inside compartment feeds control assembly (Q) with wire through bulkhead.

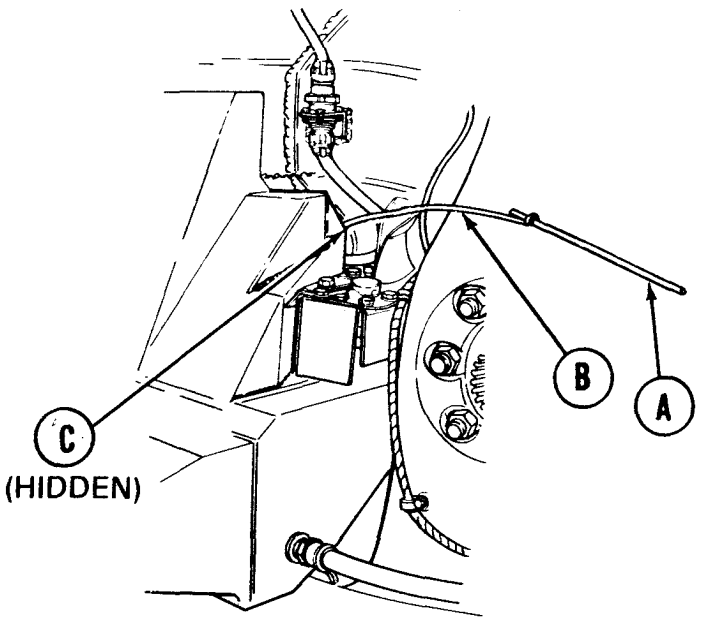
Go on to Sheet 9

TA249481

PARKING BRAKE CONTROL ASSEMBLY (ONE PIECE OR FRONT SECTION) AND LINKAGE REPLACEMENT (Sheet 9 of 17)

INSTALLATION:

1. Place old and new control assemblies (A) side-by-side. Make sure that length of end fittings match. Using black grease pencil, mark the replacement cable at the same location that the old (removed) control assembly was marked.



2. Attach wire (B) extending from tube (C) at the engine compartment tightly to the forward end of new control assembly (A).

Go on to Sheet 10

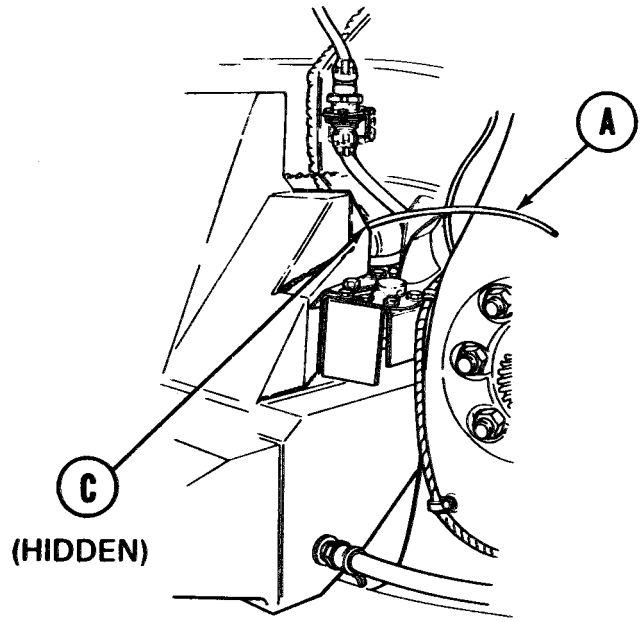
TA249482

PARKING BRAKE CONTROL ASSEMBLY (ONE PIECE OR FRONT SECTION) AND LINKAGE REPLACEMENT
(Sheet 10 of 17)

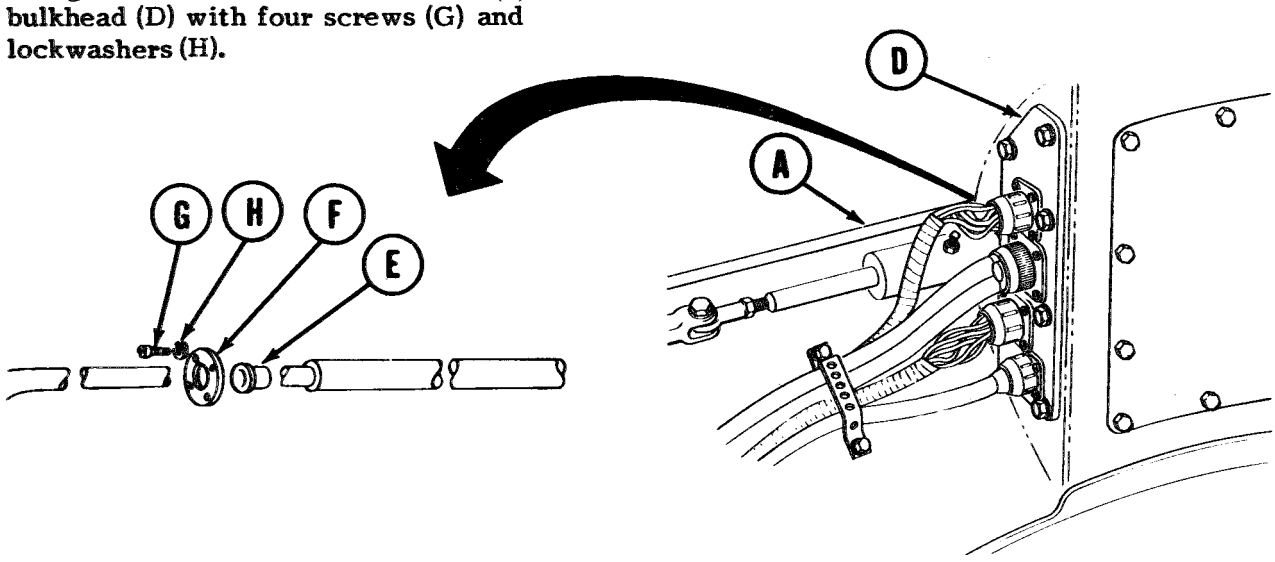
3. With one person inside compartment at commander's position pulling wire extending from bulkhead, second person carefully threads control assembly (A) through tube (C) located behind fuel tank until control assembly (A) end is visible at bulkhead (D) inside compartment.

4. Continue to pull control assembly (A) through bulkhead (D) until black grease pencil reference mark is at bulkhead wall location.

5. Position new split bushing (E) over control assembly (A) with sealing compound. Allow 20 minutes to dry, then put bushing (E) into bulkhead (D).



6. Slide retainer (F) onto control assembly (A). Using screwdriver, install retainer (F) to **bulkhead (D) with four screws (G) and lockwashers (H).**



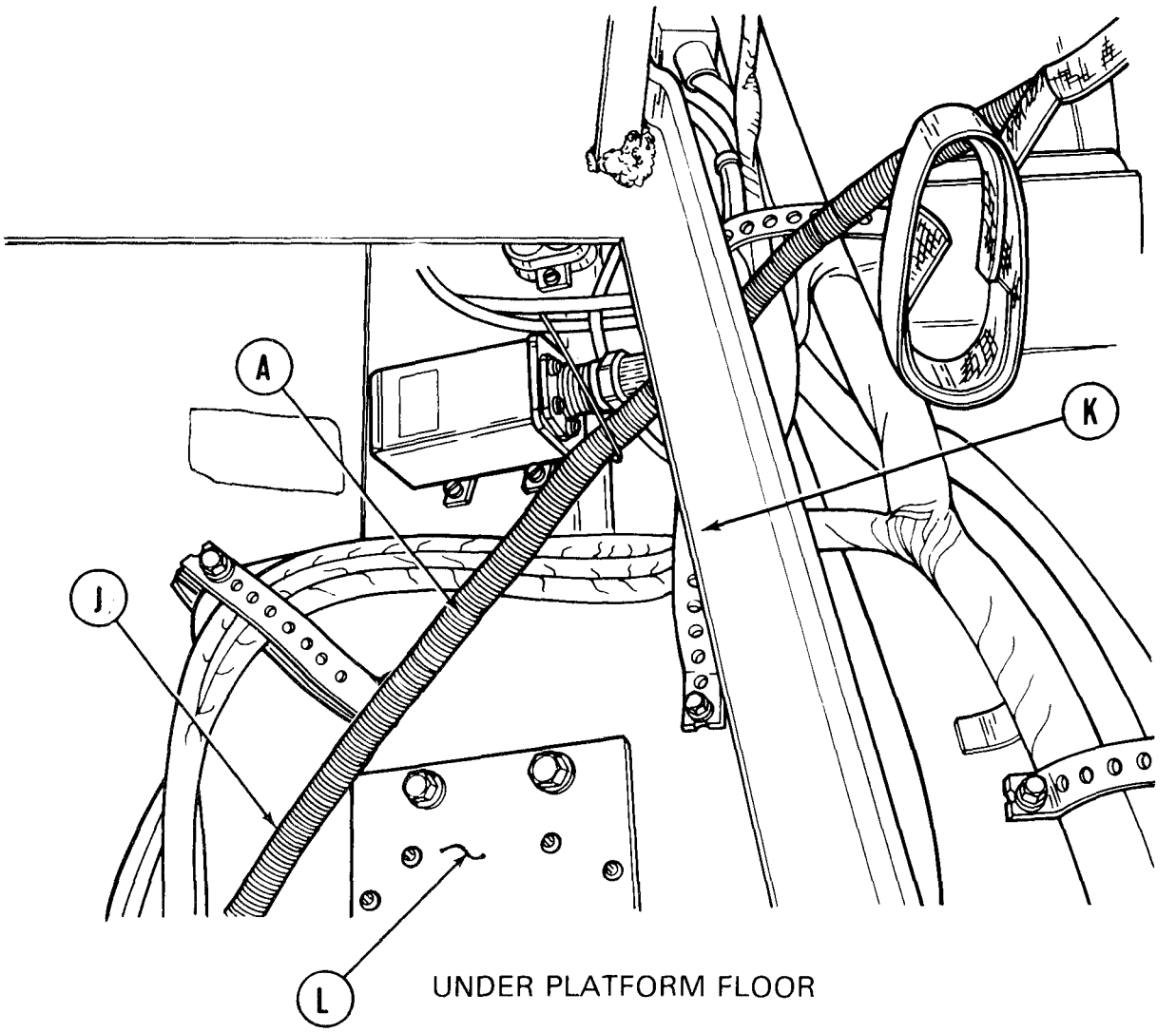
Go on to Sheet 11

TA249483

PARKING BRAKE CONTROL ASSEMBLY (ONE PIECE OR FRONT SECTION) AND LINKAGE REPLACEMENT (Sheet 11 of 17)

7. Remove wire (J) from forward end of control assembly (A) and place outside of vehicle.

8. Thread control assembly (A) along bulkhead wall and under subfloor at location (K). Pull control assembly (A) across access area (L) and through access hole.



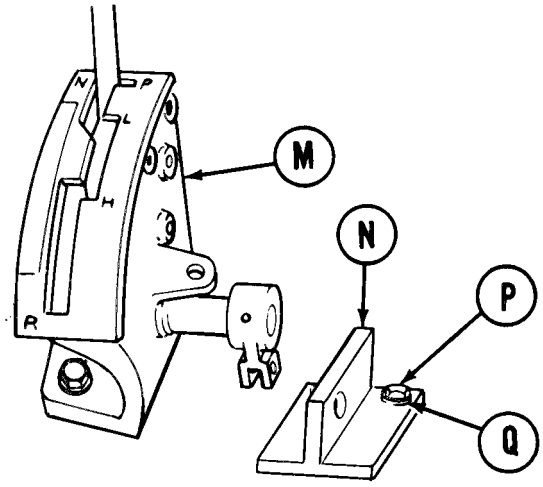
TA249484

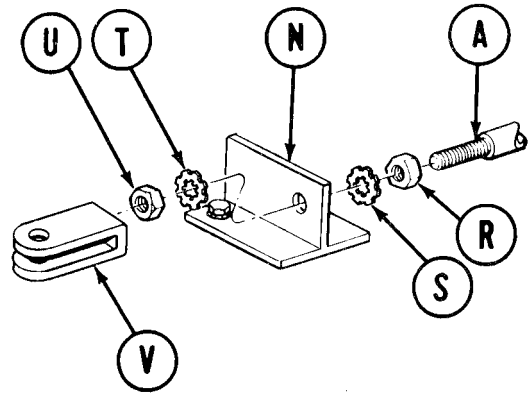
Go on to Sheet 13

PARKING BRAKE CONTROL ASSEMBLY (ONE PIECE OR FRONT SECTION) AND LINKAGE REPLACEMENT (Sheet 12 of 17)

9. Pull control assembly (A) toward base (M) and place support bracket (N) into position with holes alined.

10. Using 9/16 inch socket and 5 inch extension, install two screws (P) and lockwashers (Q).





11. Using 15/16 inch wrench, install nut (R) and lockwasher (S).

12. Pull control assembly (A) through support bracket (N).

13. Using 15/16 inch wrench, install lockwasher (T) and nut (U).

14. Using adjustable wrench, install clevis (X) onto control assembly (A).

Go on to Sheet 13

TA249485

PARKING BRAKE CONTROL ASSEMBLY (ONE PIECE OR FRONT SECTION) AND LINKAGE REPLACEMENT (Sheet 13 of 17)

15. Locate lever (W), pin (X), rod end (Y), nut (Z), and new spring pin (AA).

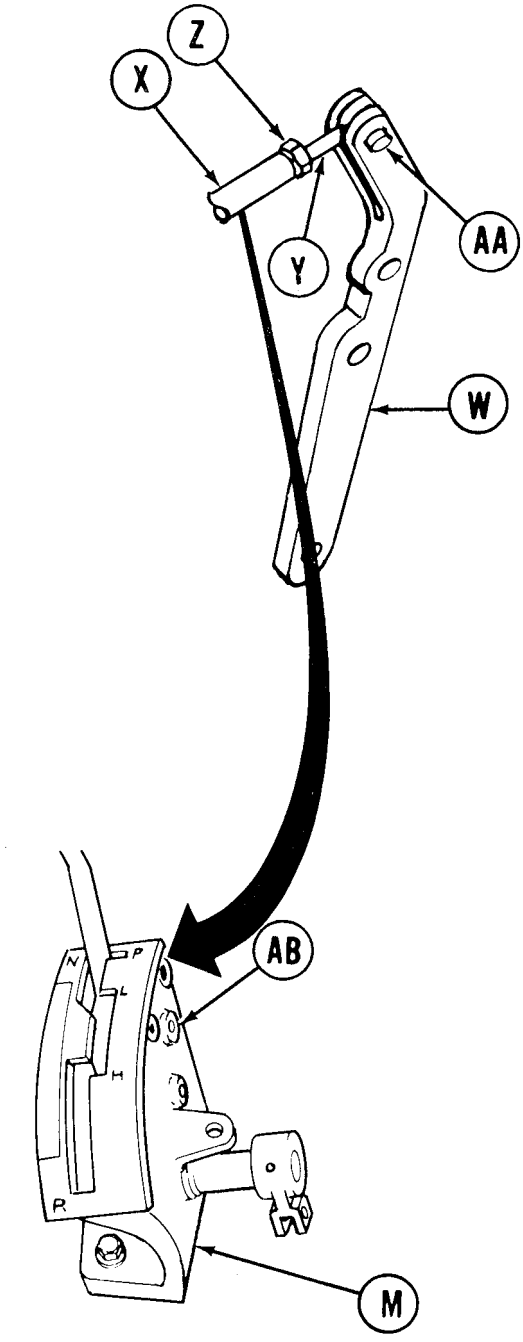
16. Using 7/16 inch wrench, install nut (Z) onto rod end connector (Y).

17. Using pliers to hold pin (X), use adjustable wrench to install rod end connector (Y), onto pin (X).

18. Using pliers to hold pin (X), use 7/16 inch wrench to tighten nut (Z).

19. Position split end of lever (W) over rod end connector (Y). Using pliers, install new spring pin (AA) through lever (W) and rod end connector (Y).

20. Position assembled lever (W) so pin (X) fits into hole in base (M) at (AB).



Go on to Sheet 14

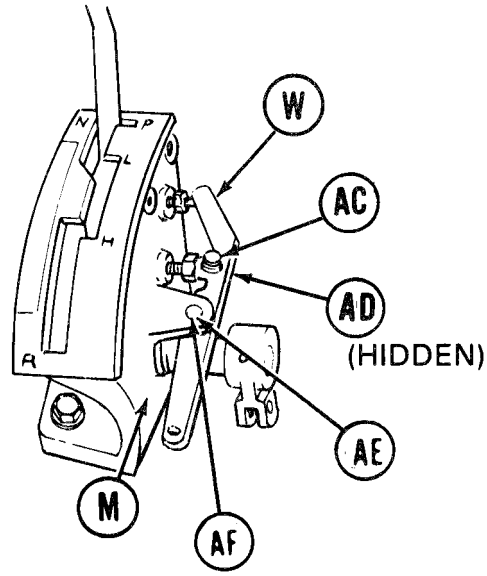
TA249486

PARKING BRAKE CONTROL ASSEMBLY (ONE PIECE OR FRONT SECTION) AND LINKAGE REPLACEMENT (Sheet 14 of 17)

21. Position lever (W) onto base (M) and secure with straight headed pin (AC).

22. Using pliers, secure straight headed pin (AC) with cotter pin (AD).

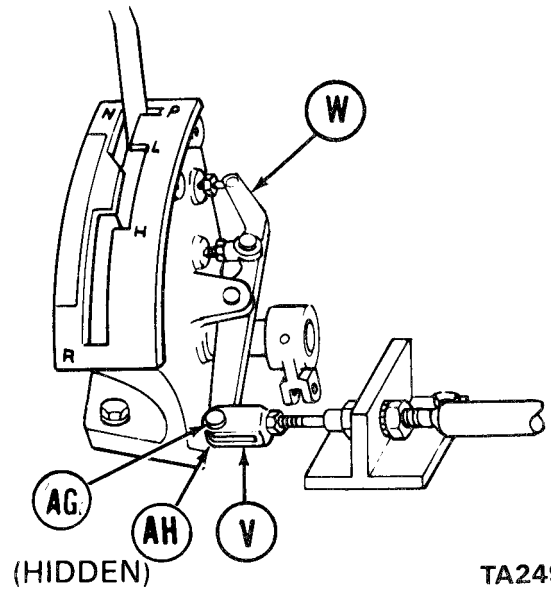
23. Using hammer and 1/4 inch punch, install straight pin (AE) and, using hammer and 1/8 inch punch, install new spring pin (AF) securing lever (W) to base (M).



24. Position clevis (V) onto lever (W) with holes alined.

25. Install straight headed pin (AG).

26. Using pliers, install cotter pin (AH).



TA249487

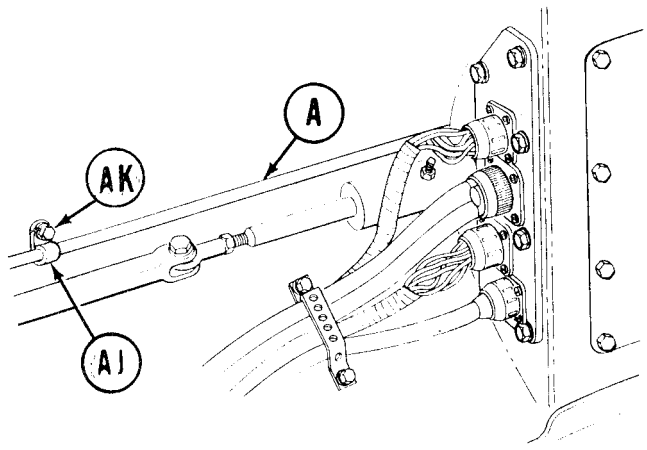
Go on to Sheet 15

PARKING BRAKE CONTROL ASSEMBLY (ONE PIECE OR FRONT SECTION) AND LINKAGE REPLACEMENT (Sheet 15 of 17)

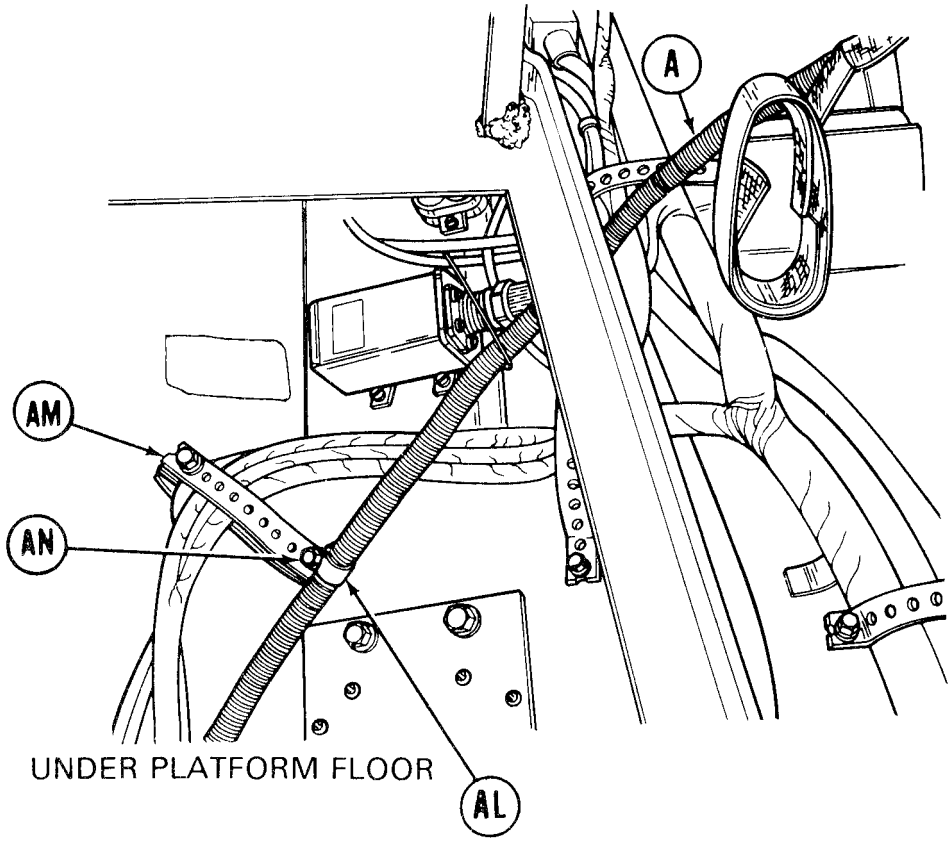
27. Position clamp (AJ) onto control assembly (A) with hole alined.

28. Using 9/16 inch wrench, install screw and lockwasher (AK).

29. Position clamp (AL) onto control assembly (A) with hole alined to bracket (AM).



30. Using 7/16 inch wrench, install screw and lockwasher (AN).



Go on to Sheet 16

TA249488

PARKING BRAKE CONTROL ASSEMBLY (ONE PIECE OR FRONT SECTION) AND LINKAGE REPLACEMENT (Sheet 16 of 17)

NOTE

If installing one-piece control, omit next two steps. if installing front section of two-piece control, do next two steps then go to step 42.

31. Using adjustable wrench to hold control assembly (A), use 7/8 inch wrench to tighten connector (AP) joining the two pieces of control assembly (A) together.

32. Using torque wrench and 7/8 inch crowfoot, tighten connector (AP) on control assembly (A) to 35-50 lb-in. (8.9 - 12.7 N.m).

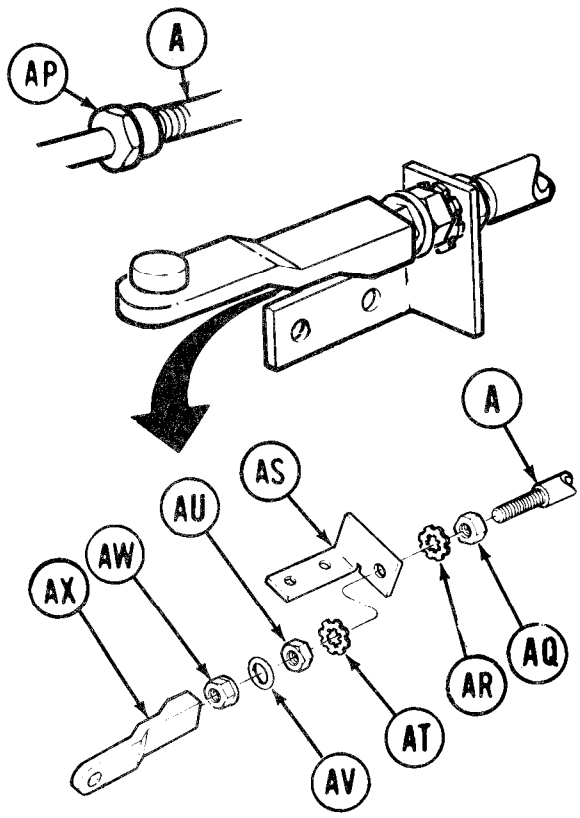
33. Go to engine compartment.

34. Using 15/16 inch wrench, install nut (AQ) onto control assembly (A).

35. Install lockwasher (AR), bracket (AS), and lockwasher (AT) onto control assembly (A).

36. Install nut (AU) onto control assembly (A).

37. Using 15/16 inch crowfoot wrench and torque wrench, tighten nut (AQ) to 45-50 lb-ft. (61-68 N.m).



38. Using 15/16 inch wrench, install brake control nut (AX) onto control assembly (A).

39. Using fingers, install brake control nut (AW) onto control assembly (A).

40. Using 15/16 inch crowfoot wrench and torque wrench, tighten nut (AW) to 25-30 lb-ft. (34-41 N.m).

Go on to Sheet 17

TA249489

PARKING BRAKE CONTROL ASSEMBLY (ONE PIECE OR FRONT SECTION) AND LINKAGE REPLACEMENT (Sheet 17 of 17)

41. Using 15/16 inch wrench to hold nut (AW), use adjustable wrench to install connector (AX) onto control assembly (A).

42. Position clamp (AY) onto control assembly (A).

43. Using 9/16 inch wrench, install screw and lockwasher (AZ).

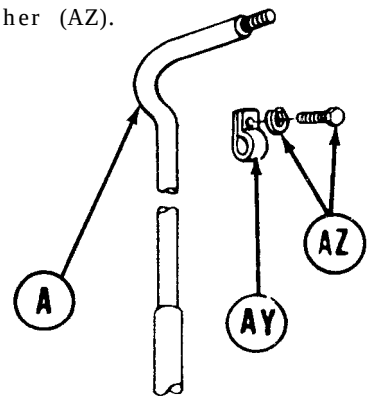
44. Install powerplant (page 5-14).

45. Perform parking brake adjustment (page 13-132).

46. Install operator's floor access cover (page 17-17).

47. Place transmission shift lever at P (park) (TM 5-5420-202-10).

48. Remove blocks from tracks (TM 5-5420-202-10).



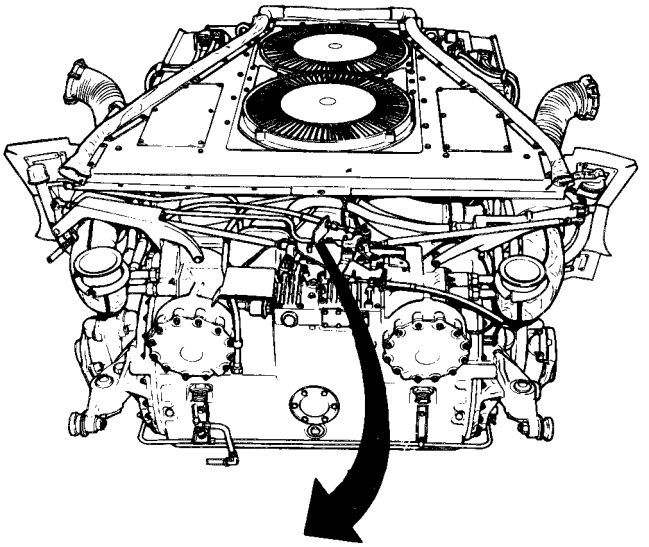
End of Task

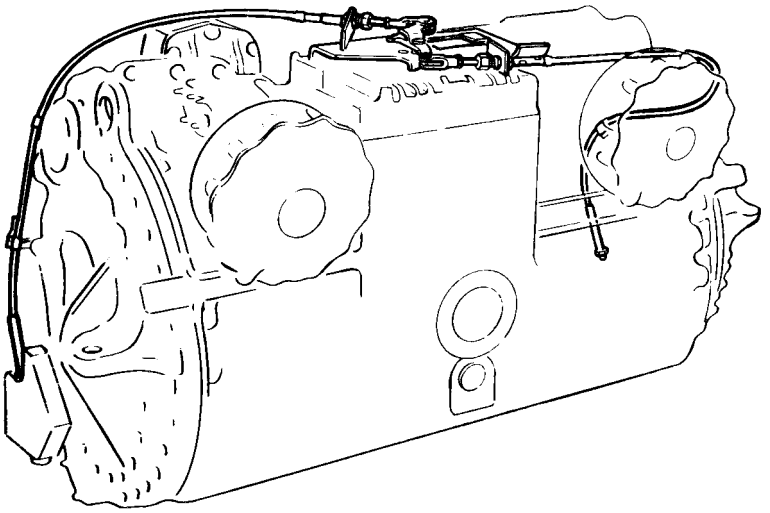
TA249490

PARKING BRAKE CONTROL ASSEMBLY (ENGINE COMPARTMENT) REPLACEMENT (Sheet 1 of 15)

PROCEDURE INDEX

TOOLS: 9/16 in. socket with 1/2 in. drive
Screwdriver, flat-tip, 1/4 in. tip
Screwdriver, flat-tip, 3/8 in. tip
7/16 in. socket with 1/2 in. drive
3/4 in. socket with 1/2 in. drive
Universal joint with 1/2 in. drive
Ratchet with 1/2 in. drive
10 in. extension with 1/2 in. drive
7 in. long nosed pliers
Torque wrench, 0-175 lb-ft with 1/2 in. drive
7/16 in. open end wrench
9/16 in. open end wrench (2)
8 in. adjustable wrench
15/16 in. open end wrench (2)
7/8 in. open end wrench
6 in. scale
9/16 in. crowfoot with 1/2 in. drive





SUPPLIES: Gasket
Preformed packings
Packing with retainer
Grease pencil
Paper (Item 72, Appendix D)

PRELIMINARY PROCEDURES: Block tracks to prevent vehicle movement (TM 5-5420-202-10)
Place shift lever at N (neutral position) (TM 5-5420-202-10)
Remove powerplant (page 5-2)

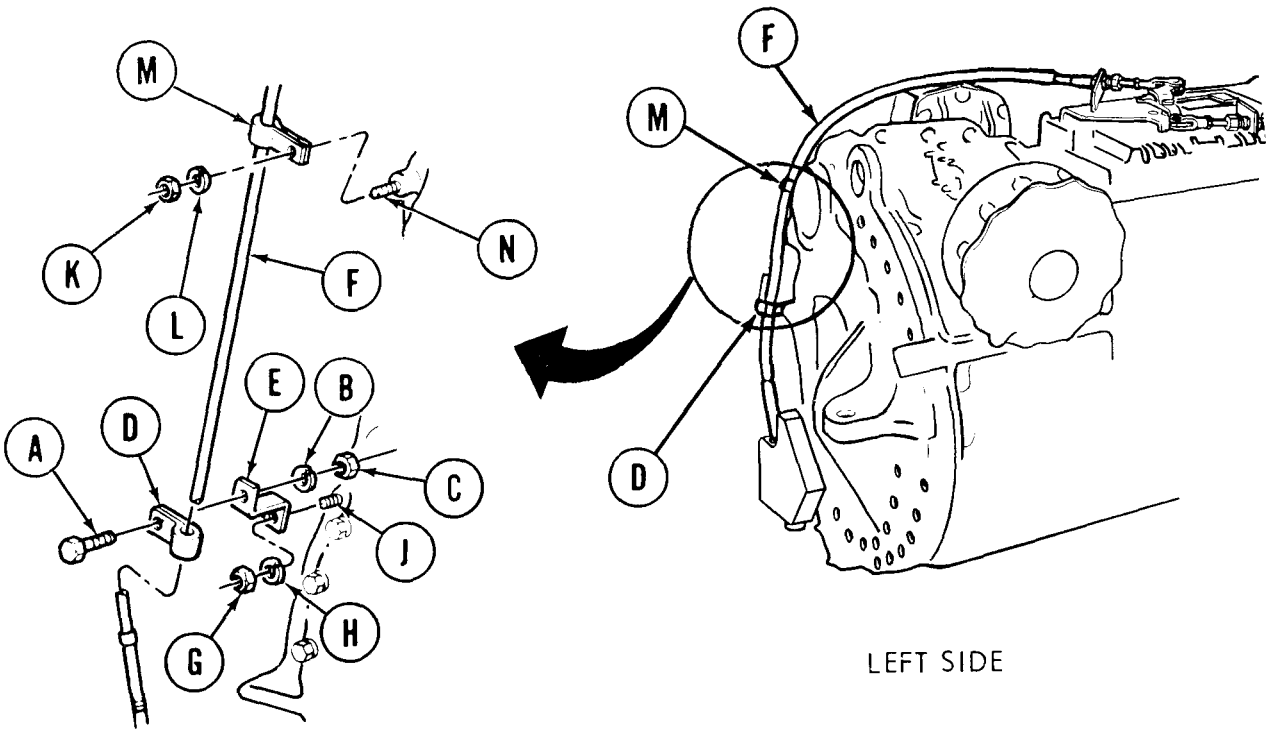
Go on to Sheet 2

PARKING BRAKE CONTROL ASSEMBLY (ENGINE COMPARTMENT) REPLACEMENT (Sheet 2 of 15)

REMOVAL:

NOTE

Replacement of left and right control assembly is the same, except for location of clamps and routing of cable assemblies.

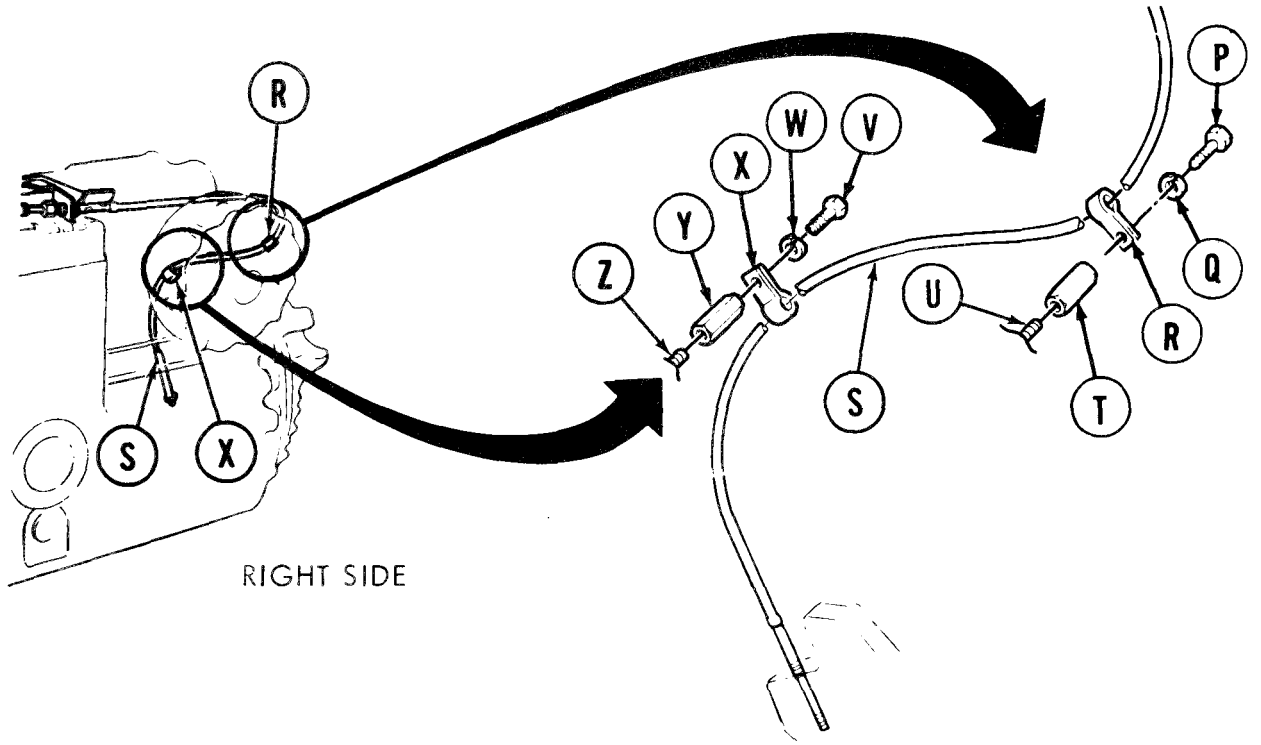


1. Using 7/16 inch socket and 7/16 inch wrench, remove screw (A), washer (B), and nut (C) holding clamp (D) to bracket (E).
2. Using flat-tip screwdriver to pry open, remove clamp (D) from control assembly (F).
3. Using 3/4 inch socket with 10 inch extension, remove nut (G) and washer (H) from stud (J).
4. Remove bracket (E).
5. Using 3/4 inch socket, 10 inch extension, and universal joint remove nut (K) and washer (L).
6. Using flat-tip screwdriver to pry open, remove clamp (M) from stud (N) and control assembly (F).

Go on to Sheet 3

TA249492

PARKING BRAKE CONTROL ASSEMBLY (ENGINE COMPARTMENT) REPLACEMENT (Sheet 3 of 15)



7. Using 3/4 inch socket, remove screw (P) and washer (Q).

8. Using flat-tip screwdriver to pry open, remove clamp (R) from control assembly (S).

9. Using 3/4 inch socket, remove spacer nut (T) from stud (U).

10. Using 3/4 inch socket, remove screw (V) and washer (W).

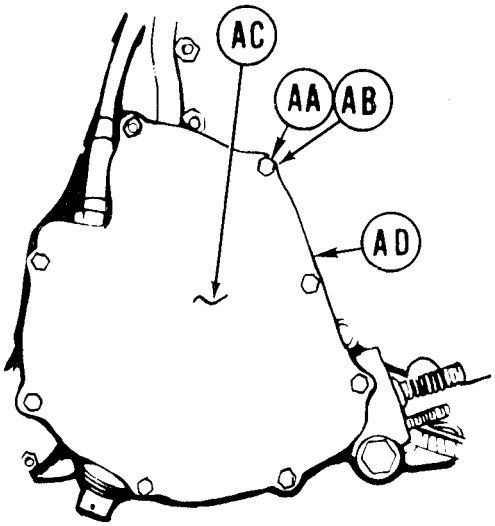
11. Using flat-tip screwdriver to pry open, remove clamp (X) from control assembly (S).

12. Using 3/4 inch socket, remove spacer nut (Y) from stud (Z).

Go on to Sheet 4

TA249493

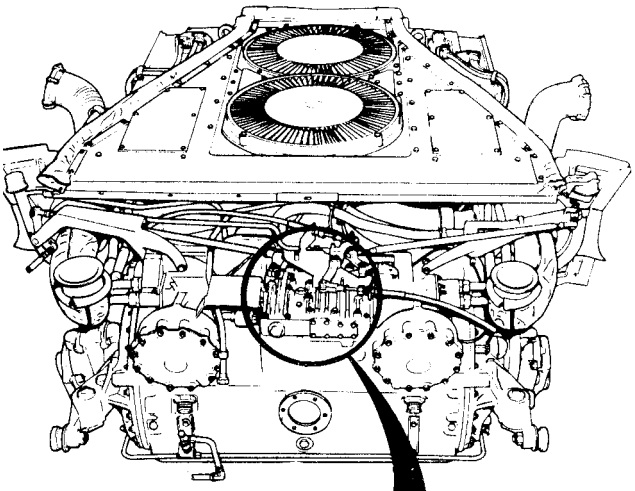
PARKING BRAKE CONTROL ASSEMBLY (ENGINE COMPARTMENT) REPLACEMENT (Sheet 4 of 15)



LEFT SIDE SHOWN

13. Using 7/16 inch socket, remove eight nuts (AA) and washers (AB).

14. Remove cover (AC) and gasket (AD). Throw gasket (AD) away.

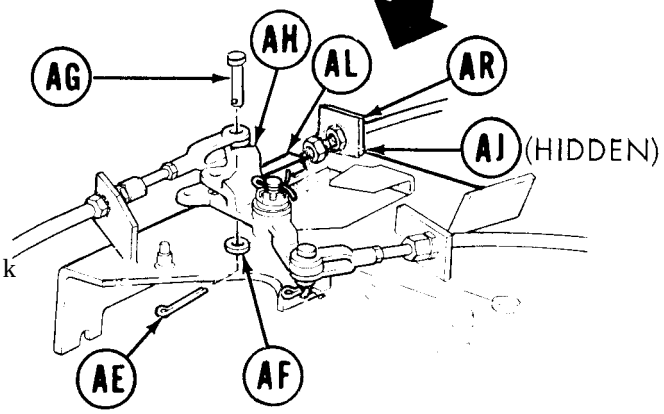


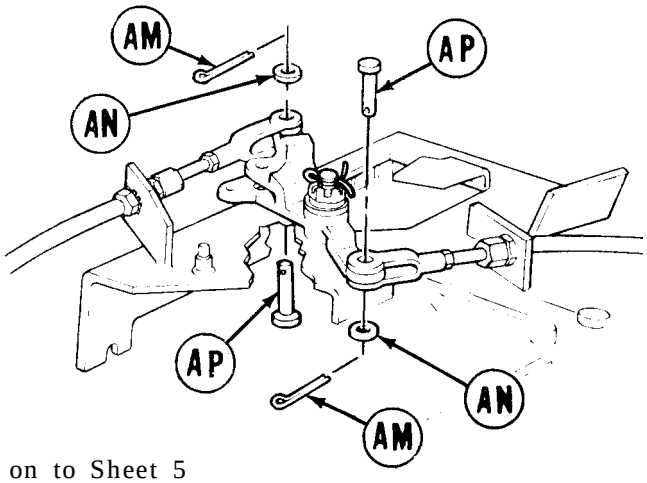
15. Using pliers, remove cotter pin (AE) and flat washer (AF) from pin (AG).

16. Remove pin (AG) from bellcrank (AH).

17. Using 9/16 inch socket, remove two screws (AJ, hidden) securing bracket (AK).

18. Remove cable connector (AL) from bellcrank (AH) and set connector (AL) aside.





19. Using long nosed pliers, remove two cotter pins (AM). Throw cotter pins (AM) away.

20. Remove washers (AN) and two pins (AP).

Go on to Sheet 5

TA249494

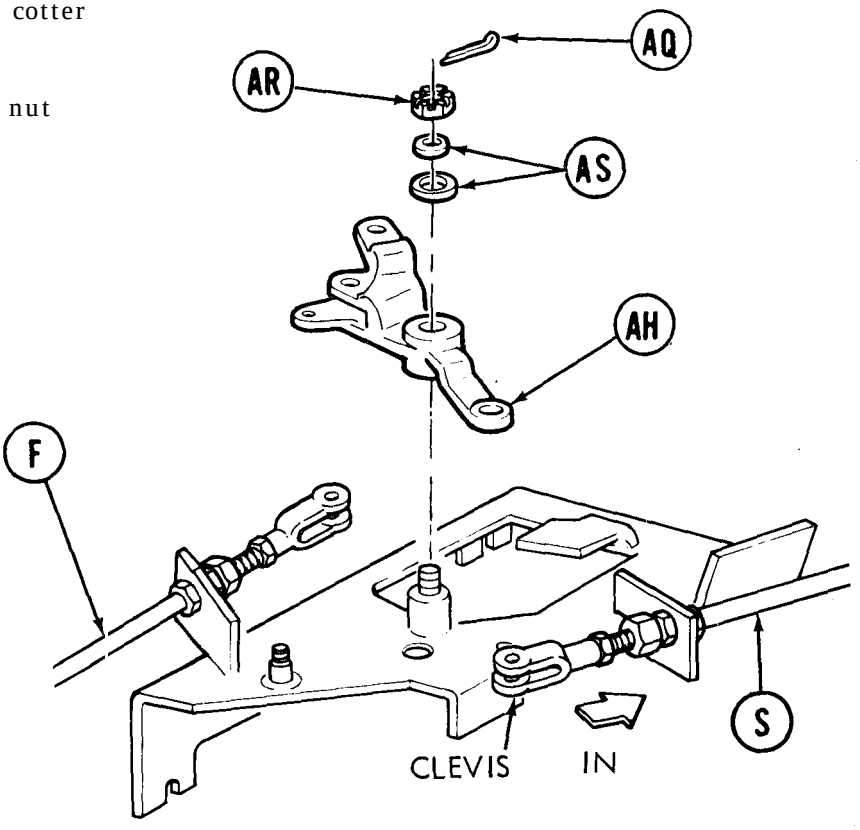
PARKING BRAKE CONTROL ASSEMBLY (ENGINE COMPARTMENT) REPLACEMENT (Sheet 5 of 15)

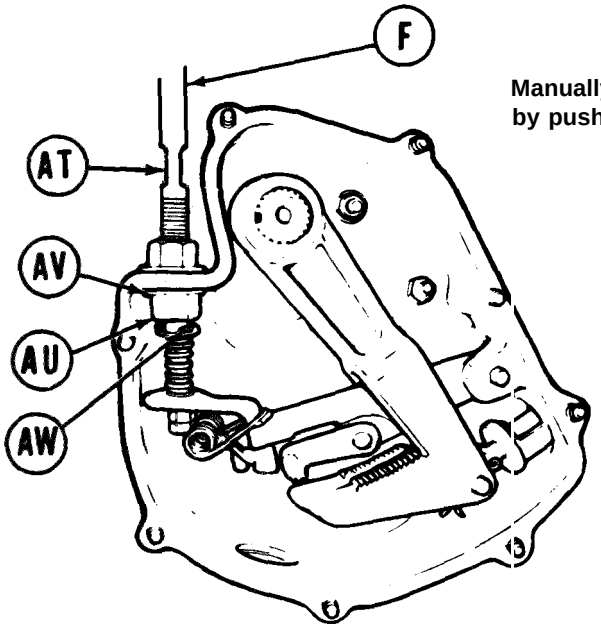
21. Using long nosed pliers, remove cotter pin (AQ).

22. Using 9/16 inch wrench, remove nut (AR).

23. Remove two flat washers (AS).

24. Remove bellcrank (AH).





NOTE

Manually move control assemblies (F) and (S) into "P" park position by pushing both clevises in.

25. Using 9/16 inch wrench on flats (AT) of control assembly (F) and 7/8 inch wrench on nut (AU), back off nut (AU) until it falls.

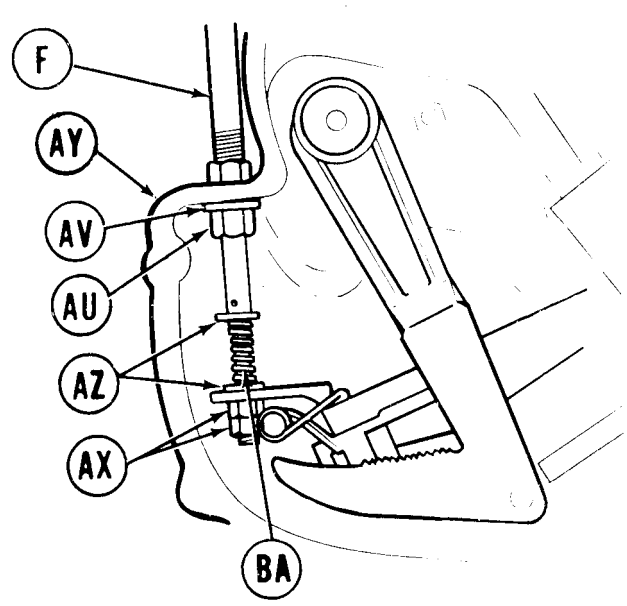
26. Using flat-tip screwdriver, pry packing with retainer (AV) off control assembly until it falls onto nut (AU).

27. Using long nosed pliers, remove cotter pin (AW).

Go on to Sheet 6

TA249495

PARKING BRAKE CONTROL ASSEMBLY (ENGINE COMPARTMENT) REPLACEMENT (Sheet 6 of 15)



28. Using two 9/16 inch wrenches, remove two nuts (AX) by removing lower nut first while holding upper nut.

29. Pull control assembly (F) out of housing (AY). When control assembly (F) is pulled out, washers (AZ), spring (BA), packing with retainer (AV), and nut (AU) will fall free.

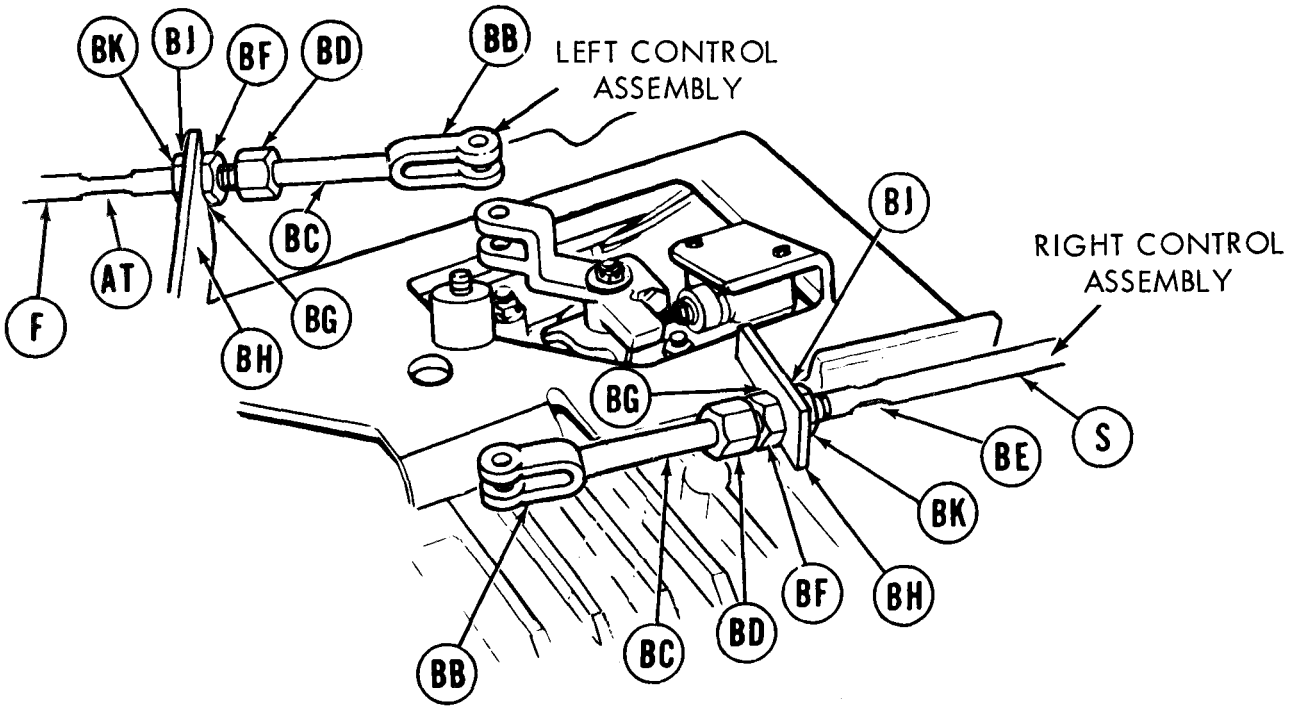
30. Throw packing with retainer (AV) away.

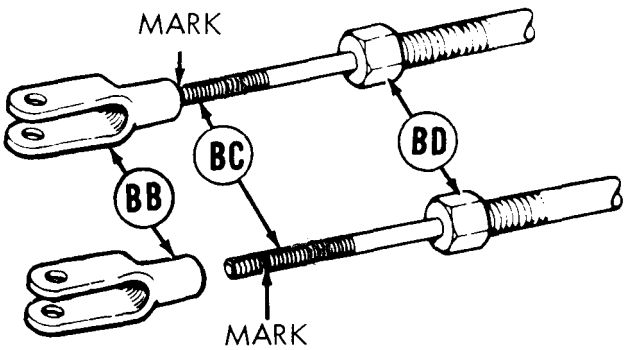
31. Using flat-tip screwdriver, remove and throw away preformed packing from inside of nut (AU).

Go on to Sheet 7

TA249496

PARKING BRAKE CONTROL ASSEMBLY (ENGINE COMPARTMENT) REPLACEMENT (Sheet 7 of 15)





32. Using grease pencil, mark the distance that both clevises (BB) are threaded onto control assembly inner rods (BC).

33. Remove both clevises (BB).

34. Using 15/16 inch wrench, remove both nuts (BD).

35. Using 9/16 inch wrench to hold flats (AT and BE) of control assemblies (F and S) and using 15/16 inch wrench, remove nuts (BF) and washers (BG).

36. Pull control assemblies (F and S) out of brackets (BH).

37. Using 15/16 inch wrench, remove washers (BJ) and nuts (BK).

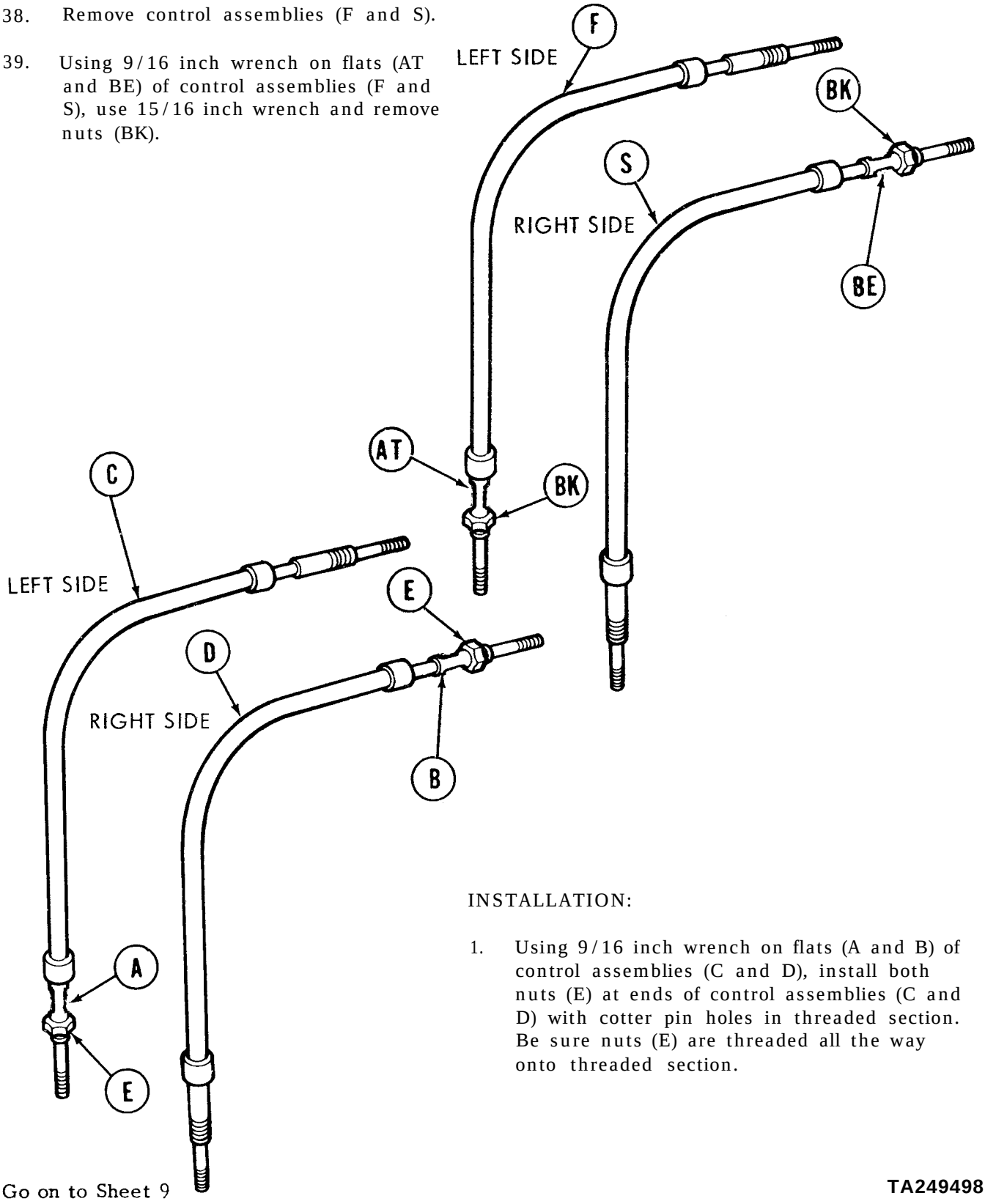
Go on to Sheet 8

TA249497

PARKING BRAKE CONTROL ASSEMBLY (ENGINE COMPARTMENT) REPLACEMENT (Sheet 8 of 15)

38. Remove control assemblies (F and S).

39. Using 9/16 inch wrench on flats (AT and BE) of control assemblies (F and S), use 15/16 inch wrench and remove nuts (BK).



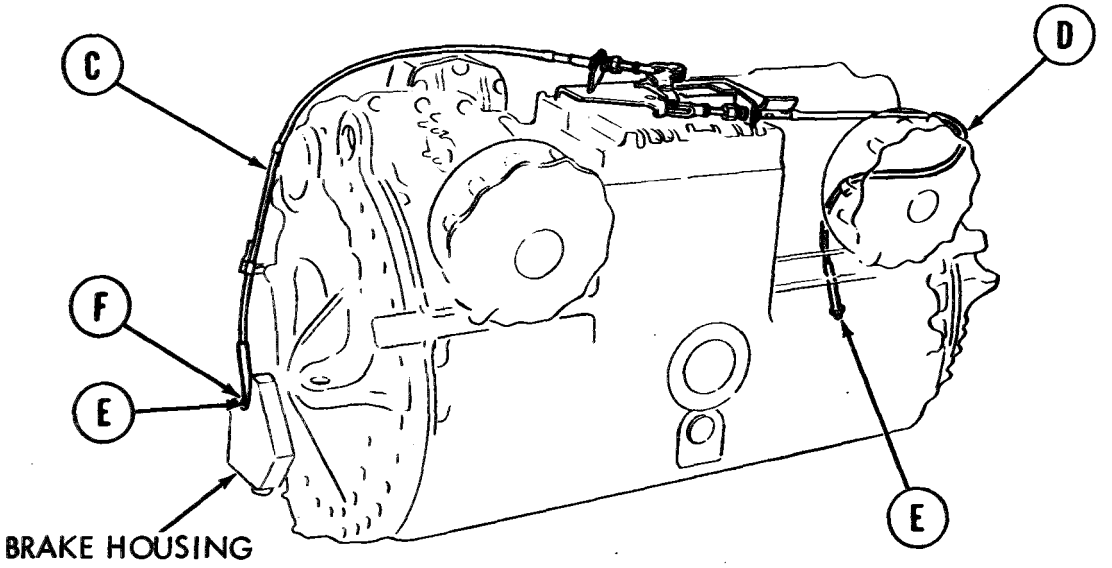
INSTALLATION:

1. Using 9/16 inch wrench on flats (A and B) of control assemblies (C and D), install both nuts (E) at ends of control assemblies (C and D) with cotter pin holes in threaded section. Be sure nuts (E) are threaded all the way onto threaded section.

Go on to Sheet 9

TA249498

PARKING BRAKE CONTROL ASSEMBLY (ENGINE COMPARTMENT) REPLACEMENT (Sheet 9 of 15)



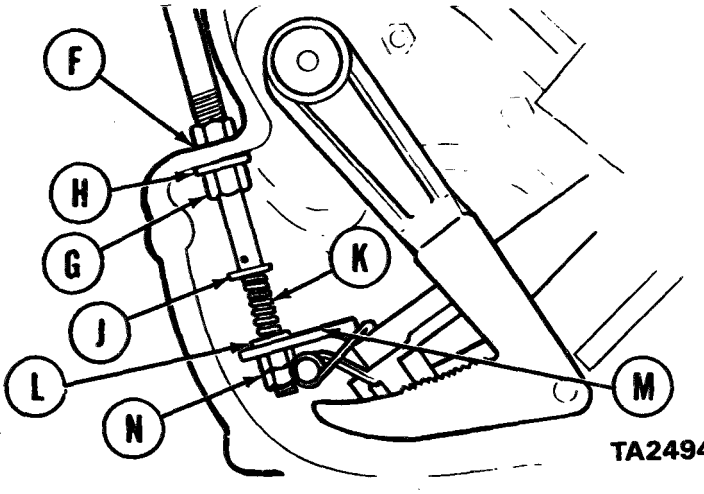
2. Position control assemblies (C and D) to transmission. Place ends with nuts (E) at brake housings.

3. Position control assemblies (C and D) through holes (F) in brake housings.

4. Install new preformed packing into nuts (G) before installing.

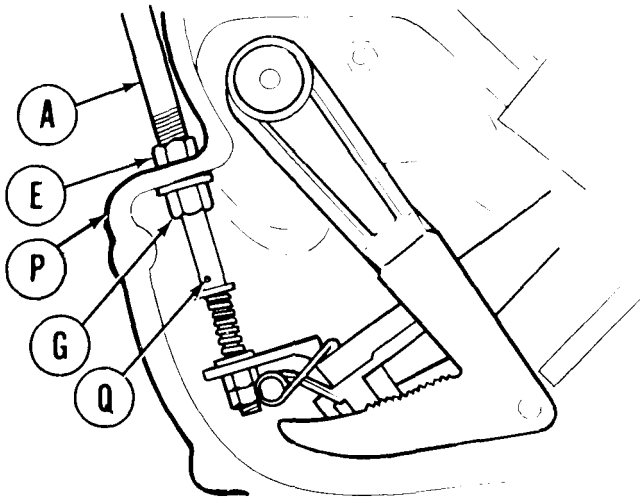
5. While inserting control assemblies (C and D), install, loosely the following parts in the following order: new packing with new retainer (H), nut with new packing (G), washer (J), spring (K), and washer (L).

6. Continue inserting control assemblies (C and D), guide ends of rods through brake lever (M), and loosely install nuts (N) onto rod ends. It maybe necessary to compress springs (K) to permit rod ends to pass through brake levers (M).

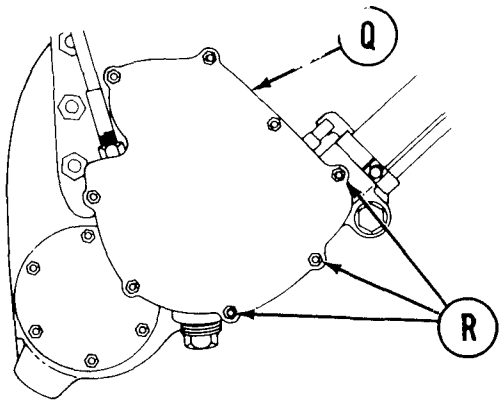


Go on to Sheet 10

PARKING BRAKE CONTROL ASSEMBLY ENGINE COMPARTMENT) REPLACEMENT (Sheet 10 of 15)



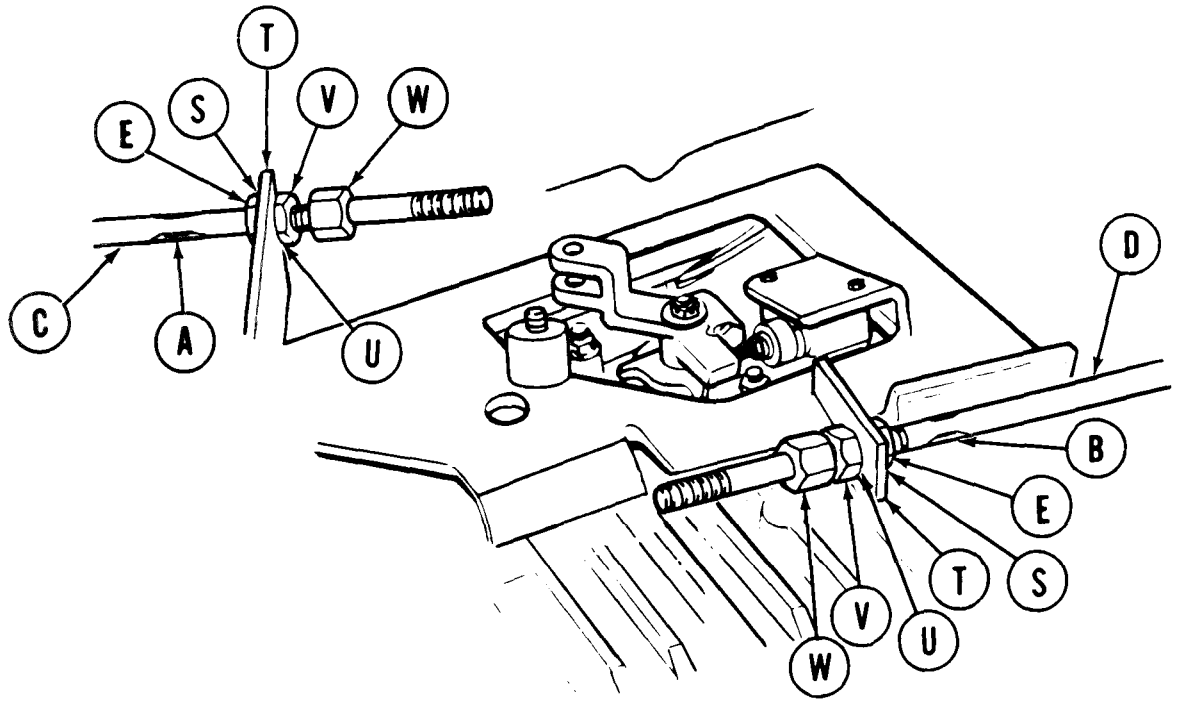
7. Push packing with retainer (H) onto threaded sleeve of control assembly.
8. Thread nut (G) onto sleeve. Finger tighten nut (G).
9. Using 9/16 inch wrench on flats (B) of control assembly, use 15/16 inch wrench to tighten nut (E) against housing.
10. Using fingers, thread nuts (N) onto rod end until a full thread is exposed below lower nut.
11. Using 9/16 inch wrench tighten nuts (N).
12. Push washer (J) and spring (K) downward and install new cotter pin through hole (P) in rod end. Bend cotter pin with pliers to keep it from falling out.
13. Install cover (Q) with new gasket.
14. Using 7/16 inch socket, install eight nuts (R) with new lockwashers.



Go on to Sheet 11

TA249500

PARKING BRAKE CONTROL ASSEMBLY (ENGINE COMPARTMENT) REPLACEMENT (Sheet 11 of 15)



15. Install nuts (E) and washers (S) over end of control assemblies (C and D). Thread nuts (E) to ends of threaded sleeves.

16. Insert ends of control assemblies (C and D) through brackets (T).

17. Install washers (U) and nuts (V) onto control assemblies (C and D).

18. Install new preformed packings into nuts (W) and install nuts (W) onto control assemblies (C and D).

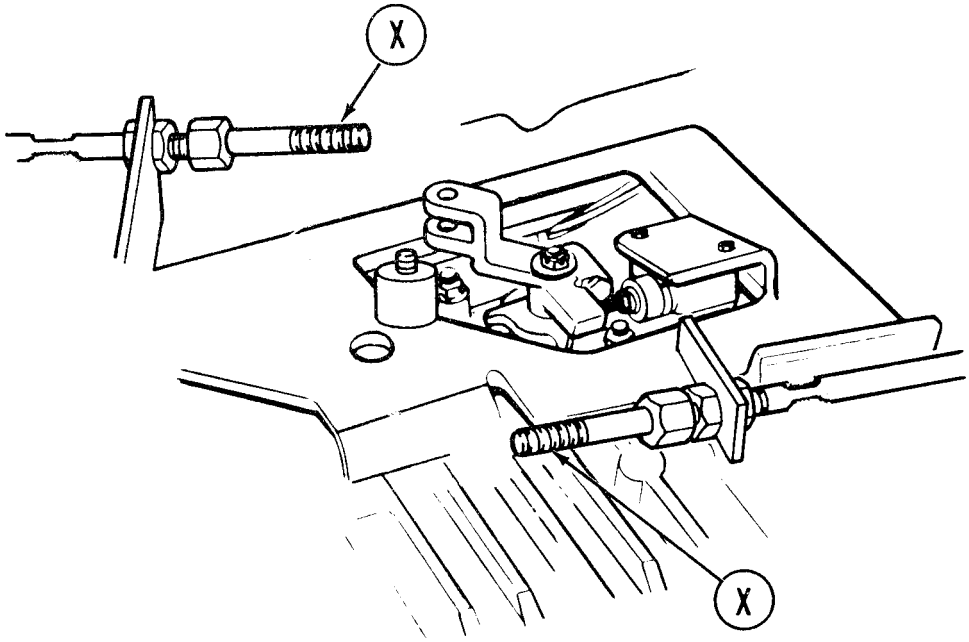
19. Using 9/16 inch wrench on flats (A and B) to hold, use 15/16 inch wrench and tighten nuts (W) until they cannot be tightened any more.

20. Using two 15/16 inch wrenches, tighten nuts (E and V) to bracket (T).

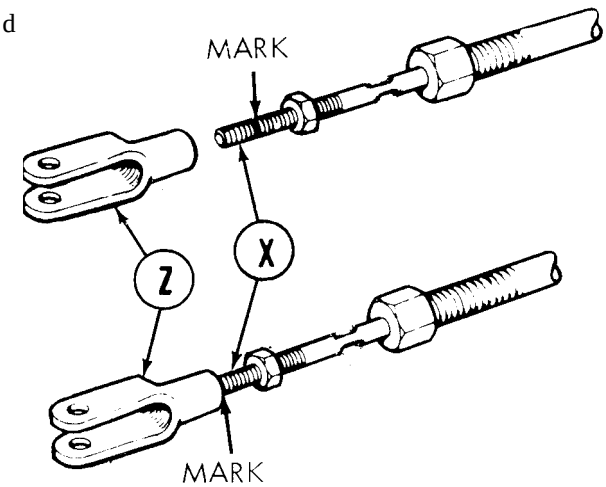
TA249501

PARKING BRAKE CONTROL ASSEMBLY (ENGINE COMPARTMENT) REPLACEMENT (Sheet 12 of 15)

21. Measure, record, and mark on control assembly rod ends (X) the distance both clevises (Y) are to be threaded on. (The distance was measured and recorded during removal of clevis step 32.)



22. Install both clevises (Z) on rod ends. Thread clevis up to measured mark.



Go on to Sheet 13

TA249502

PARKING BRAKE CONTROL ASSEMBLY (ENGINE COMPARTMENT) REPLACEMENT (Sheet 13 of 15)

23. Install bellcrank (Z) onto stud (AA).

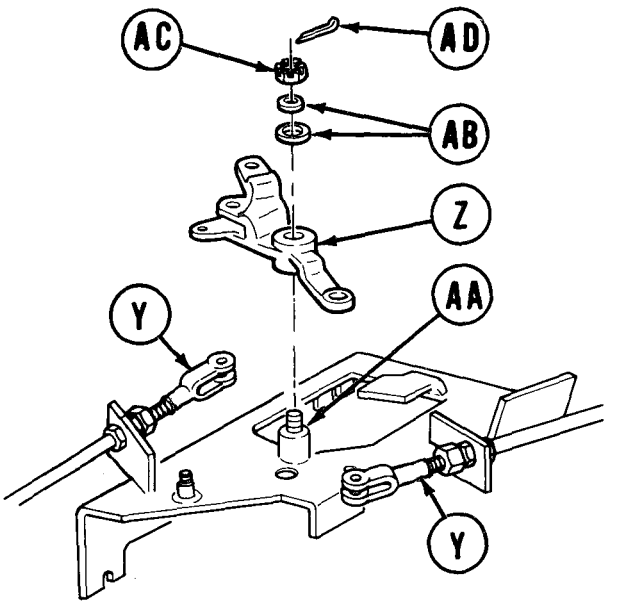
24. Install two flat washers (AB) onto stud (AA).

25. Install nut (AC) onto stud. Using 9/16 inch socket and torque wrench, tighten nut (AC) to 19-21 lb-ft (26-34 N·m).

26. Back off nut (AC) to aline slots in nut with hole in stud (AA).

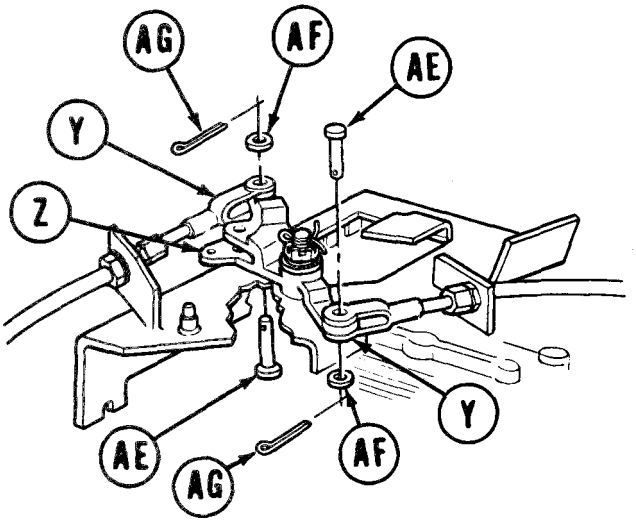
27. Install cotter pin (AD) through stud (AA) hole. Using long nosed pliers, bend cotter pin (AD) to prevent it from falling out.

28. Position both clevises (Y) to bellcrank (Z).

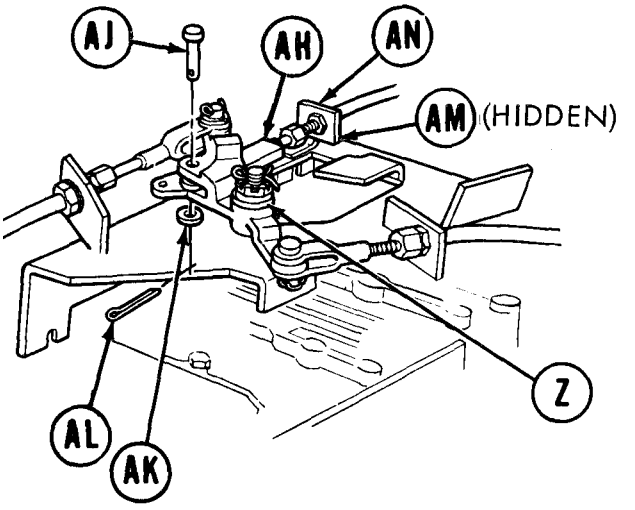


29. Install pins (AE) and washers (AF) to secure clevis (Y) to bellcrank (Z).

30. Install cotter pins (AG), through hole in pins (AE).
Using long nosed pliers, bend cotter pins (AG) to prevent them from falling out.



31. Using screwdriver to hold clevis (Z), use 9/16 inch crow foot and torque wrench to tighten nuts (X) to 28-30 lb-ft (38-41 N·m).



32. Position cable connector (AH) to bellcrank (Z). Install pin (AJ) and washer (AK) through bellcrank (Z) and cable connector (AH).

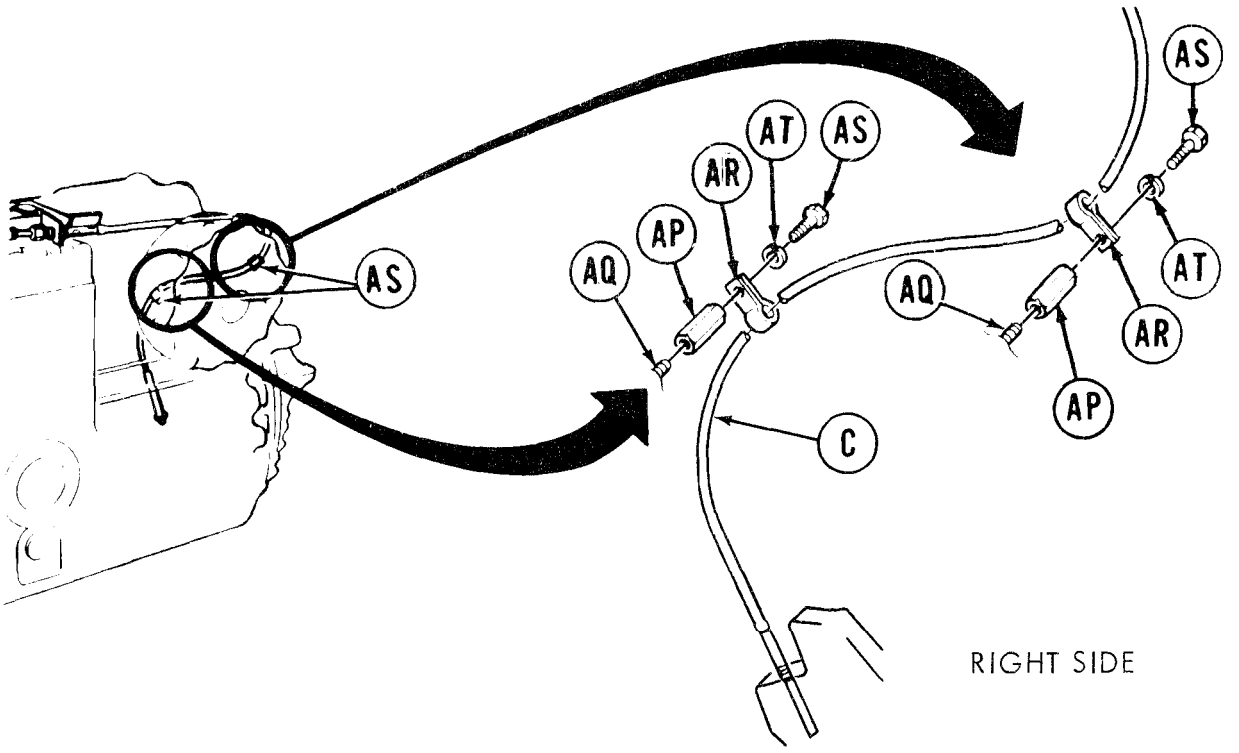
33. Using pliers, install cotter pin (AL) through hole in pin (AJ). Bend cotter pin (AL) to keep it from falling out.

34. Using 9/16 inch socket, install two screws (AM) seeming bracket (AN).

Go on to Sheet 14

TA249503

PARKING BRAKE CONTROL ASSEMBLY (ENGINE COMPARTMENT) REPLACEMENT (Sheet 14 of 15)



35. Using 3/4 inch socket, install both spacer nuts (AP) to studs (AQ). Using torque wrench, tighten nuts (AP) to 54-59 lb-ft (72-80 N·m).

36. Using screwdriver to pry open, position clamps (AR) on control assembly (C).

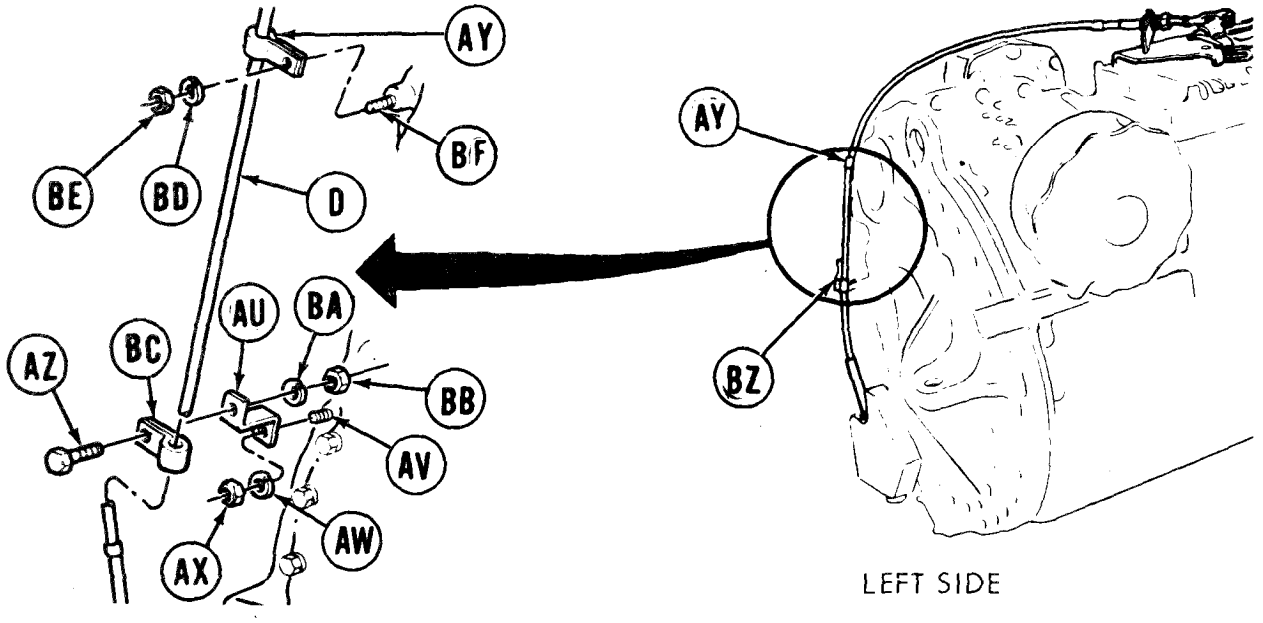
37. Install screws (AS) and washers (AT) to secure clamps (AR) Using 3/4 inch socket, tighten screws (AS).

38. Adjust clamps (AR) to maintain a minimum of 3/4 inch clearance between control assembly and turbocharger.

Go on to Sheet 15

TA249504

PARKING BRAKE CONTROL ASSEMBLY (ENGINE COMPARTMENT) REPLACEMENT (Sheet 15 of 15)



39. Position bracket (AU) on transmission stud (AV).

40. Install washer (AW) and nut (AX) to secure bracket (AU). Using 3/4 inch socket, tighten nu (AX).

41. Using torque wrench, tighten nut (AX) to 54-59 lb-ft (72-80 N·m).

42. Using screwdriver to pry open, install clamp (AY) on control assembly (D).

43. Install screw (AZ), lockwasher (BA) and nut (BB) to secure clamp (BC) to bracket (AU).

44. Using 7/16 inch open end wrench to hold nut (BB) and 7/16 inch socket and torque wrench on screw (AZ), tighten screw (AZ) to 6-8 lb-ft (8-11 N·m).

45. Adjust champ (AY) to allow clearance between control assembly and transmission oil filler tube bracket.

46. Install washer (BD) and nut (BE) to secure clamp (AY) to stud (BF).

47. Using 3/4 inch socket, universal joint, and extension, tighten nut (BE).

48. Using torque wrench, tighten nut (BE) to 54-59 lb-ft (72-80 N·m).

49. Adjust clamp to maintain minimum 3/4 inch clearance between control assembly (D) and turbocharger.

50. Perform parking brake pawl and bellcrank adjustment (page 13-136).

51. Install powerplmt (page 5-14).

52. Remove blocks from tracks and place shift lever in P (park) (TM 5-5420-202-10).

TA249505

End of Task

PARKING BRAKE CONTROL ASSEMBLY REPLACEMENT (REAR ONLY OF TWO PIECE) (Sheet 1 of 6)

PROCEDURE INDEX

TOOLS: 7/16 inch combination box and open end wrench
9/16 inch combination box and open end wrench
7/8 inch combination box and open end box wrench
15/16 inch combination box and open end box wrench
7/8 inch crowfoot wrench with 3/8 inch drive
9/16 inch socket with 3/8 inch drive
5 inch extension with 3/8 inch drive
Adjustable wrench
Ratchet with 3/8 inch drive
Slip joints pliers
Torque wrench with 3/8 inch drive (0-600 lb-in)

SPECIAL TOOLS: None

PERSONNEL: Two

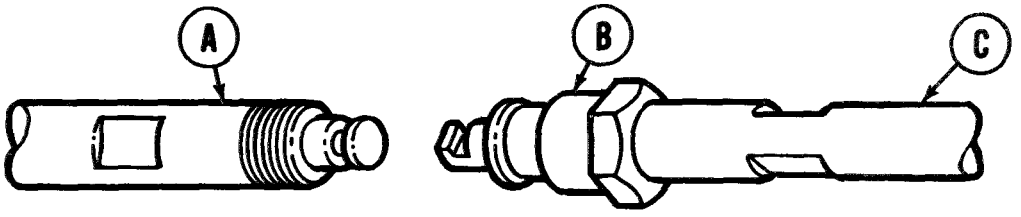
SUPPLIES: Control assembly - rear Packing
Lockwasher

PRELIMINARY PROCEDURES: Place shift lever in P (park) position. (TM 5-5420-202-10)

PARKING BRAKE CONTROL ASSEMBLY REPLACEMENT (REAR ONLY OF TWO-PIECE) (Sheet 2 of 6)

REMOVAL:

1. At flats, use an adjustable wrench to hold control assembly (A), use 7/8 inch wrench to loosen disconnect nut (B) on control assembly (C).



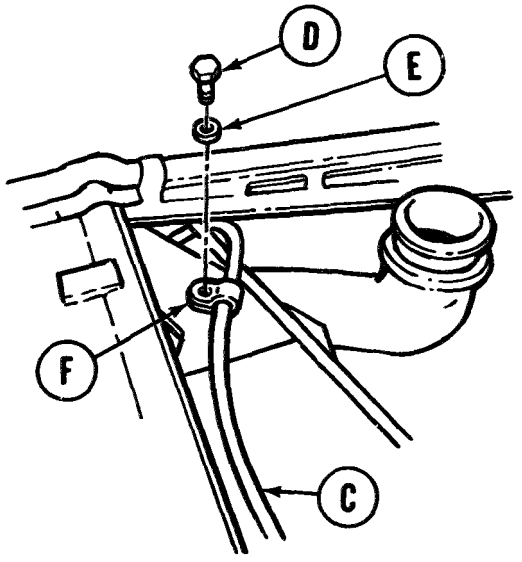
2. With shift lever in P (park) position, manually move bellcrank at top of transmission to the N (neutral) position (turn clockwise).

NOTE

This will force the two control assemblies (A and C) to open up at the disconnect point.

3. Manually disconnect the inner pushrods of the control assemblies (A and C).

4. Using 7/16 inch wrench, remove screw (D), washer (E), and clamp (F) securing control assembly (C) to the boss on top of transmission.

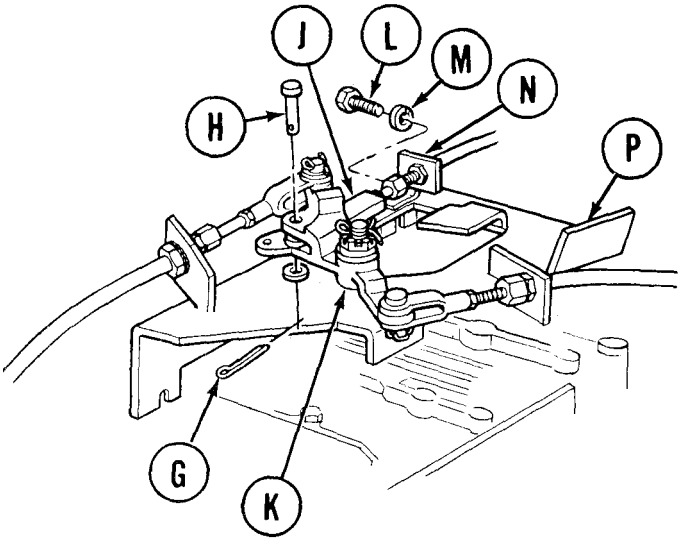


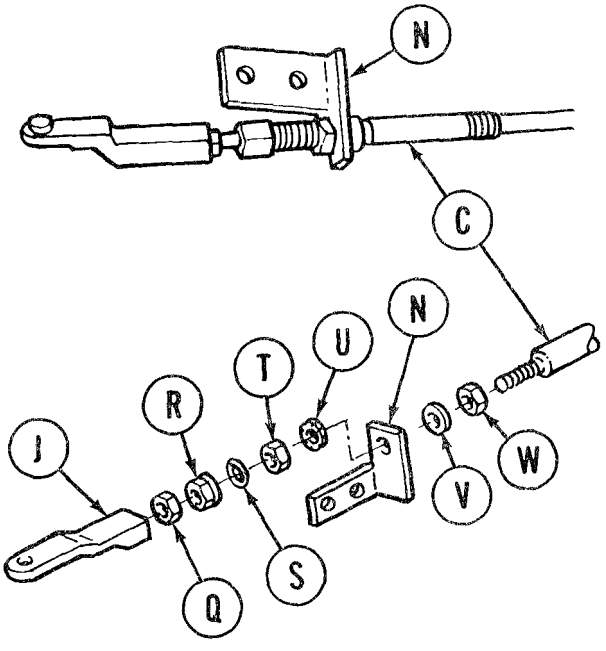
TA249507

PARKING BRAKE CONTROL ASSEMBLY REPLACEMENT (REAR ONLY OF TWO-PIECE) (Sheet 3 of 6)

5. At transmission bellcrank assembly using pliers, remove clip (G) and pin (H) securing connector (J) to bellcrank (K).

6. Using a 9/16 inch socket and extension, remove two screws (L), washers (M) and bracket (N) from bracket assembly (P).





7. Using 9/16 inch wrench on nut (Q) and adjustable wrench, remove connector (J) and nut (Q).

8. Us an adjustable wrench to hold support bracket (N). Using a 15/16 inch wrench, remove nut (R) and preformed packing (S). Throw away packing (S).

9. Using a 15/16 inch wrench, remove nut (T) and lockwasher (U) from control assembly (C). Remove support bracket (N) and lockwasher (V).

10. Using a 15/16 inch wrench, remove nut (W) from control assembly (C).

TA249508

PARKING BRAKE CONTROL ASSEMBLY REPLACEMENT (REAR ONLY OF TWO-PIECE) (Sheet 4 of 6)

INSTALLATION:

CAUTION

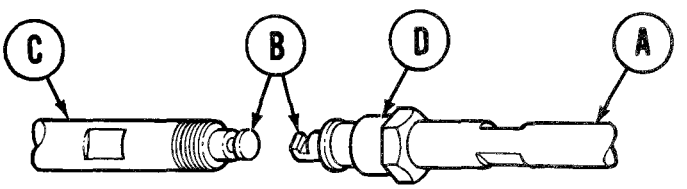
Make sure the metal casing of control assembly (A) is free to rotate at both ends so as not to cause birding of the inner pushrod.

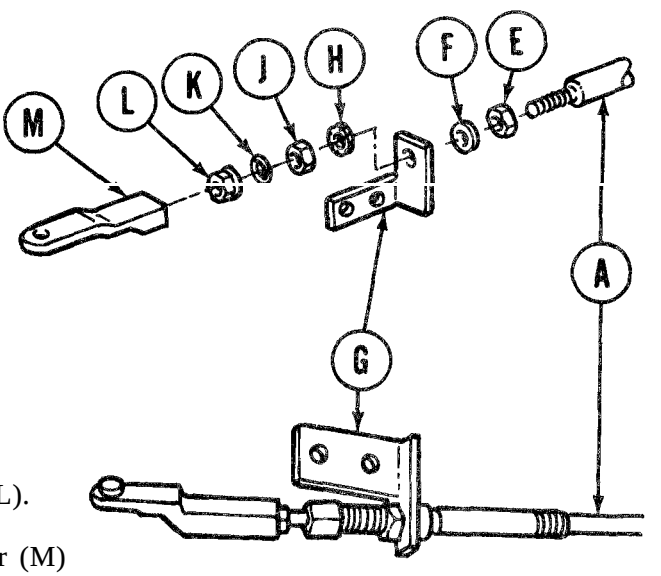
1. With the shift lever in P (park) position and the bellcrank in the N (neutral) position, place the inner pushrods (B) of the control assemblies (A and C) in connected position and hold, while second mechanic manually moves bellcrank to the P (park) position.

NOTE

Moving the bellcrank to the P (park) position will close the gap between the control assemblies (A and C).

2. Manually tighten disconnect nut (D) on control assembly (A) finger tight.





3. Using a 15/16 inch wrench, install nut (E).
4. Install lockwasher (F) bracket (G) and lockwasher (H) on control assembly (A).
5. Using 15/16 inch wrench install nut (J).
6. Install new packing (K) in nut (L).
7. Using a 15/16 inch wrench, install new nut (L).
8. Using an adjustable wrench, install connector (M) on end of control assembly (A).

TA249509

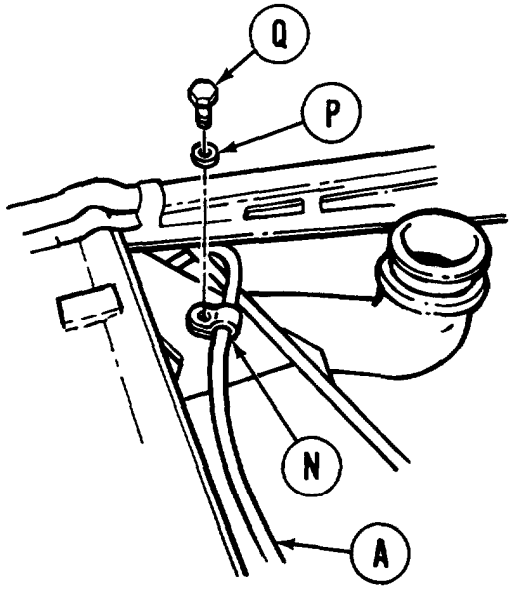
PARKING BRAKE CONTROL ASSEMBLY REPLACEMENT (REAR ONLY OF TWO-PIECE) (Sheet 5 of 6)

CAUTION

Do not force control (A) to rotate on top of transmission. Gently twist control (A) at metal casing until it lays smoothly. Forcing control (A) will cause damage.

9. Position control assembly (A) on top of transmission.

10. Position clamp (N) on control assembly (A). Using 7/16 inch wrench secure clamp (N) to boss on transmission with washer (P) and screw (Q).



TA249510

PARKING BRAKE CONTROL ASSEMBLY REPLACEMENT (REAR ONLY OF TWO-PIECE) (Sheet 6 of 6)

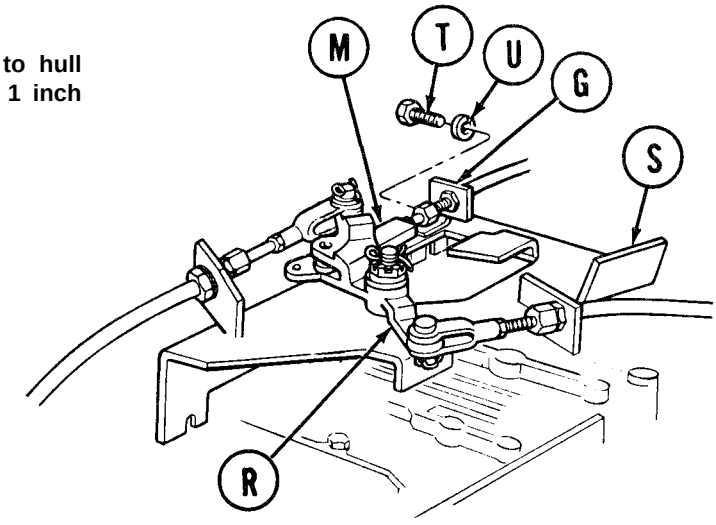
11. Position connector (M) in bellcrank assembly (R). Using a 9/16 inch socket and extension, install bracket (G) to bracket assembly (S) with two screws (T) and lockwashers (U).

NOTE

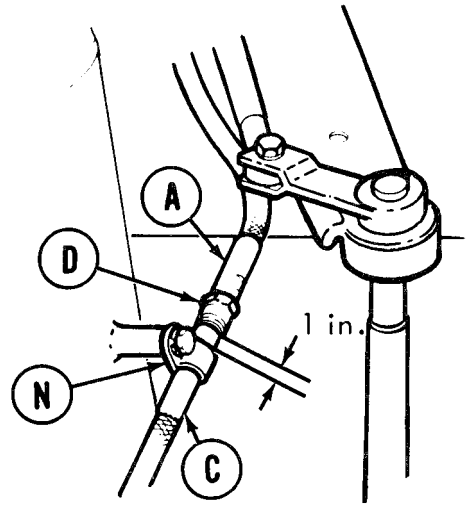
Pin and clip securing connector (M) to bellcrank (R) need not be installed until adjustment procedure is performed.

CAUTION

Make sure control assembly (C) is secured to hull wall with clamp (N) located on metal casing, 1 inch below disconnect nut (D).



12. Using adjustable wrench on flats of control assembly (A), and torque wrench with 7/8 inch crow foot tighten disconnect nut (D) to 35-50 lb-in (3.9 to 5.7 N.m).



13. Perform parking brake control assembly adjustment (page 13-132).

END OF TASK

TA249511

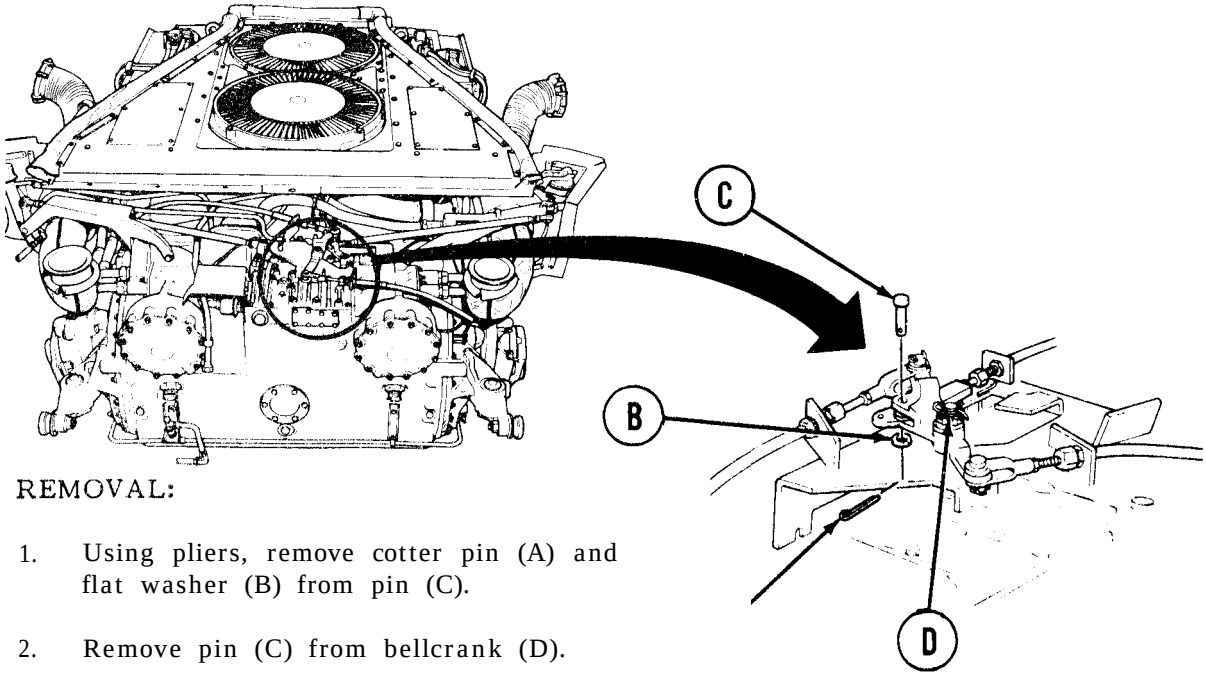
BELLCRANK REPLACEMENT (Sheet 1 of 4)

PROCEDURE INDEX

TOOLS: 9/16 in. combination box and open end wrench
Torque wrench with 1/2 in. drive (0-175 lb-ft) (0-237 N·m)
Long round nose pliers (needle nose)
Bench vise
Vise jaw caps
1 lb. hammer
Punch drive pin 3/8 in. dia.
9/16 in. socket with 1/2 in. drive

SUPPLIES: Bushing

PRELIMINARY PROCEDURES: Block tracks (TM 5-5420-202-10)
Place transmission in N (neutral) (TM 5-5420-202-10)
Remove transmission shroud (page 9-2).



REMOVAL:

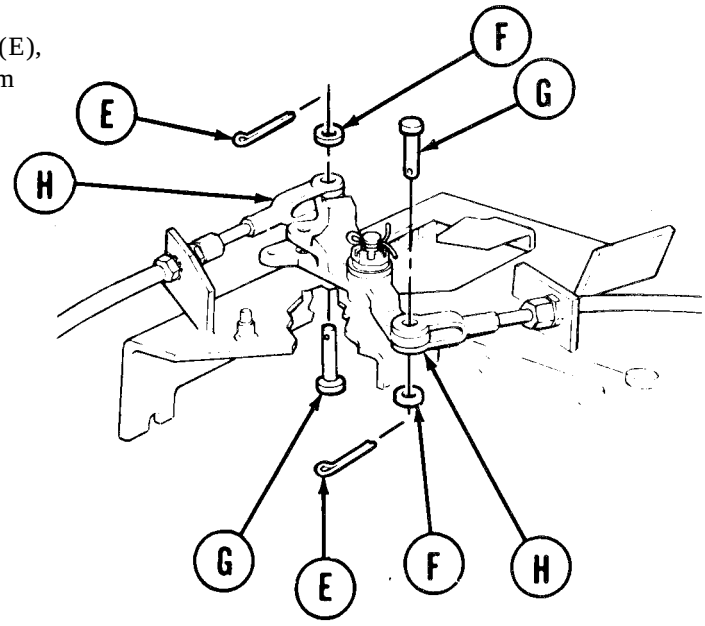
1. Using pliers, remove cotter pin (A) and flat washer (B) from pin (C).
2. Remove pin (C) from bellcrank (D).

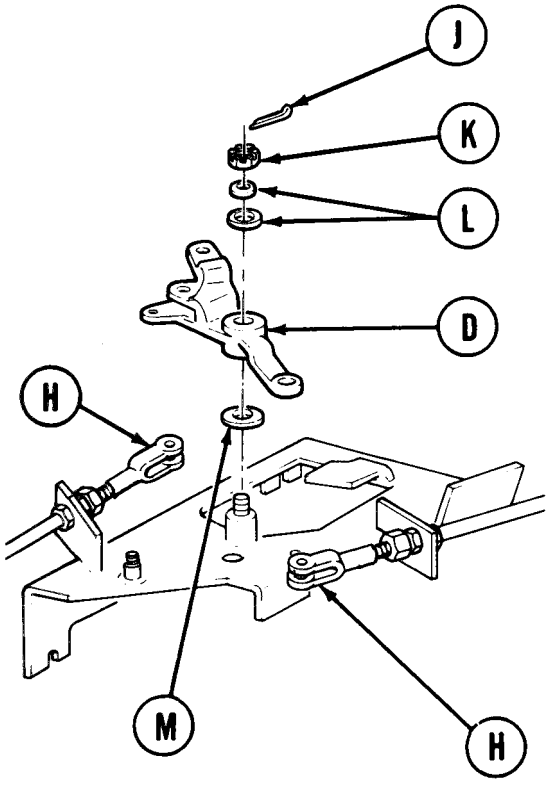
Go on to Sheet 2

TA249512

BELLCRANK REPLACEMENT (Sheet 2 of 4)

3. Using pliers, remove two cotter pins (E), two washers (F), and two pins (G) from clevises (H).





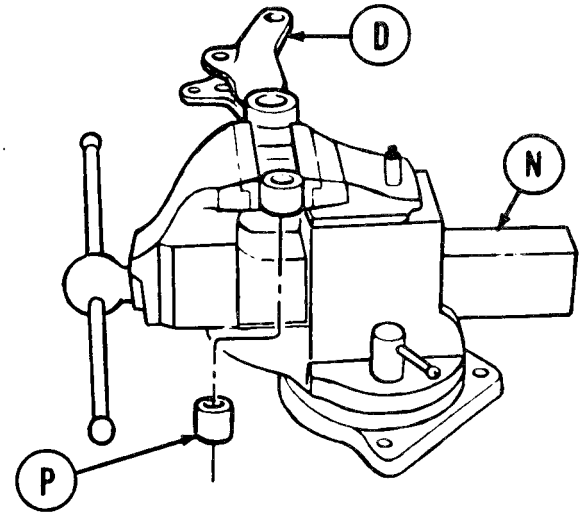
4. Using pliers, remove cotter pin (J).

5. Using 9/16 inch wrench, remove nut (K) and two flat washers (L).

6. Displace clevises (H).

7. Remove bellcrank (D) and flat washer (M).

8. Place vise jaw caps on jaws of bench vise (N).



9. Place bellcrank (D) in bench vise (N).

10. Using punch and hammer, drive out bearing (P) from bellcrank (D).

Go on to Sheet 3

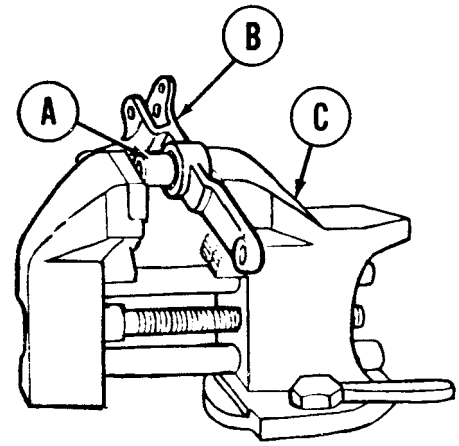
TA249513

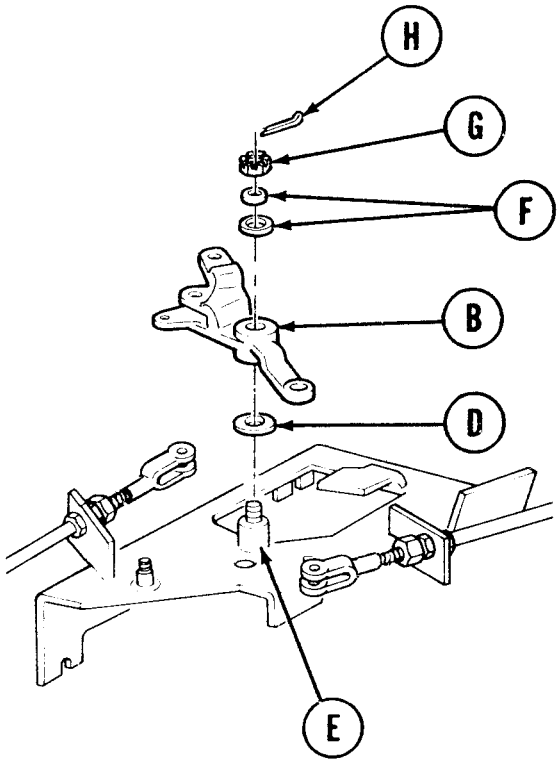
BELLCRANK REPLACEMENT (Sheet 3 of 4)

INSTALLATION:

1. Place new bushing (A) in position in bellcrank (B).

2. Using vise (C) with vise jaw caps on jaws, press bushing (A) into bellcrank (B).





3. Place flat washer (D) and bellcrank (B) in position on control bracket stud (E).

4. Place two flat washers (F) and nut (G) in position on top of bellcrank (B) and onto control bracket stud (E).

5. Using 9/16 inch socket and torque wrench, tighten nut (G) to 19-21 lb-ft (26-28 N•m).

6. Aline slot of nut (G) with hole of control bracket stud (E).

7. Using pliers, install new cotter pin (H). Bend cotter pin (H) so that it will not fall out.

Go on to Sheet 4

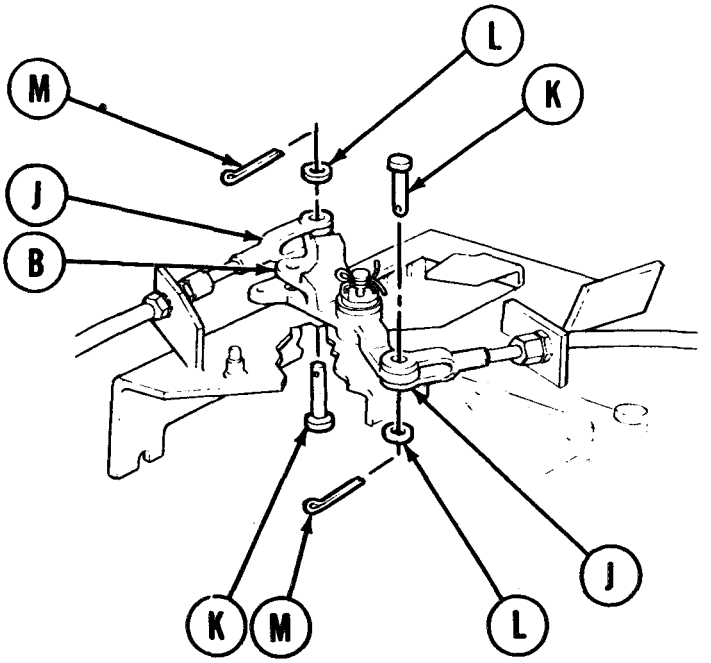
TA249514

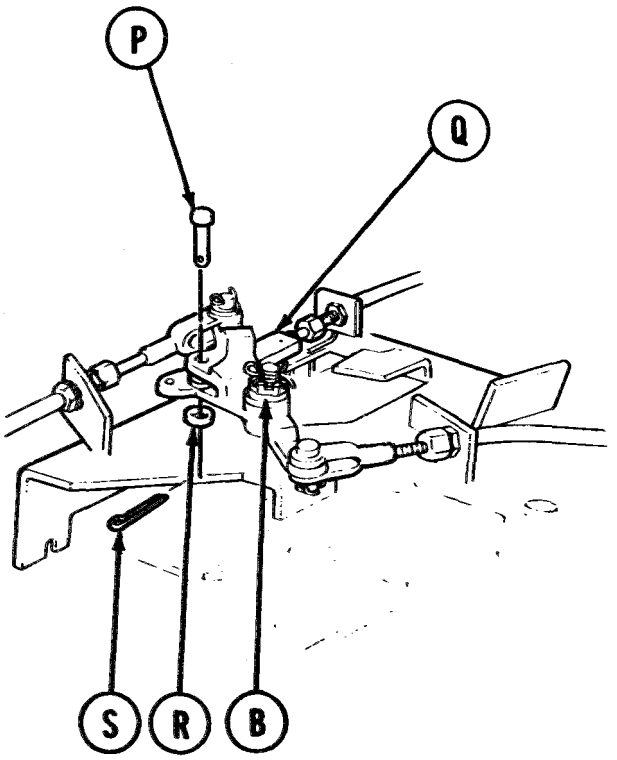
BELLCRANK REPLACEMENT (Sheet 4 of 4)

8. Aline holes of bellcrank (B) with holes in both clevises (J).

9. Place two pins (K) through both clevises (J) and bellcrank (B).

10. Using pliers, install two flat washers (L) and two cotter pins (M).





11. Place pin (P) through cable (Q) and bellcrank (B).

12. Using pliers, install flat washer (R) and cotter pin (S). Bend cotter pin so it will not fall out.

13. Install transmission shroud (page 9-6).

14. Remove blocks from tracks (TM 5-5420-202-10).

15. Place shift lever into P (park) (TM 5-5420-202-10).

End of Task

TA249515

PARKING BRAKE CABLE ADJUSTMENT (Sheet 1 of 4)

TOOLS: 15/16 in. open end wrench (2 required)
Ratchet with 1/2 in. drive
Slip joint pliers
6 in. ruler
Torque wrench with 1/2 in. drive (0-175 lb-ft) (0-237 N•m)
Adapter socket, 3/8 in. to 1/2 in. drive
15/16 in. crowfoot attachment with 1/2 in. drive

SUPPLIES: Cotter pins
Pencil (Item 71, Appendix D)
Pin (1/8 in. diameter welding rod, 4 in. long)
Paper (Item 72, Appendix D)

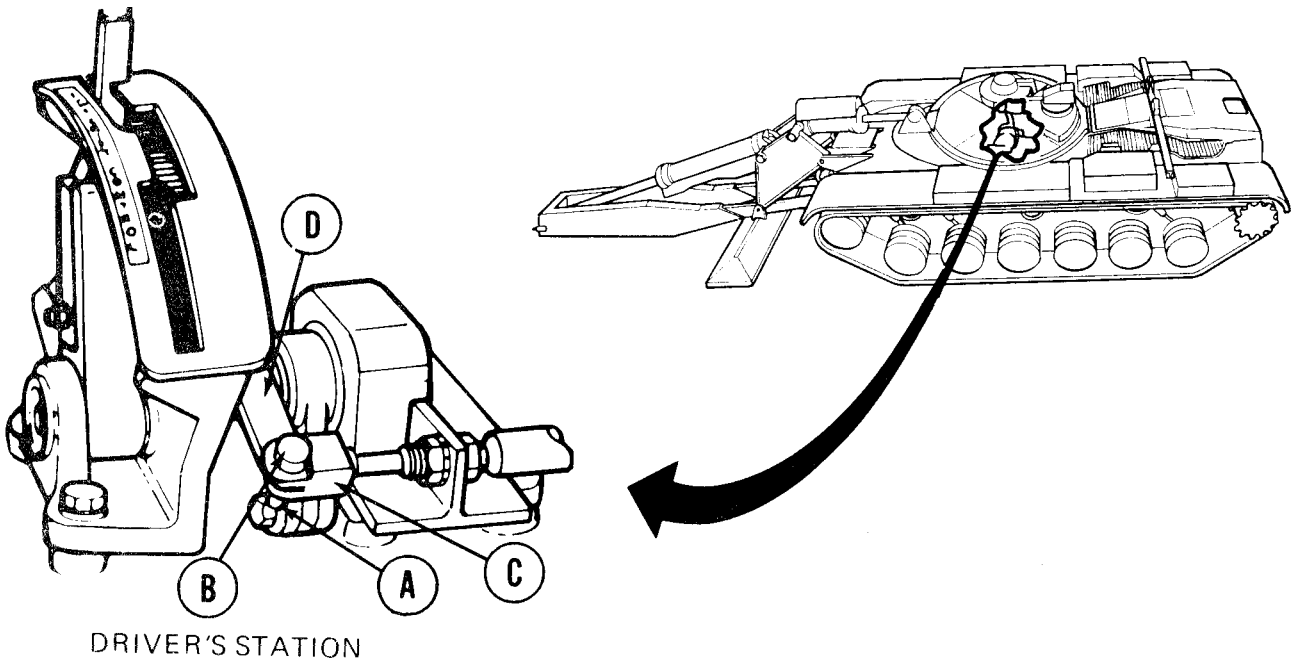
REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Remove transmission shroud (page 9-2)
Block vehicle tracks (TM 5-5420-202-10)

CABLE ADJUSTMENT:

1. Set transmission shift lever to P (park) position (TM 5-5420-202-10).

2. Using pliers, remove cotter pin (A) and pin (B) holding brake cable clevis (C) to parking brake lever (D).

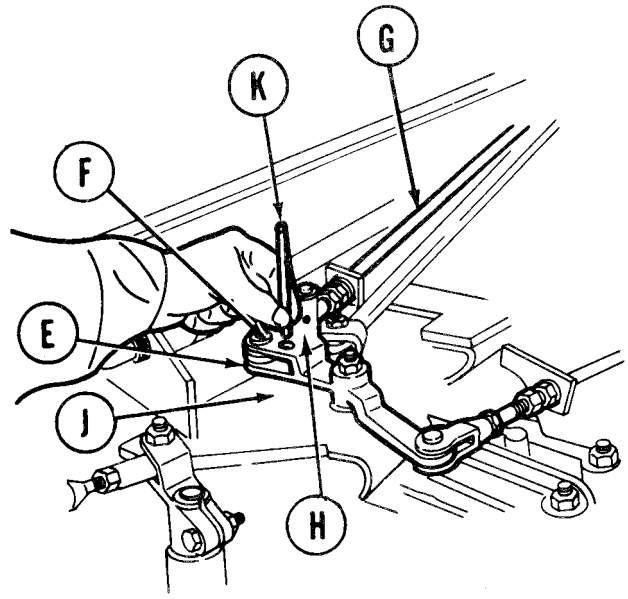


Go on to Sheet 2

TA249516

PARKING BRAKE CABLE ADJUSTMENT (Sheet 2 of 4)

3. Using pliers, remove clip (E) and pin (F) holding brake cable (G) to belhcrank (H) at brake controls bracket (J).



4. Rotate bellcrank (H) to aline holes in bellcrank (H) with hole in brake controls bracket (J). Insert 1/8 inch pin (K) through bellcrank (H) and bracket (J).

NOTE

Pin (K) must slide up and down freely while performing the remaining adjustments.

5. Push parking brake cable (G) inward until it stops.

6. Check forward end of cable at driver's compartment for free movement.

Go on to Sheet 3

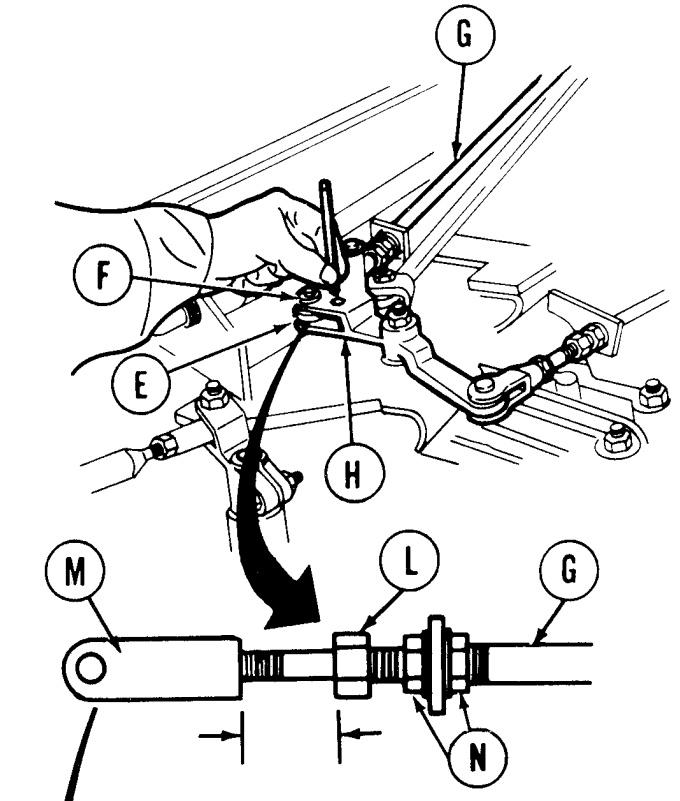
TA249517

PARKING BRAKE CABLE ADJUSTMENT (Sheet 3 of 4)

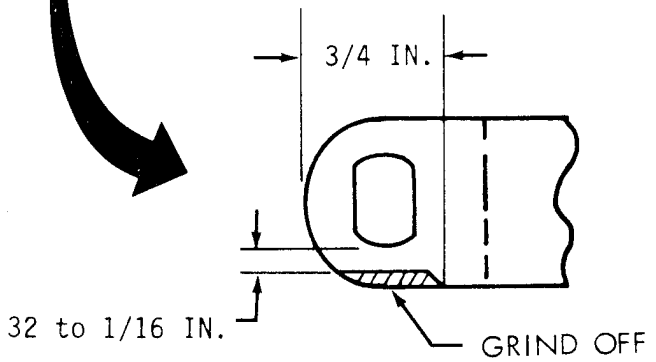
7. Using ruler, measure distance between nut (L) and connector (M) after brake cable (G) is pushed inward as far as possible. Record reading.

8. Pull brake cable (G) outward 3/4 inch farther than reading taken in step 7.

NOTE
Do not change 3/4 inch position when performing step 9.



9. If pin cannot be freely inserted in connector (M), using 15/16 inch wrench, loosen two nuts (N) and adjust cable travel maintaining distance in step 8 until connector (M) and bellcrank (H) will aline. Tighten two nuts (N) after inserting pin and clip. Tighten nuts (N) to 45-50 lb-ft (61-68 N.m).



NOTE

An interference may exist between clevis and locating pin during this adjustment procedure. It may be necessary to grind clevis as shown to eliminate this interference.

Go on to Sheet 4

TA249518

PARKING BRAKE CABLE ADJUSTMENT (Sheet 4 of 4)

10. Install parking brake cable clevis (C) to parking brake lever (D), using pin (B) and cotter pin (A).

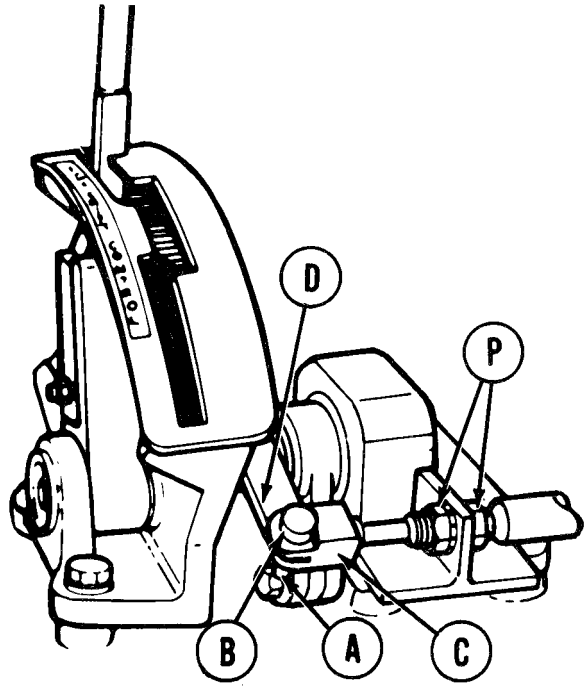
11. If clevis (C) will not aline with parking brake lever (D), using two 15/16 inch wrenches, loosen two nuts (P) and adjust cable until clevis (C) alines with lever (D). Install pin (B) and cotter pin (A).

12. Remove locating pin (K) installed in step 4.

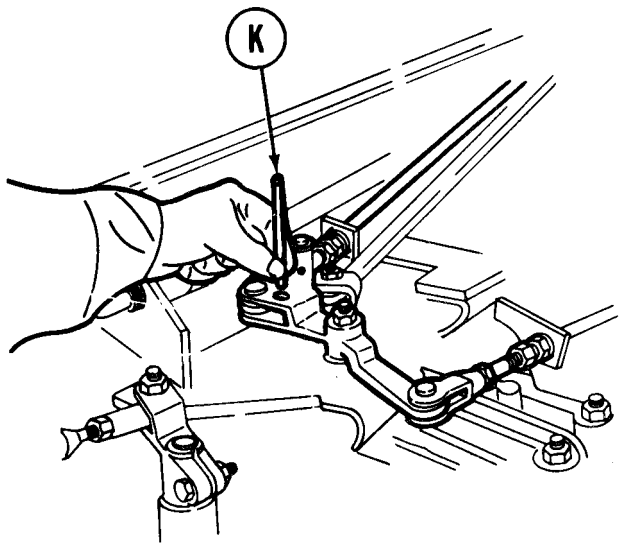
13. Check parking brake for normal operation.

14. Install transmission shroud (page 9-6).

15. Remove blocks from vehicle tracks (TM 5-5420-202-10).



DRIVER'S STATION



End of Task

TA249519

PARKING BRAKE PAWL AND BELLCRANK ADJUSTMENT (Sheet 1 of 9)

TOOLS: 15/16 in. combination box and open end wrench (2 required)
9/16 in. combination box and open end wrench (2 required)
1/2 in. combination box and open end wrench
Ratchet with 1/2 in. drive
7/16 in. socket with 1/2 in. drive
Pry bar
Slip joint pliers

FABRICATED TOOLS: Gage block, 3/16 inch
Gage block, 15/16 inch
Gage block, 1-1/8 inch

SUPPLIES: Locating pin (1/8 in. drill or welding rod 4 in. long)
Cotter pin (4 required)
Gasket (2 required)
Lockwasher (8 required)

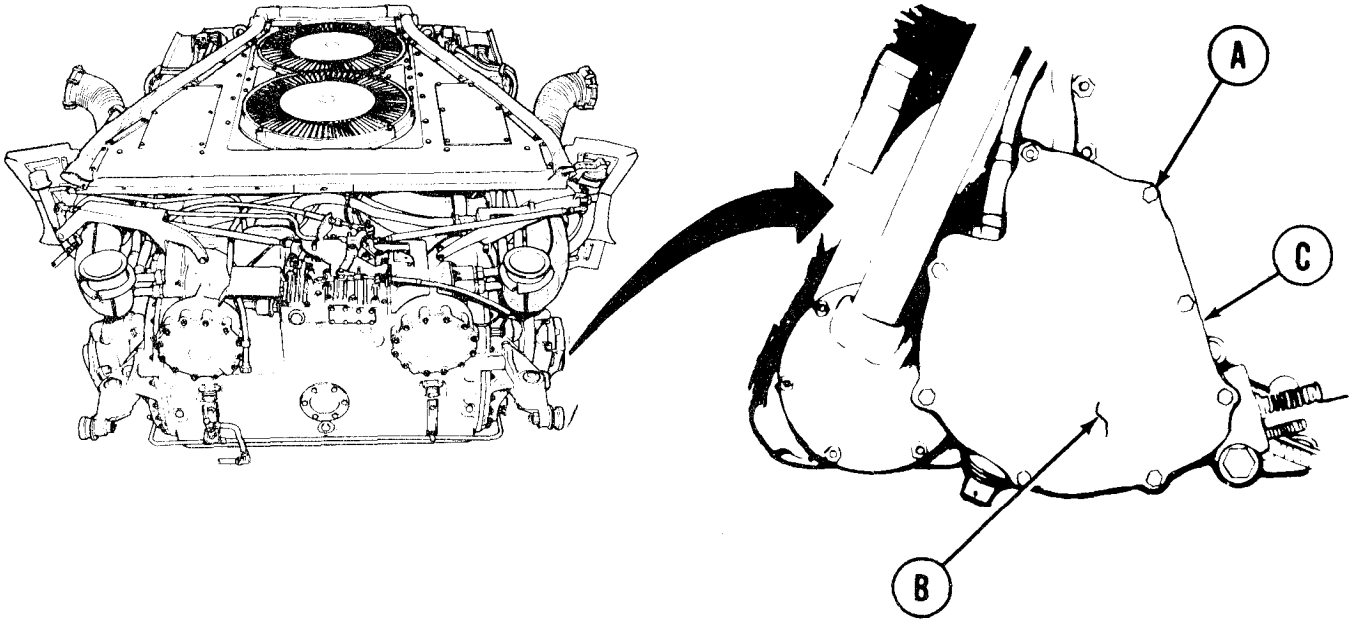
PRELIMINARY PROCEDURES: Remove powerplant (page 5-2)

NOTE

If your vehicle is equipped with the two-piece control assembly, it must be separated at the disconnect.

ADJUSTMENT:

1. Using socket, remove eight nuts and lockwashers (A) securing cover and gasket (B) to brake housing assembly (C). Remove cover and gasket. Throw gaskets and Lockwashers away.



Go on to Sheet

TA249520

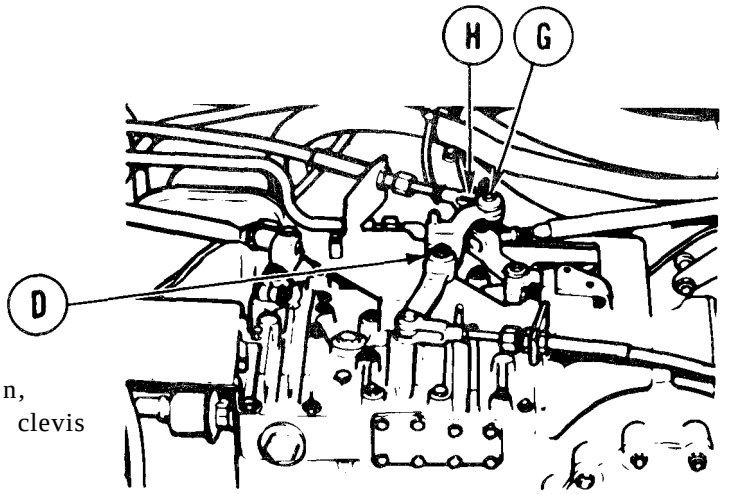
PARKING BRAKE PAWL AND BELLCRANK ADJUSTMENT (Sheet 2 of 9)

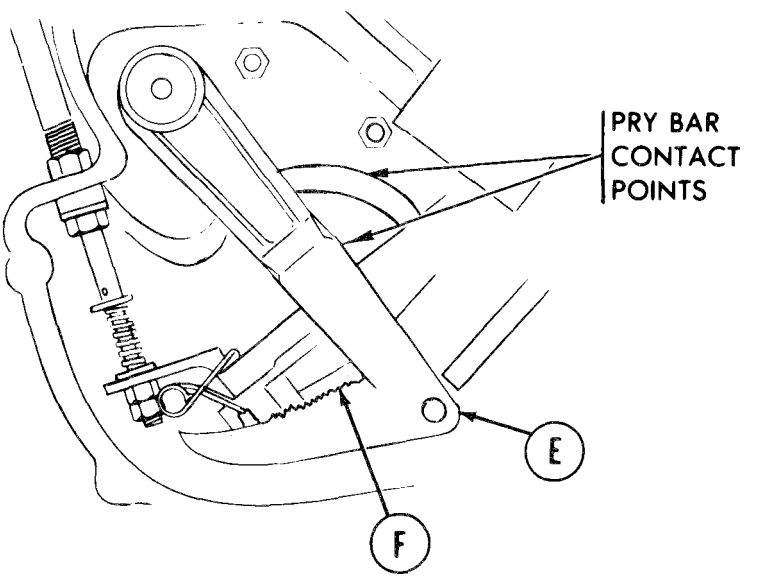
2. Using pry bar, rotate bellcrank (D) counterclockwise to park postion.

NOTE

Observe during the following steps that some vehicles may have clips rather than cotter pins. Clips should be reused and cotter pins replaced.

3. Using slip joint pliers, remove cotter pin, washer, and pin (E) holding brake cable clevis (F) to bellcrank (D).





TA249521

Go on to Sheet 3

PARKING BRAKE PAWL AND BELLCRANK ADJUSTMENT (Sheet 3 of 9)

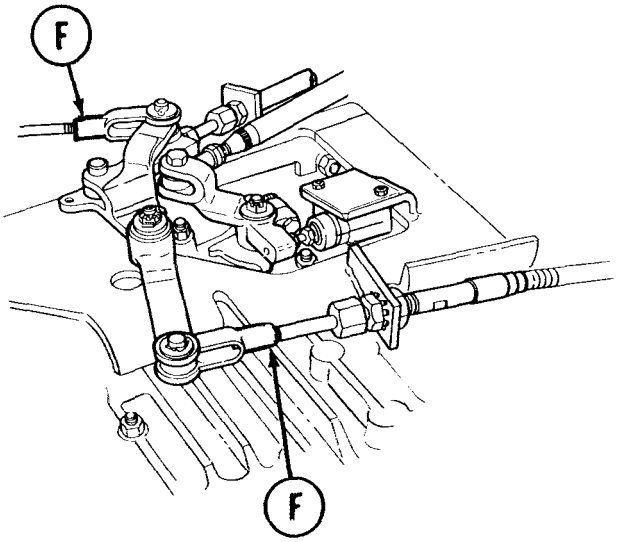
4. At side housing assembly, hold control (G) at flats using oPen end of 9/16 in. wrench and loosen jam nut (H) with a 15/16 in. wrench. Continue holding control (G). Finger tighten nut (J) until nut bottoms on control (G). Tighten nut (H) with a 15/16 in. wrench.

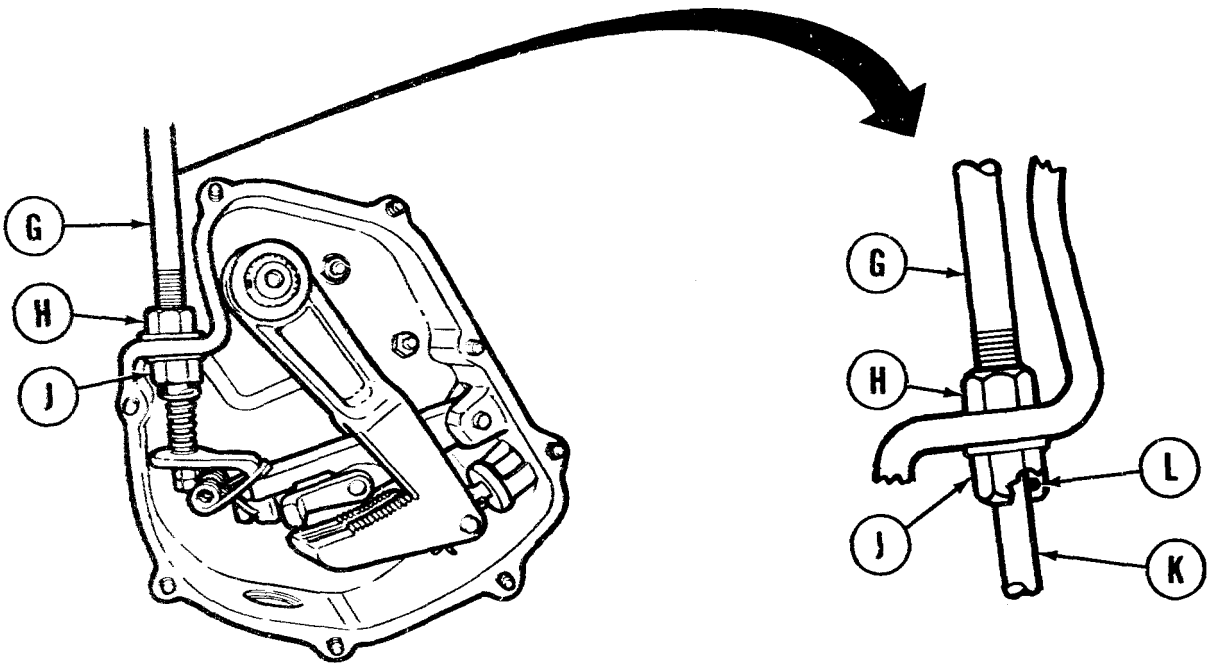
CAUTION

Do not tighten nut (J) with wrench as shaft (K) to control (G) binding will occur. Finger tighten nut

5. Push and pull on clevis (F) to verify shaft (K) movement is free of binding. If free movement occurs, proceed to next step. If binding occurs, back-off sleeve nut (J). Visibly inspect packing (L) for damage. Refer to page 3-70 for removal procedure.

   DO NOT REPLACE PACKING. When complete, repeat step 4.



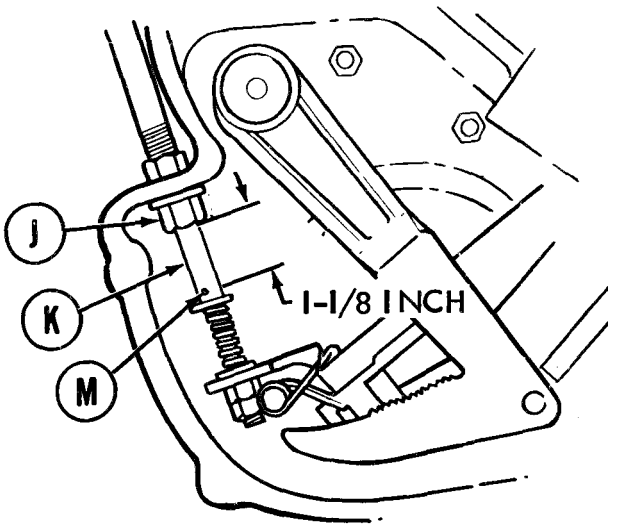


Go on to Sheet 4

TA249522

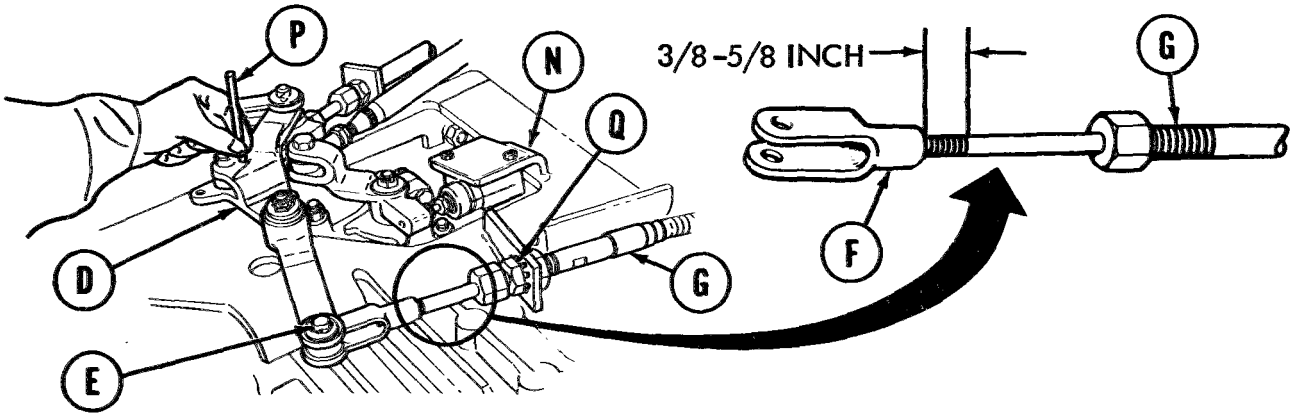
PARKING BRAKE PAWL AND BELLCRANK ADJUSTMENT (Sheet 4 of 9)

6. Push/pull cable (K) until 1-1/8 inch gage block just fits between cotter pin (M) and sleeve nut (J) (15/16 inch gage block for one-piece lever and pawl). At top of transmission? rotate bellcrank assembly (D) to aline holes in bellcrank (D) and bracket (N). Insert 1/8 inch locating pin (P) through holes in bellcrank (D) and bracket (N).



NOTE

While performing steps 8 and 9, locating pin (P) must slide up and down freely in alinement holes. Clevis (F) must be positioned on control (G) so that 3/8 to 5/8 inch thread is remaining.



8. Using two 15/16 inch wrenches, loosen two nuts (Q) and adjust control assembly (6) until clevis pin (E) slides freely in the respective holes. If clevis (F) bids at bellcrank, rotate clevis (F) until bind no longer occurs.

9. Using two 15/16 inch wrenches, tighten nuts (Q), install devis pin (E) and, using pliers, install washer and cotter pin on clevis pin (E).

10. Remove 1-1/8 inch gage block from side housing assembly.

NOTE

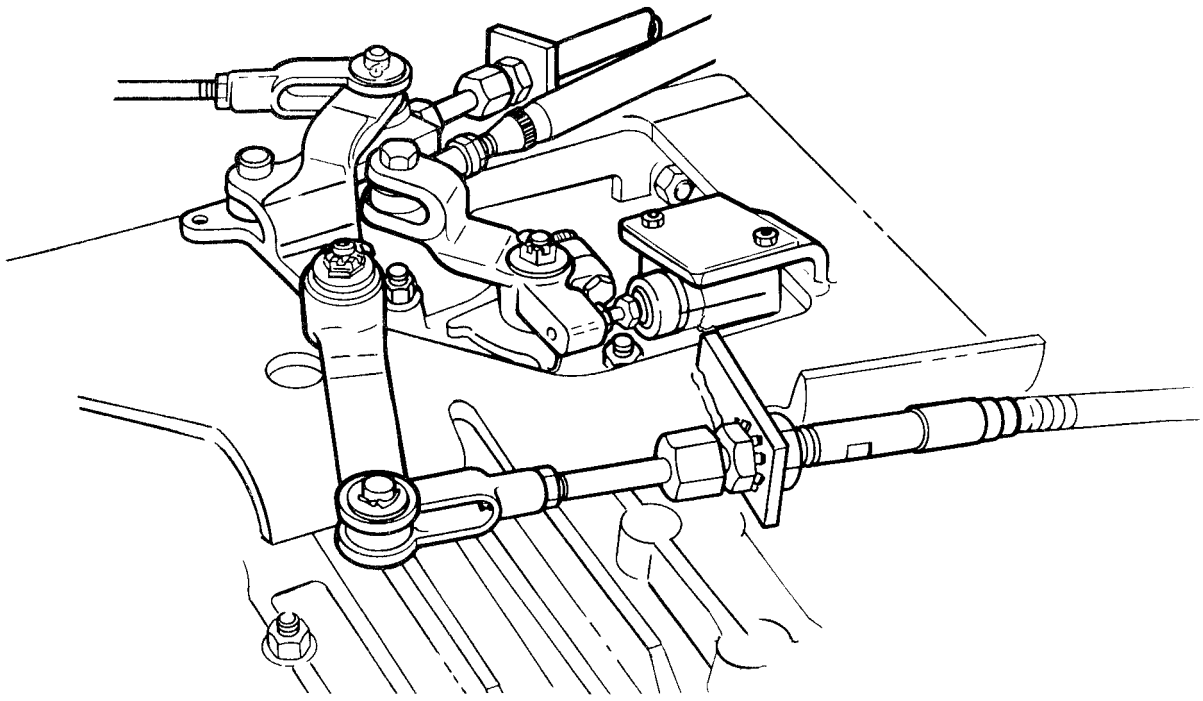
Before proceeding, bellcrank assembly (D) must be free of binding. Remove 1/8 inch locating pin. Rotate (left-right) to check for free movement. If bellcrank assembly movement is free, go on to step 11.

If binding still occurs, nofity support maintenance of problem.

Go on to Sheet 5

TA249523

PARKING BRAKE PAWL AND BELLCRANK ADJUSTMENT (Sheet 5 of 9)



NOTE

For vehicles equipped with the one-piece lever and pawl with two jam nuts, do steps 11 thru 14.

For vehicles equipped with the multi-piece lever and pawl with two jam nuts, do steps 15 thru 19.

For vehicles equipped with the multi-piece lever and pawl with interlocking jam nut, do steps 20 thru 24.

Insert 1/8 in. diameter locating pin in bellcrank assembly for steps 11 thru 24.

Go on to Sheet 6

TA249524

PARKING BRAKE PAWL AND BELLCRANK ADJUSTMENT (Sheet 6 of 9)

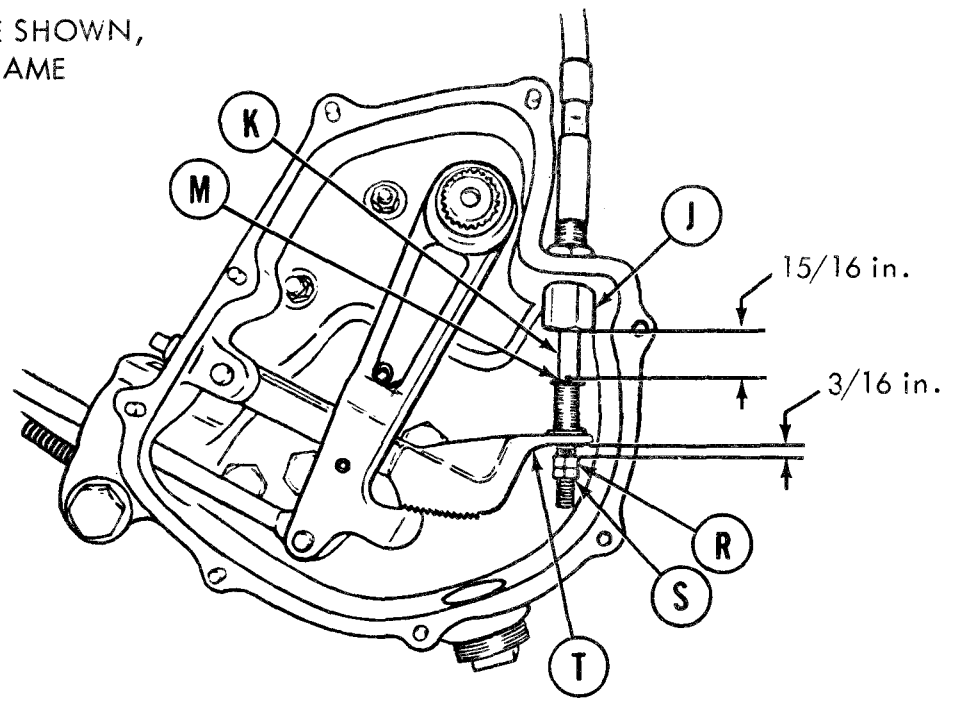
11. Using two 9/16 in. wrenches, loosen two nuts (R) and (S) on end of shaft (K). Do not allow shaft to turn or damage to control will result.

12. Push or pull shaft (K) until a 15/16 in. gageblock fits between cotter pin (M) and bottom face of sleeve nut (J).

13. Adjust upper nut (R) to allow a 3/16 in. gageblock to be placed between the lower face of lever (T) and upper nut (R).

14. Using two 9/16 in. wrenches, hold nut (R) and lock lower nut (S) securely against upper nut (R).

RIGHT SIDE SHOWN,
LEFT SIDE SAME



ONE-PIECE LEVER AND PAWL
WITH TWO JAM NUTS

Go on to Sheet 7

TA249525

PARKING BRAKE PAWL AND BELLCRANK ADJUSTMENT (Sheet 7 of 9)

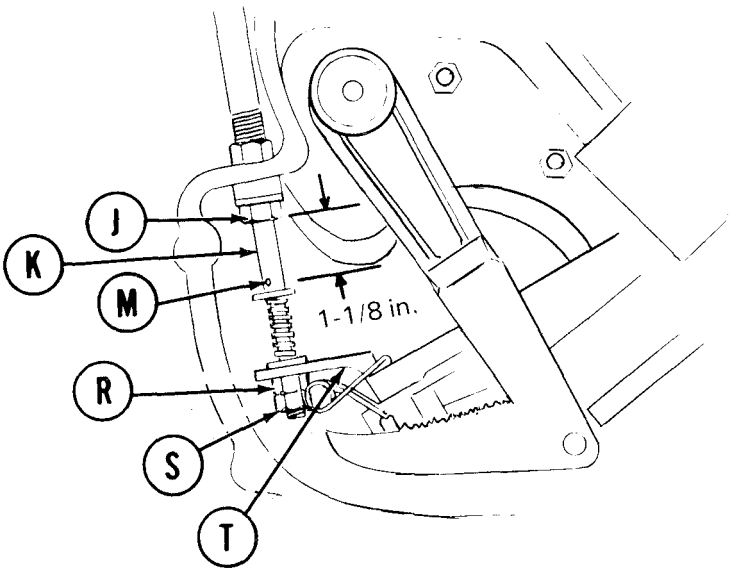
15. Using two 9/16 in. wrenches, loosen two nuts (R) and (S) on end of shaft (K). Do not allow shaft to turn or damae to control will result.

16. Push or pull shaft (K) until 1-1/8 in. gage block just fits between cotter pin (M) and sleeve nut (J).

17. With gage block in place, rotate upper nut (R) until metal to metal contact exists between upper nut (R) and lever assembly (T).

18. Using 9/16 in. wrench back off upper nut (R) 1-1/2 turns.

19. Using two 9/16 in. wrenches, hold nut (R) and lock lower nut (S) securely against upper nut (R).



MULTI-PIECE LEVER AND PAWL
WITH TWO JAM NUTS

Go on to Sheet 8

TA249526

PARKING BRAKE PAWL AND BELLCRANK ADJUSTMENT (Sheet 8 of 9)

20. In side housing assembly, remove cotter pin (M).

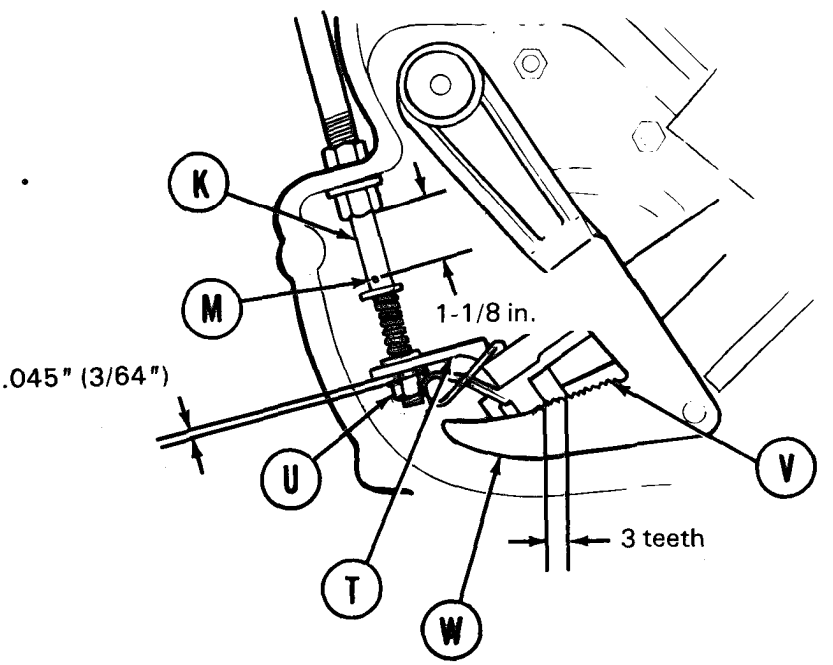
21. Remove 1-1/8 in. gage block from side housing assembly.

22. Lift lever assembly (T) up enough to disengage the lever from the vertical flats on nut (U). Turn nut (U) on shaft (K) until it just makes contact with lever assembly (T) when lever is let fully down and is in contact with pawl (V) and pawl is in contact with nonserrated portion of brake lever (W). When properly adjusted, pawl (V) will be loosely touching top of brake lever (W).

23. Using pry bar between housing and brake lever (W), move brake lever until the first three teeth on the brake lever (W) are fully engaged witht he other three teeth on pawl (V). Note distance between lever assembly (T) and nut (U), nut will clear level assembly by .045" (3/64") of an inch when proper adjustment has been made. If measurement is not as stated, go back to step 20 and readjust.

24. Install cotter pin through hole (M).

25. Repeat steps 1-24 for opposite side brake.



MULTI-PIECE LEVER AND PAWL
WITH INTERLOCKING JAM NUT

Go on to Sheet 9

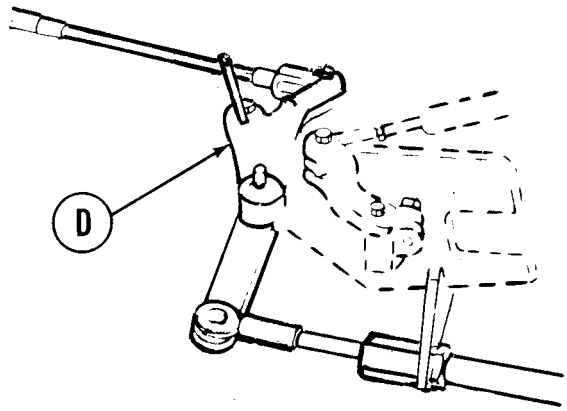
TA249527

PARKING BRAKE PAWL AND BELLCRANK ADJUSTMENT (Sheet 9 of 9)

26. Using pry bar, rotate bellcrank (D) clockwise to release brakes.

27. Using socket, install brake housing cover and new cover gasket.

28. Install powerplant (page 5-14).



End of Task

TA249528

CHAPTER 14

TRACKS AND SUSPENSION SYSTEM MAINTENANCE

INDEX

ROADWHEEL ARM REPLACEMENT (Sheet 1 of 7)

PROCEDURE INDEX

TOOLS: Punch
Hammer
3/4 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
Torque wrench with 1/2 in. drive (0-175 lb-ft) (0-237 N. m)
Internal puller
3/4 in. crowfoot wrench with 1/2 in. drive
3/4 in. combination box and open end wrench
Automotive wrench
Crowbar
5/8 in. socket with 1/2 in. drive
Mechanical puller adapter (12251805)
Slide hammer puller (5573 615)
Handle (7092881)

SPECIAL TOOLS: Seal inserter (Item 22, Chapter 3, Section I)

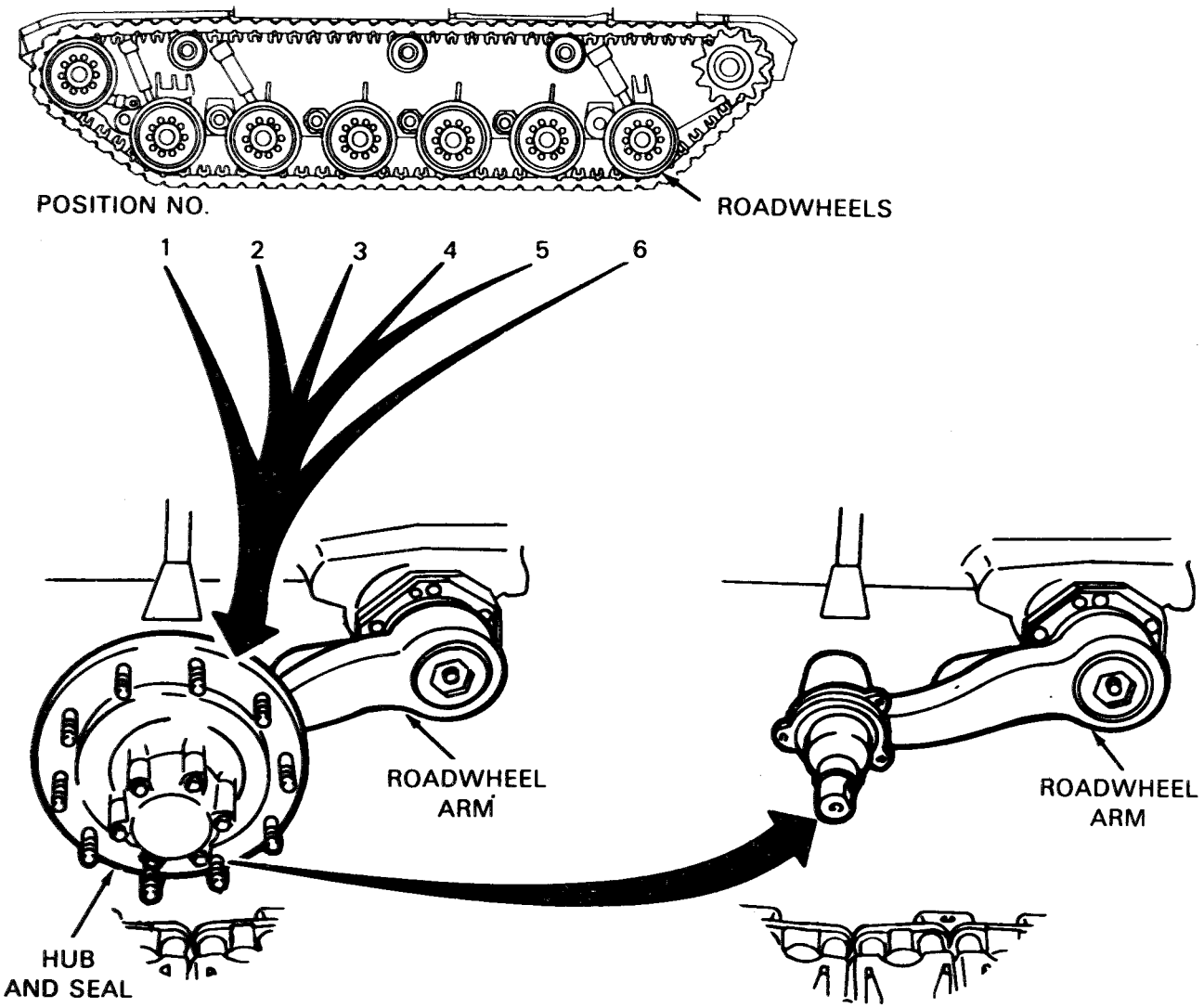
SUPPLIES: Gasket
Seal
Grease (Item 38, Appendix D)
5/8-13 UNC threaded screws (2 required)
Lockwashers (6 required)

PERSONNEL: Three

PRELIMINARY PROCEDURES: Remove roadwheels (page 14-51)
Remove wheel hub if necessary (page 14-15)
Remove torsion bar (page 14-24)
Remove shock absorbers when removing arms at roadwheel positions No. 1,2, and 6 (page 14-93)
Disconnect track adjusting link at No. 1 roadwheel position (page 14-55)

Go on to Sheet 2

ROADWHEEL ARM REPLACEMENT (Sheet 2 of 7)



ROADWHEEL ARM (WITH HUB AND SEAL)

ROADWHEEL ARM (WITHOUT HUB AND SEAL)

NOTE

Hub and seal assemblies are on all left and right roadwheels at positions No. 1 thru 6. They may or may not be removed from roadwheel arm before removing arm itself. It is easier to remove arm with hub and seal off.

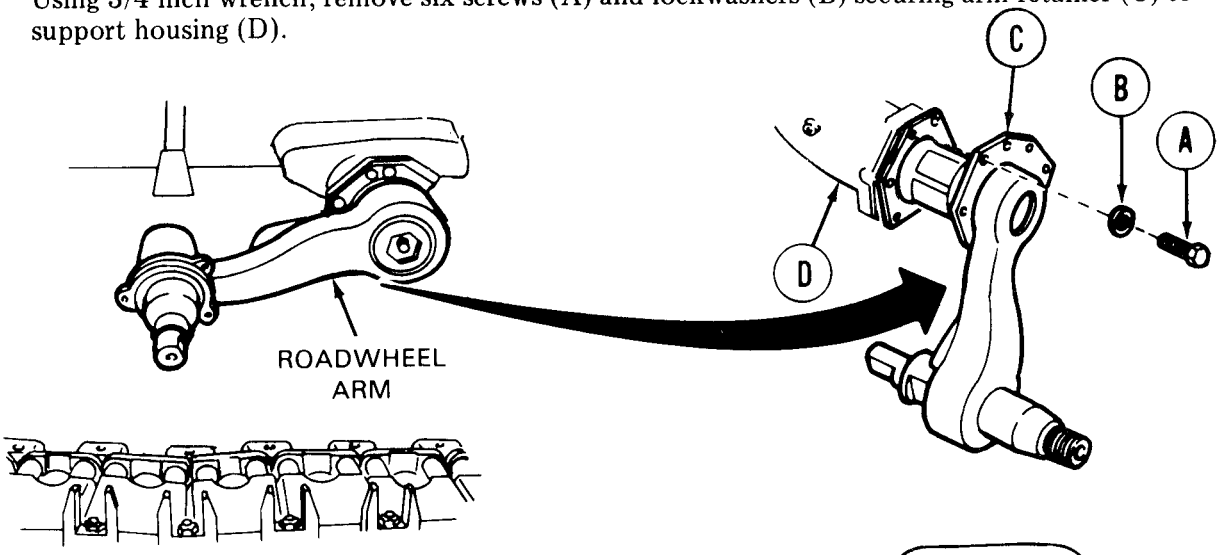
Go on to Sheet 3

TA249530

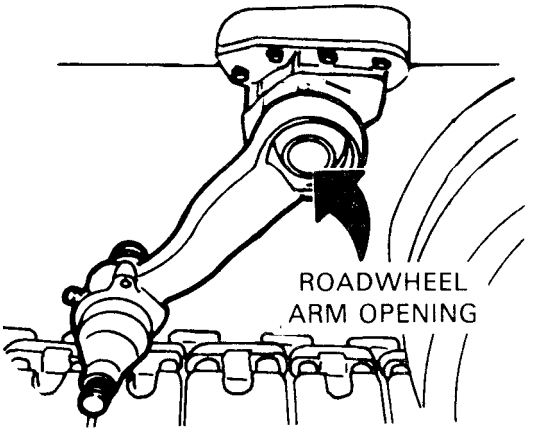
ROADWHEEL ARM REPLACEMENT (Sheet 3 of 7)

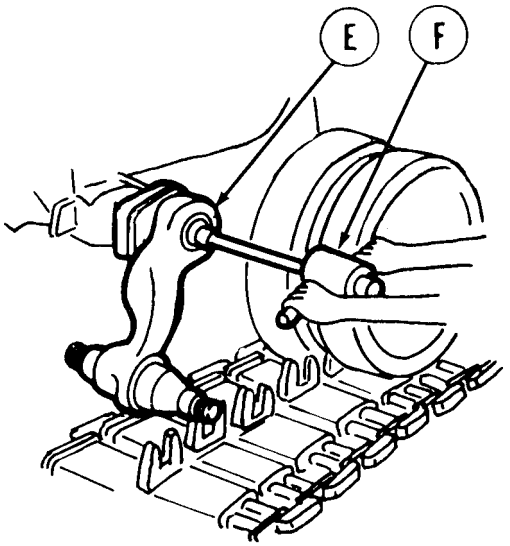
REMOVAL:

1 Using 3/4 inch wrench, remove six screws (A) and lockwashers (B) securing arm retainer (C) to support housing (D).



2. Using automotive wrench, screw adapter (E) all the way into roadwheel arm opening.





3. Install slide hammer (F) to adapter (E).

NOTE

There should be no side-to-side movement of slide hammer. If there is, remove and reinstall adapter and slide hammer.

4. Have second person use crowbar and support roadwheel arm.

5. Using both hands, operate slide hammer on puller from adapter end with force (away from hull).

Go on to Sheet 4

TA249531

ROADWHEEL ARM REPLACEMENT (Sheet 4 of 7)

6. If roadwheel arm does not come out of support housing (D) after repeated hits with slide hammer, perform steps 7, 8, and 9.

7. Screw two 5/8-13 UNC threaded screws into two retaining jackscrew holes.

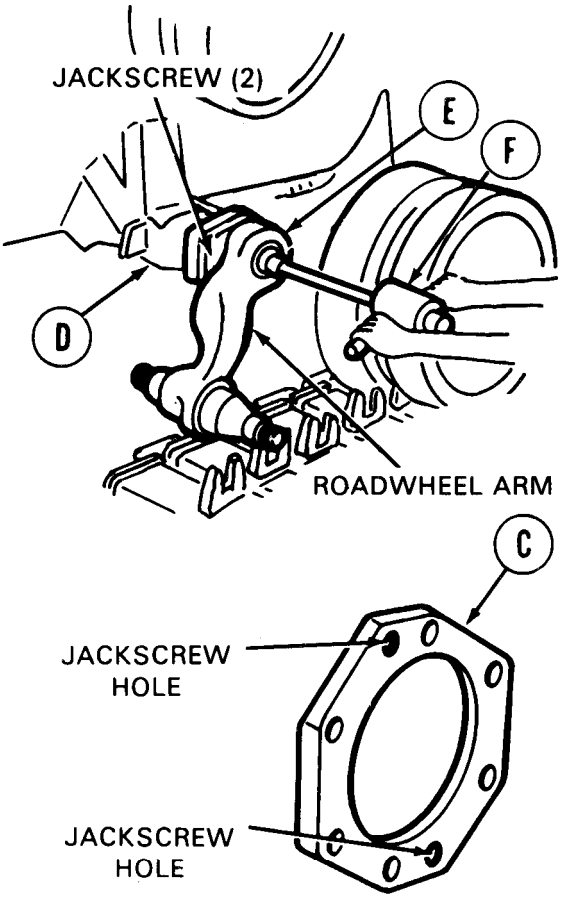
8. Using 5/8 inch socket, alternately and evenly tighten jackscrews.

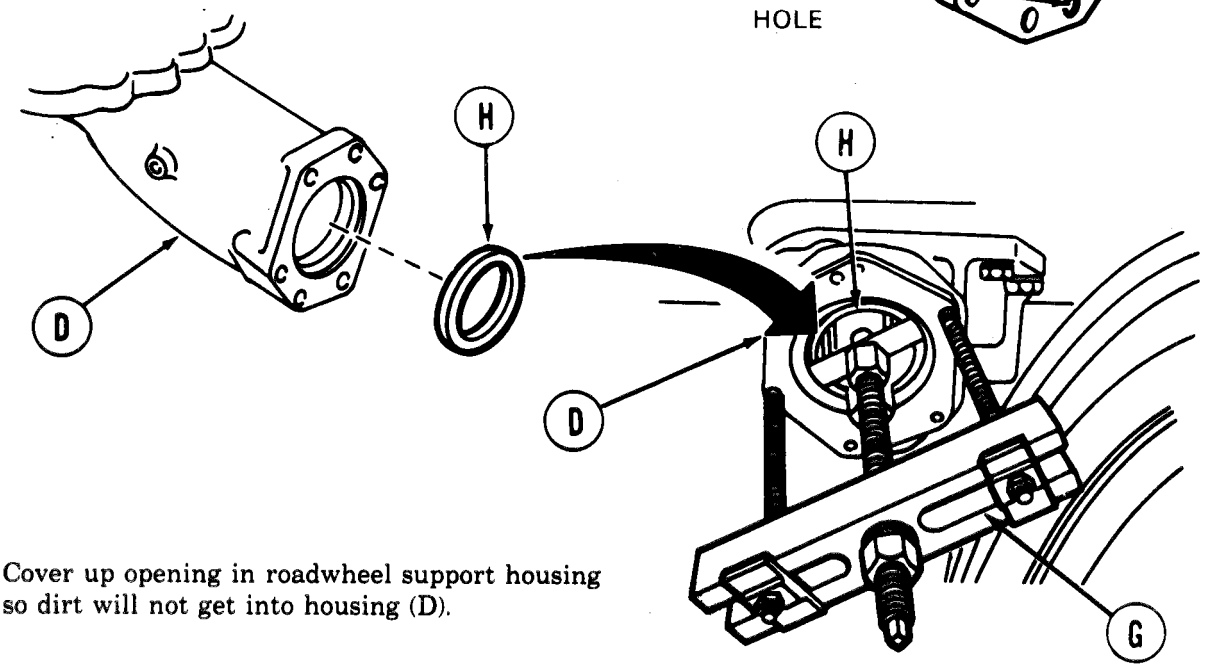
9. Use slide hammer (F) while tightening jackscrews, if used, to free arm from support housing (D).

   When arm is loose in support housing (D), remove slide hammer (F) and adapter (E).

   Using another person, remove roadwheel arm and gasket to clean working area. Throw gasket away.

12. Using internal puller (G), remove inner grease seal (H) from support housing (D). Throw seal away.





13. Cover up opening in roadwheel support housing so dirt will not get into housing (D).

Go on to Sheet 5

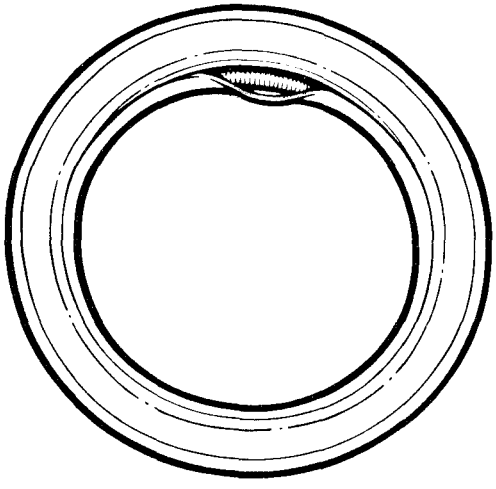
TA249532

ROADWHEEL ARM REPLACEMENT (Sheet 5 of 7)

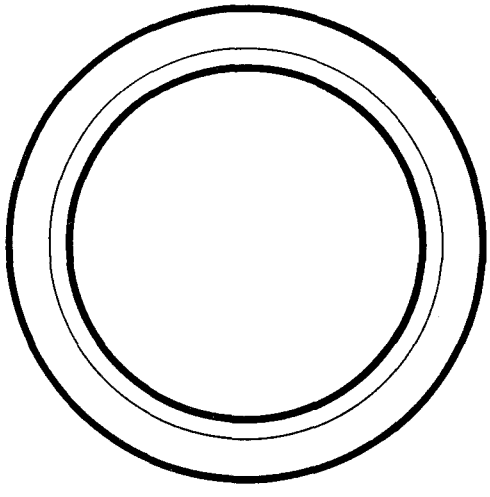
INSTALLATION:

NOTE

Identify FRONT and BACK of inner grease seal. Rubber grease-seal retaining lip can be pulled a-way from metal inner edge on FRONT of seal. Pull back retaining lip on seal and expose garter spring. BACK of seal has rubber grease retainer bonded to metal case and cannot be pulled away.



FRONT VIEW



BACK VIEW

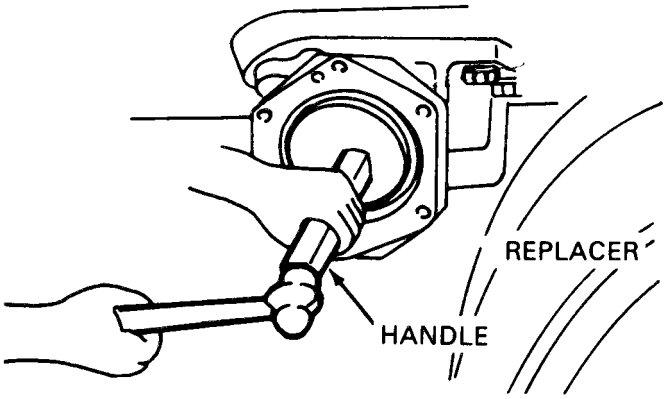
INNER GREASE SEAL

Go on to Sheet 6

TA249533

ROADWHEEL ARM REPLACEMENT (Sheet 6 of 7)

1. Remove covering from roadwheel support housing opening.
2. Apply a light coat of grease to outer edge of new inner grease seai.
3. Position inner grease seal (A) into roadwheel housing (B) opening so BACK of seal (A) goes in towards hull. You should be able to see FRONT of seal (A) as you look into housing.
4. Using oil seal replacer and handle tap lightly on handle with hammer until inner seal has bottomed in housing (B).
5. Coat all parts on upper spindle (C) with grease.



6. Install new gasket (D) to mounting face of retainer (E).

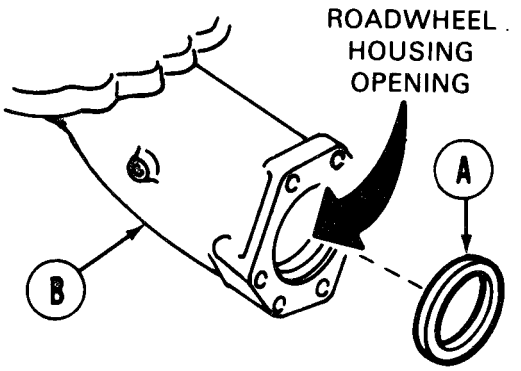
CAUTION

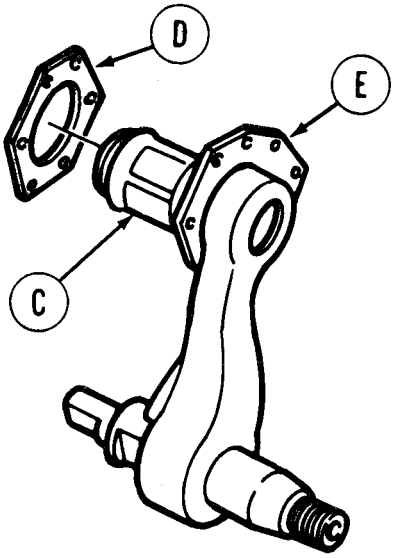
Do not use excessive force while installing roadwheel arm; damage to seal may result.

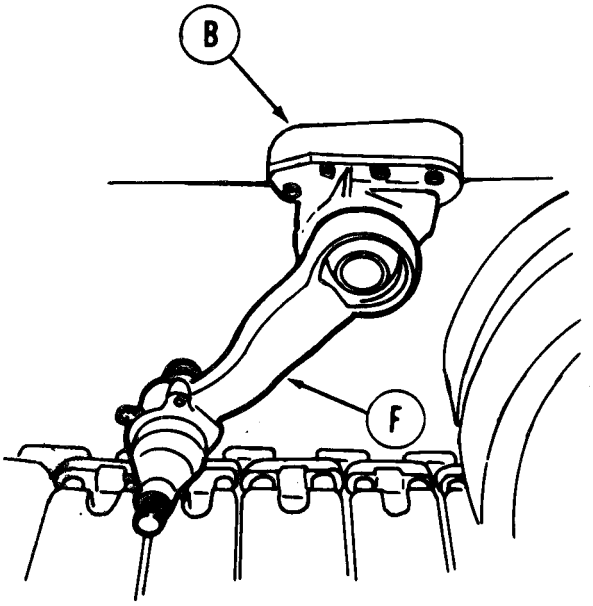
NOTE

Upper spindle (C) must be properly alined with support housing (B) while roadwheel arm (F) is being installed.

7. Using two persons, install upper spindle (C) completely into support housing (B).







Go on to Sheet 7

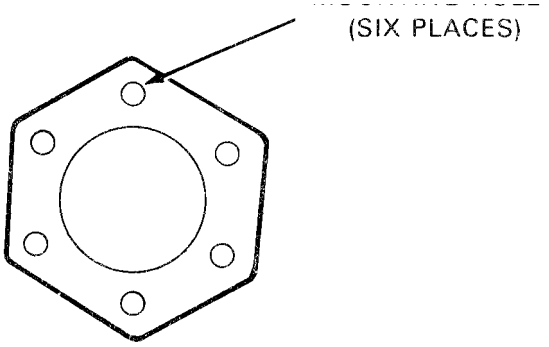
TA249534

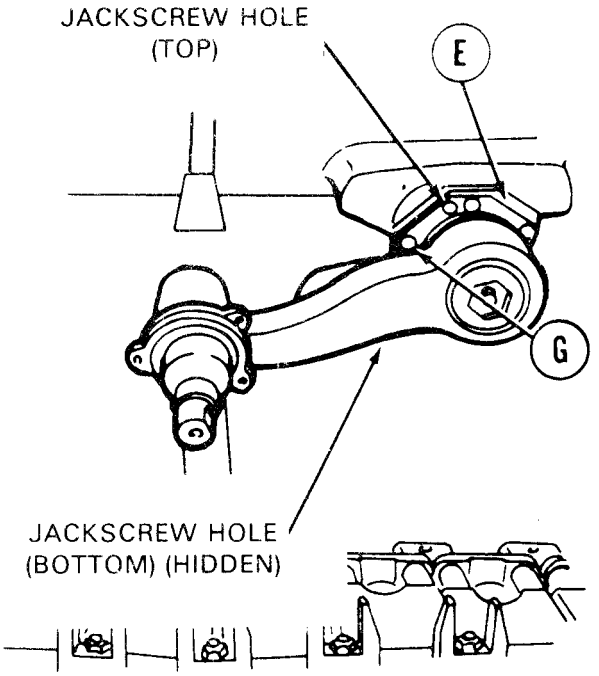
ROADWHEEL ARM REPLACEMENT (Sheet 7 of 7)

8. Position retainer (E) so that its jackscrew holes are at top and bottom of upper spindle.

9. Using pin punch, aline six mounting holes in retainer (E) to holes in housing.

10. Put six lockwashers and screws (G) into mounting holes.





11. Using crowfoot wrench and torque wrench, tighten six screws (G) alternately and evenly to 95-125 lb-ft (129-169 N.m).

12. Connect adjusting link at No. 1 roadwheel position, if necessary (page 14-59).

13. Install shock absorbers if roadwheed arms were removed from positions No. 1, 2, and 6 (page 14-96).

14. Install suspension torsion bar (page 14-27).

15. Install wheel hub if removed (page 14-18).

16. lnstall roadwheels (page l4-53).

End of Task

TA249535

ROADWHEEL ARM REPAIR (Sheet 1 of 9)

PROCEDURE INDEX

TOOLS: Pry bar
Hammer
Long round nose pliers
File
Handle (7082881)
Handle, socket wrench, hinged, with 1/2 in. drive
Chisel

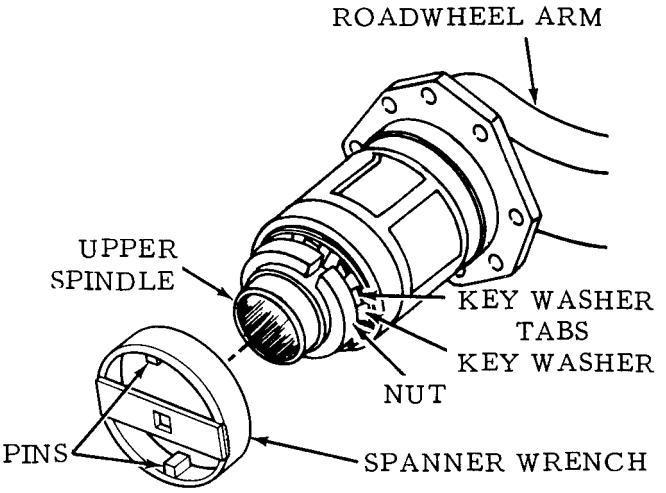
SPECIAL TOOLS: Seal inserter (Item 22, Chapter 3, Section I)
Spanner wrench (Item 27, Chapter 3, Section I)
Bearing tool assembly (Item 16, Chapter 3, Section I)
Replacer (Item 26, Chapter 3, Section I)
Bearing driver (Item 30.2, Chapter 3, Section I)

SUPPLIES: Seals
Key washer
Dry cleaning solvent (Item 55, Appendix D)
Grease (Item 36, Appendix D)
Washer
Goggles (Item 70, Appendix D)
Gloves (Item 69, Appendix D)

PRELIMINARY PROCEDURE: Remove roadwheel arm (page 14-2)

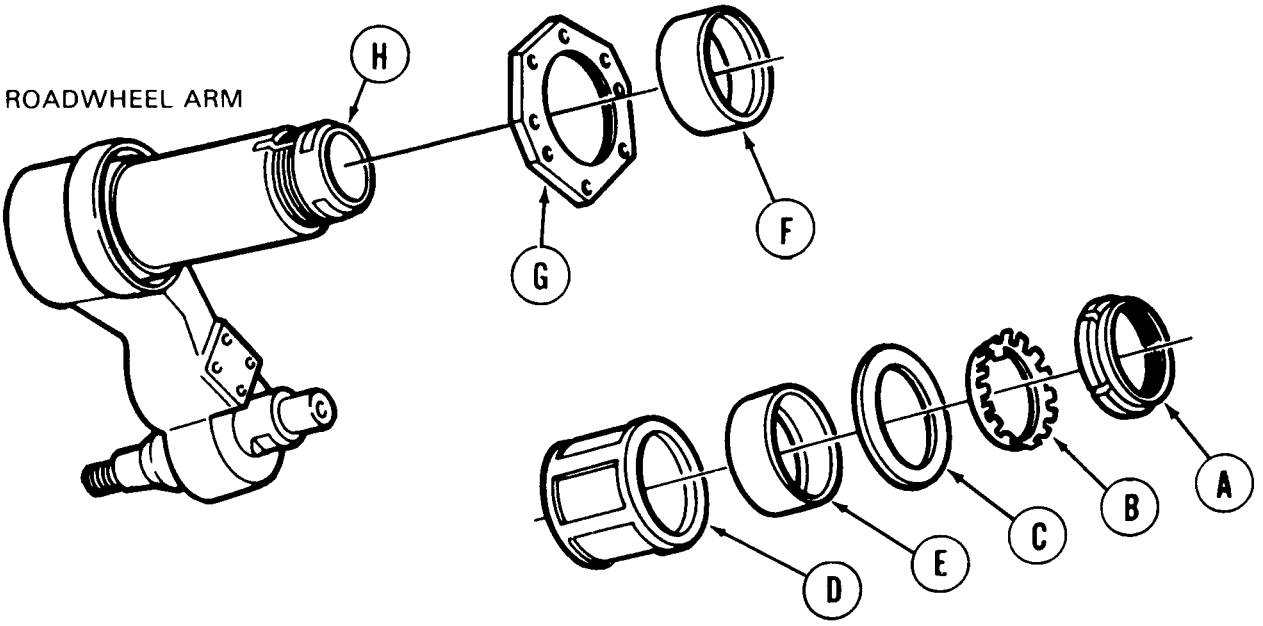
Go on to Sheet 2

ROADWHEEL ARM REPAIR (Sheet 2 of 9)



DISASSEMBLY:

1. Using pliers, bend key washer tabs back out of slot in nut.
2. Put spanner wrench on nut (A) so pins fit into slots. Using spanner wrench and handle, remove nut.
3. Remove key washer (B) and bearing washer (C). Throw bearing washer (C) awav.



NOTE

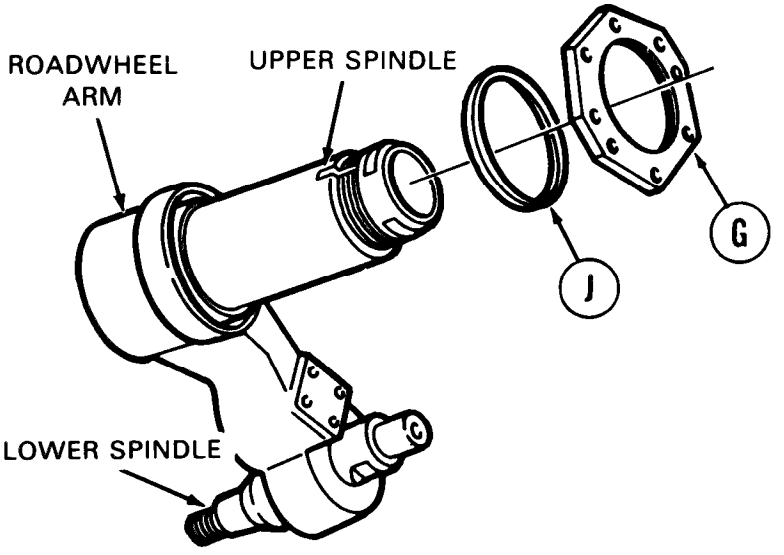
Keep inner and outer races of bearings together as matched set. If you throw away one race, throw away other one.

4. Use sleeve spacer (D) like a slide hammer to loosen inboard bearing (E). Remove bearing.
5. Remove sleeve spacer (D) and outboard bearing (F).
6. Pull oil seal retainer (G) off upper spindle (H).

Go on to Sheet 3

ROADWHEEL ARM REPAIR (Sheet 3 of 9)

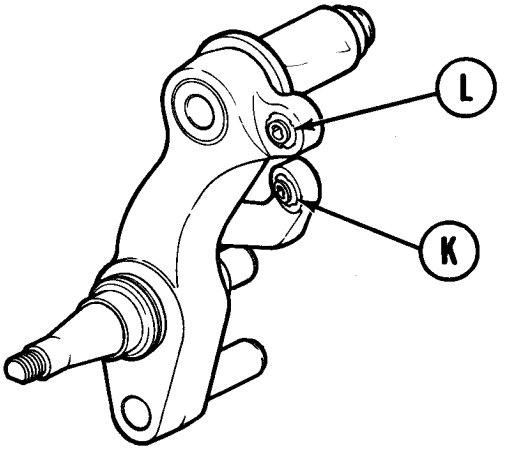
7. Using pry bar, remove seal (J) from retainer (G) with care. Do not damage retainer. Throw seal away.



NOTE

Roadwheel arm numbers 1, 2, and 6 require bearing replacement. For roadwheel number 1 and if your vehicle is equipped with mechanical track adjusting link, perform steps 8, 9, and 10; if equipped with grease actuated track adjusting link, perform steps 8, 9, and 11. For roadwheel numbers 2 and 6, perform steps 8 and 10. For roadwheel numbers 3, 4, and 5, go to cleaning and inspection, page 14-13.

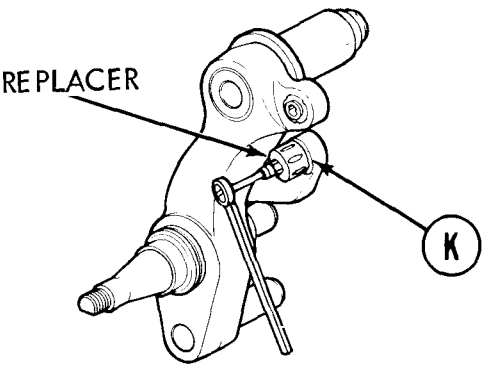
8. Using hammer and chisel, cut off stakes on three places,each side of shock absorber bearing (K) and track adjusting link bearing (L).



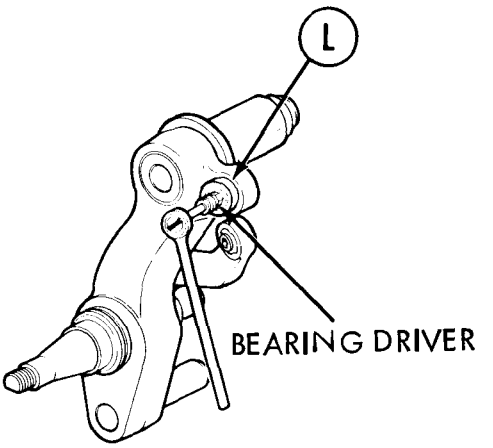
Go on to Sheet 4

ROADWHEEL ARM REPAIR (Sheet 4 of 9)

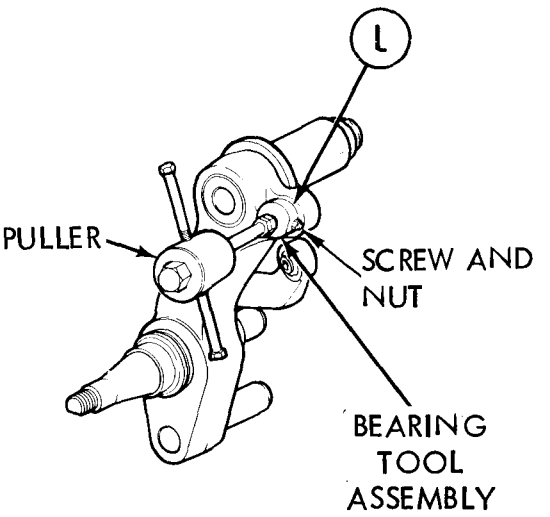
9. Install replacer on bearing (K). Turn replacer nut until bearing (K) is removed. Discard bearing (K).



10. Install bearing driver on bearing (L). Turn nut of bearing driver until bearing (L) is removed. Discard bearing (L).



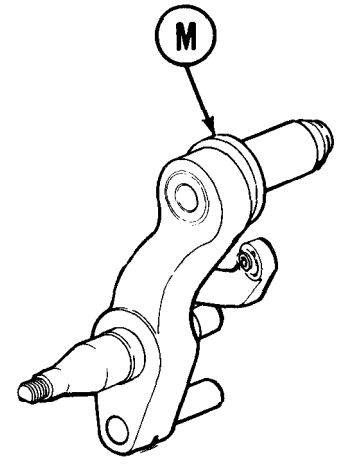
11. Secure bearing tool assembly: to bearing (L) with screw and nut, Install puller to bearing tool assembly and remove bearing (L). Discard bearing (L).



Go on to Sheet 5

ROADWHEEL ARM REPAIR (Sheet 5 of 9)

12. Inspect deflector (M) for bending, cracking, or wear. If damaged, carefully remove deflector (M) by tapping around its outer face with hammer and chisel.

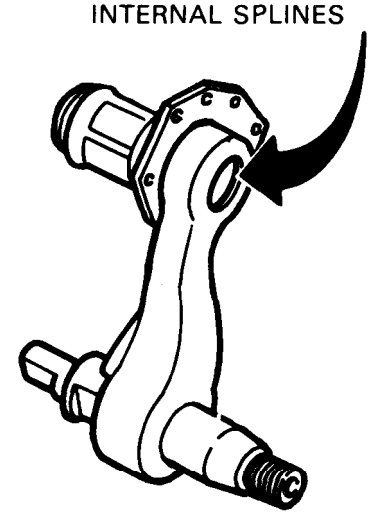


CLEANING AND INSPECTION:

WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. To avoid injury, wear protective goggles and gloves and use in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and do not breathe vapors. Do not use near open fire or excessive heat. The flash point for Type I dry cleaning solvent is 100°F (38°C), and for Type II is 138°F (50°C). If you become dizzy while using dry cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

1. Using dry cleaning solvent, clean all parts, especially bearings.
2. Check arm for cracks. If arm is cracked or bad, turn in to support maintenance and replace with new arm.
3. Inspect both upper and lower spindles of arm, especially threads.
4. Check internal splines of arm for broken, cracked, or deformed splines. If bad, replace arm.
5. Using file, smooth out any rust spots, pits, or other damaged places on arm. Do not file spindle.
6. Inspect bearings for missing needle rollers and scuffs or scratches, especially on inner races.
7. Replace defective parts as required.



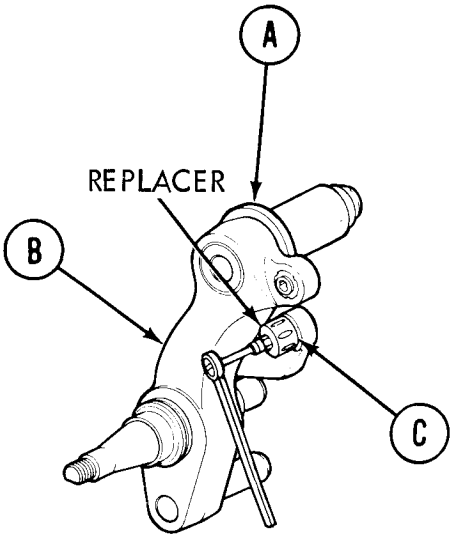
Go on to Sheet 6

ROADWHEEL ARM REPAIR (Sheet 6 of 9)

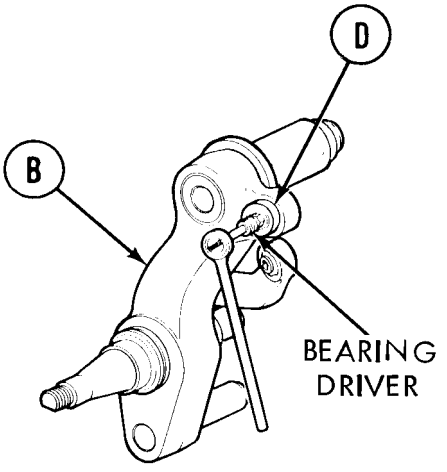
ASSEMBLY:

1. If deflector (A) was removed, carefully position new deflector in place over upper spindle against machined ridge in arm (B). Assure base of U-shaped deflector (A) is toward arm and open end toward threaded end of spindle. Tap deflector (A) lightly with hammer to assure it seats fully against arm (B).

2. Position shock absorber bearing (C) on arm (B). Install replacer over bearing (C) and arm (B). Turn replacer nut until bearing (C) is centered in arm (B). Remove replacer.



3. Stake bearing (C) to arm (B) at three equally spaced locations on each side of bearing (C).



NOTE

If replacing bearing for mechanical track adjusting link, perform steps 4 and 5. If replacing bearing for grease actuated track adjusting link, peform steps 6 and 7.

4. Position bearing (D) on arm (B). Install bearing driver over bearing (D). Turn nut of bearing driver until bearing (D) is centered in arm (B). Remove bearing driver.

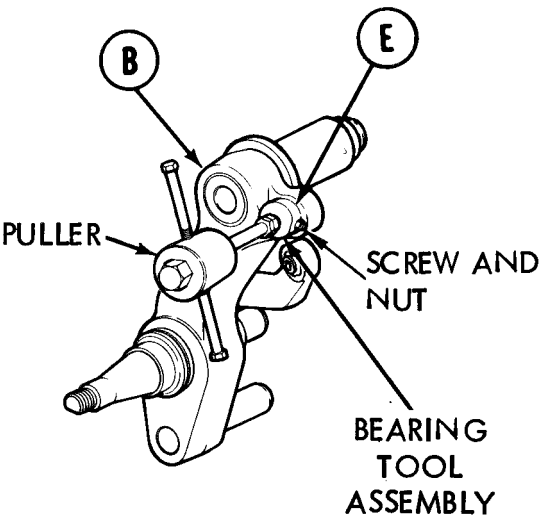
5. Stake bearing (D) to arm (B) at three equally spaced locations on each side of bearing (D). Go to step 8.

Go on to Sheet 7

ROADWHEEL ARM REPAIR (Sheet 7 of 9)

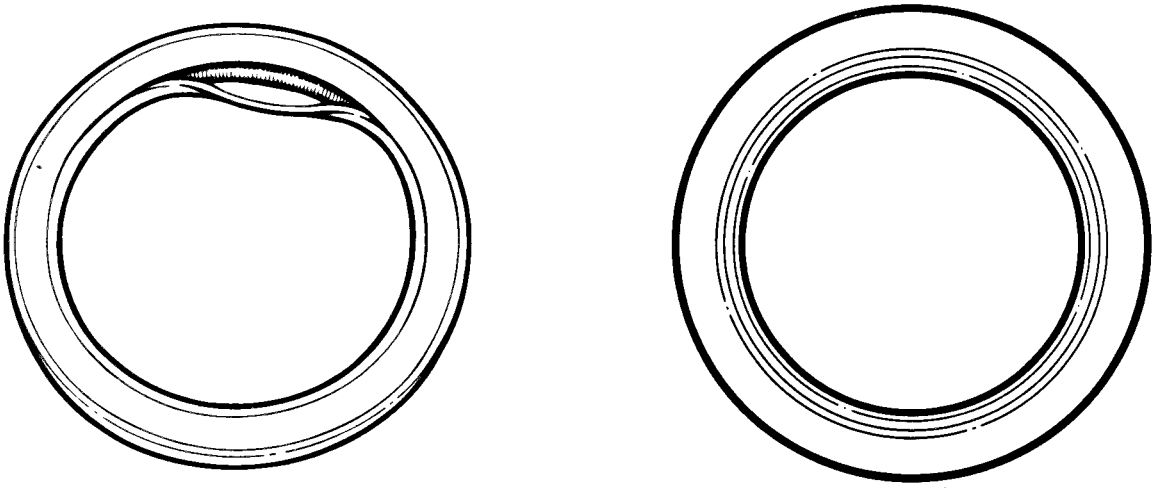
6. Position bearing (E) on arm (B). Secure bearing tool assembly to bearing (E) with screw and nut. Install puller to bearing tool assembly and drive bearing (E) in arm until centered. Remove bearing tool assembly and puller.

7. Stake bearing (E) to arm (B) at three equally spaced locations on each side of bearing (E). Go on to step 8.



NOTE

Identify FRONT and BACK of outer grease seal. Rubber grease seal retaining lip can be pulled away from metal inner edge on FRONT of seal. Pull back retaining lip on seal and expose garter spring. BACK of seal has rubber grease retainer bonded to metal case and connot be pulled away.



OUTER GREASE SEAL

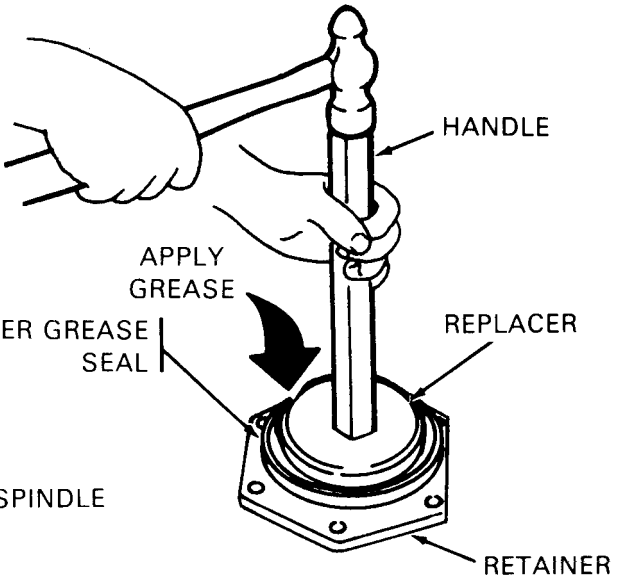
Go on to Sheet 8

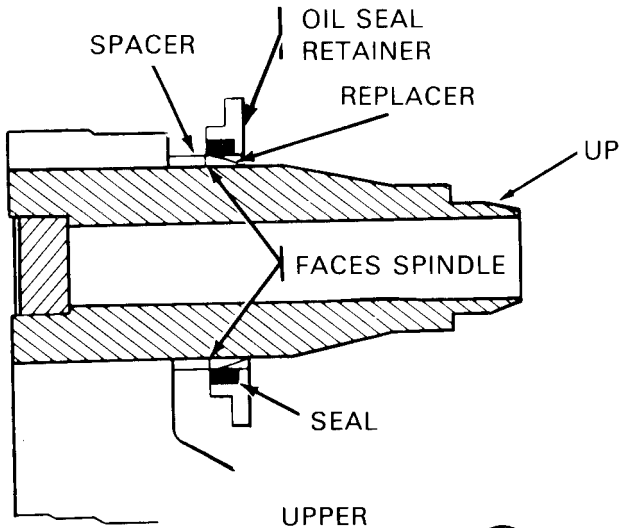
ROADWHEEL ARM REPAIR (Sheet 8 of 9)

8. Coat outer edge of seal with grease

9. Position seal (A) into retainer with front of seal facing upward.

10. Using replacer and handle, tap handle with hammer to install seal (A).

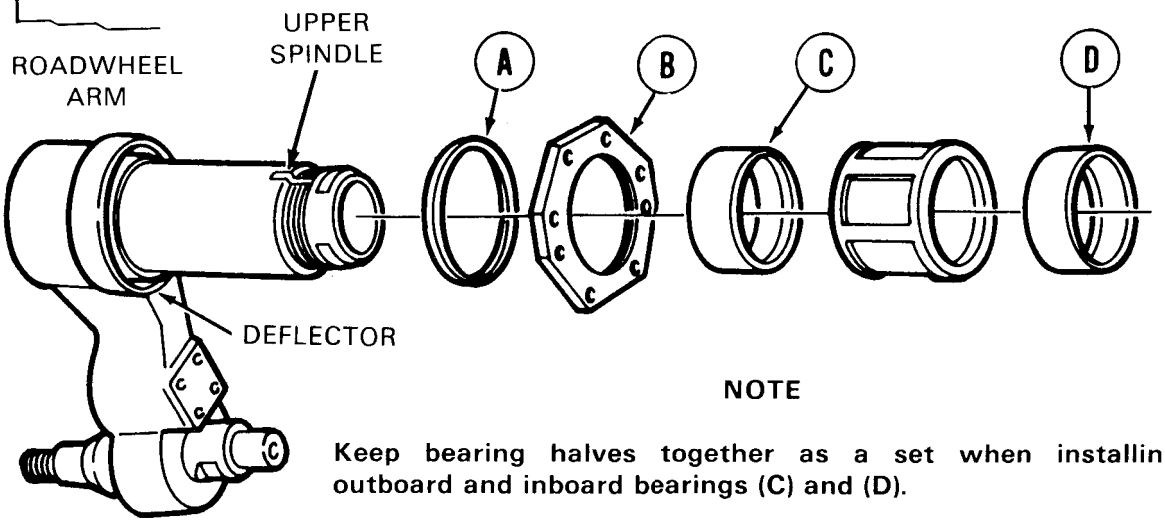




11. Install oil seal replacer (Item 20, Chapter 3, Section I) to face with spacer on upper spindle of arm.

12. Position retainer (B) onto upper spindle.

13. Make sure seal in retainer (B) fits into open end of deflector on roadwheel arm.



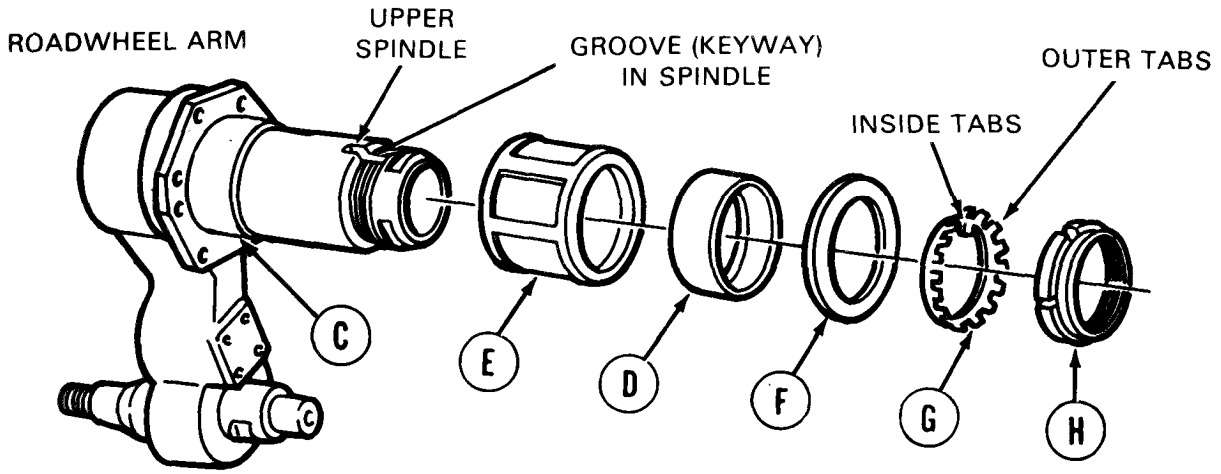
NOTE

Keep bearing halves together as a set when installing outboard and inboard bearings (C) and (D).

14. Coat inner and outer races of outboard bearings (C) with grease. Install inner race on spindle. Install outer race over it.

Go on to Sheet 9

ROADWHEEL ARM REPAIR (Sheet 9 of 9)



15. Apply grease to bearing spacer (E) and bearing washer (F).

16. Install bearing spacer (E) onto spindle up against outboard bearing (C),.

17. Repeat step 14 to install inboard bearings (D).

17.1 Install bearing washer (F) onto spindle up against inboard bearing (D) with step side of washer (F) facing bearinga (D).

18. Install key washer (G) on spindle of arm so that inside tab fits into groove.

NOTE

Make sure outer tabs of key washer are pointing towards nut (H).

19. Screw nut (H) onto threaded end of spindle.

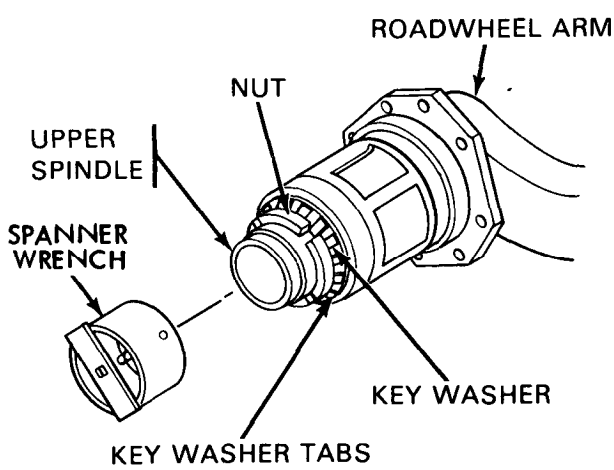
20. Using spanner wrench, tighten nut (H) until parts on spindle cannot be turned by hand.

21. Back off nut (H) just enough so parts can be turned by hand through one complete turn on spindle.

22. Using pliers, bend tab on key washer (G) into alining slot on nut (H).

23. Install roadwheel arm (page 14-6).

End of Task



HUB ASSEMBLY REPLACEMENT (Sheet 1 of 7)

PROCEDURE INDEX

TOOLS: 9/16 in. socket with 1/2 in. drive
Drift punch
Ratchet with 1/2 in. drive
Hammer
Hinged handle with 1/2 in. drive
Long round nose pliers
2-1/2 in. socket with 3/4 in. drive
Ratchet with 3/4 in. drive
Pinch bar
Torque wrench with 3/4 in. drive (0-600 lb-ft) (0-814 N.m)

SPECIAL TOOLS: Seal inserter (Item 22, Chapter 3, Section I)
Socket wrench (Item 29, Chapter 3, Section I)
Manual control handle (Item 12, Chapter 3, Section I)
Bearing inserter set (Item 18, Chapter 3, Section I)
Bearing inserter set (Item 17, Chapter 3, Section I)

SUPPLIES: Grease (Item 38, Appendix D)
Gaskets
Seal
Preformed packing
Bearing nut lock
Lockwashers (14 required)

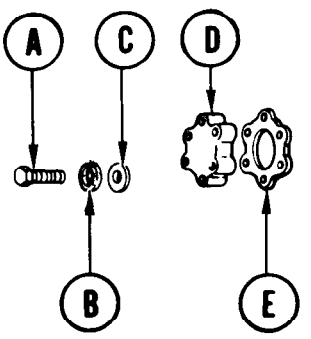
REFERENCE: LO 5-5420-202-12

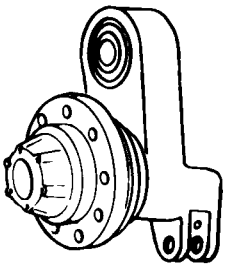
PRELIMINARY PROCEDURE: Remove roadwheels (page 14-51)

DISASSEMBLY:

1. **Using 9/16 inch socket, remove six screws (A), lockwashers (B), and washers (C).**

2. **Remove cover plate (D) and gasket (E). Throw gasket away.**

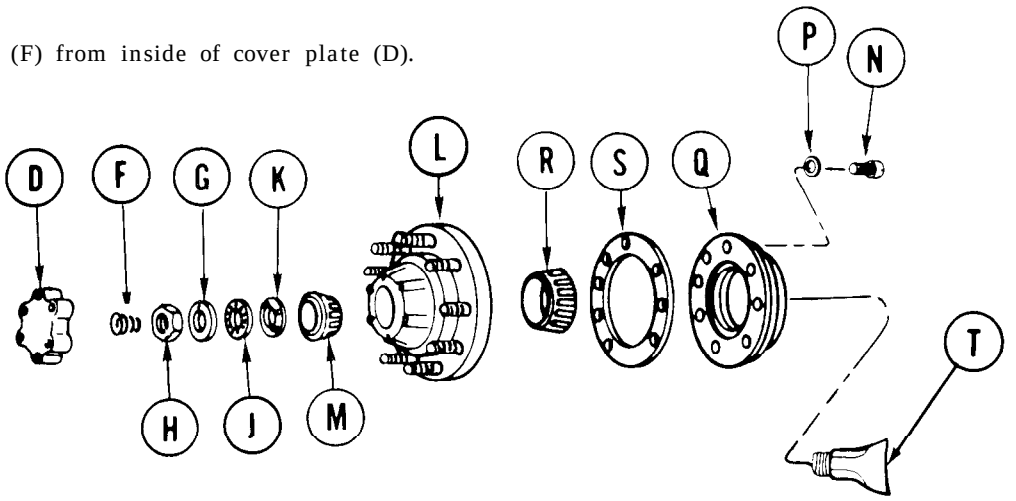




Go on to Sheet 2

HUB ASSEMBLY REPLACEMENT (Sheet 2 of 7)

3. Remove spring (F) from inside of cover plate (D).



4. Using hammer and drift punch, bend back tab of bearing nut lock (G).

5. Using 2-1/2 inch socket, loosen nut (H). Remove nut (H), bearing nut lock (G), and lock (J). Throw bearing nut lock (G) away if used more than four times.

6. Using socket wrench with 3/4 inch ratchet, remove nut (K).

7. Using pinch bar on hub, if necessary, remove hub (L) and bearing (M).

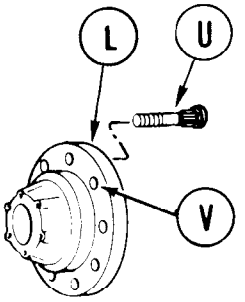
8. **Using 9/16 inchsocket with hinged handle, remove eight screws (N) and lockwashers (P) securing seal assembly (Q) to hub (L).**

9. Remove inner bearing (R), gasket (S), and seal assembly (Q). Throw gasket away.

10. Separate preformed packing (T) from arm assembly. Throw packing away.

11. Using hammer and drift punch, drive out any bolts (U) with stripped threads or other damage. Throw bolts away.

12. If inserts (V) are stripped or damaged, turn hub into support maintenance for repair.



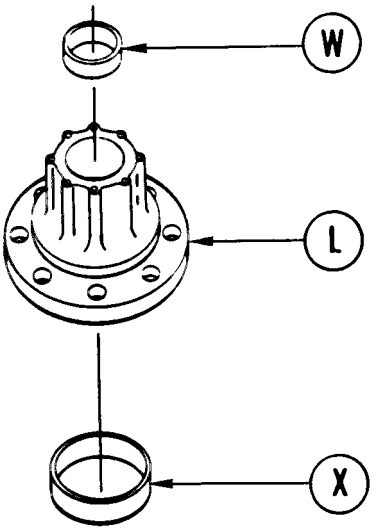
Go on to Sheet 3

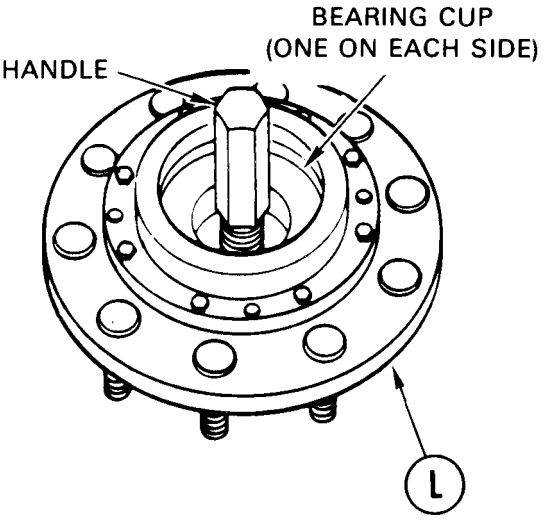
HUB ASSEMBLY REPLACEMENT (Sheet 3 of 7)

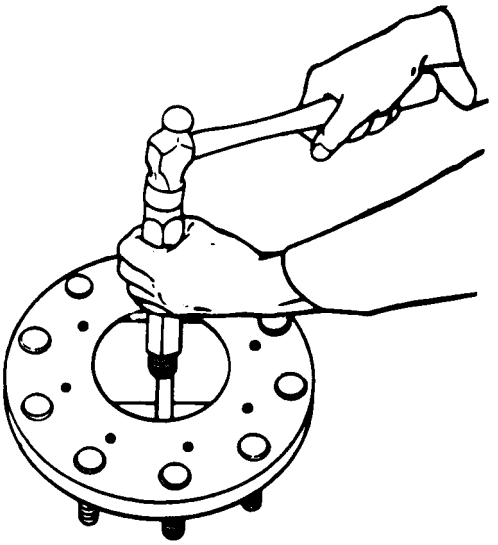
13. Position bearing inserter set (Item 18, Chapter 3, Section I) on outer bearing cup (W) in hub (L).

14. Using hammer, tap handle to drive outer bearing cup (W) from hub (L).

15. Repeat steps 13 and 14 to remove inner bearing cup (X) from hub (L), using bearing inserter set (Item 17, Chapter 3, Section I).







CLEANING AND INSPECTION:

1. Clean all parts including bearings.

2. Inspect hub and cover plate for cracks or damage. There should be no cracks.

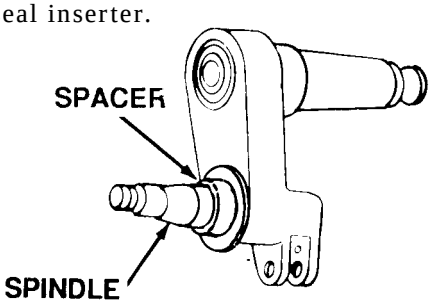
3. Minor nicks, scratches, gouges, and pitting are okay if they are not on machined surfaces.

Go on to Sheet 4

HUB ASSEMBLY REPLACEMENT (Sheet 4 of 7)

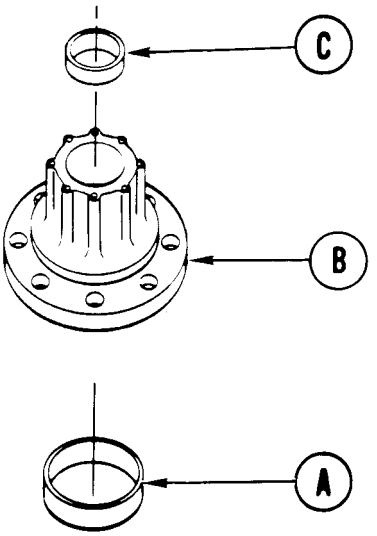
4. Inspect bearings and cups for damage. Replace as necessary.

5. Check seal assembly for rust, missing rivets, or other damage. Replace seal as required using seal inserter.



6. Inspect all nuts, washers, and screws for wear and damaged threads.

7. Inspect spacer on spindle for scratches, nicks, or dents. If damaged, notify support maintenance.

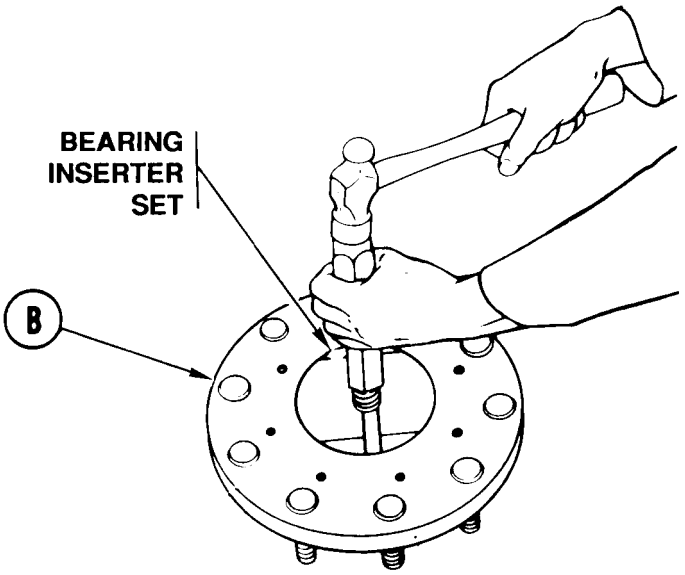


ASSEMBLY:

1. Grease both bearing cups. Position bearing inserter set (Item 17, Chapter 3, Section I) to inner cup (A) in hub (B).

2. Using hammer, tap remover-replacer to seat inner cup (A) into place in hub (B).

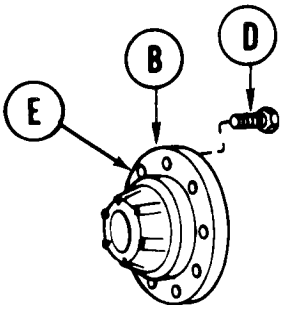
3. Using bearing inserter set (Item 18, Chapter 3, Section I) repeat steps 1 and 2 to seat outer cup (C) in hub (B).



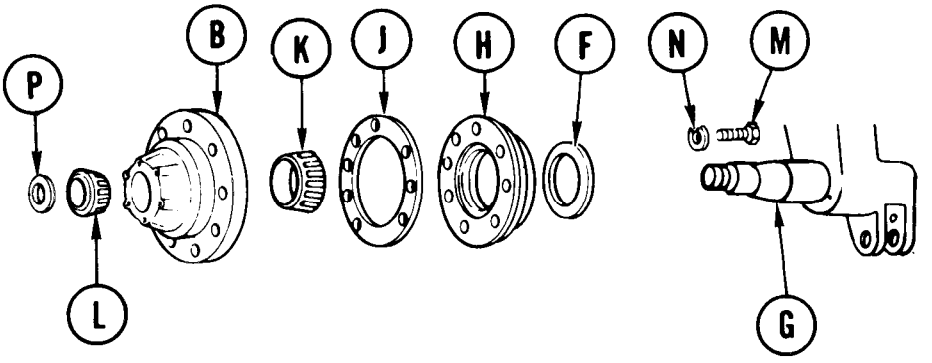
Go on to Sheet 5

HUB ASSEMBLY REPLACEMENT (Sheet 5 of 7)

4. Using hammer and drift punch, install new (if required) bolts (D) into hole (E) of hub (B).



5. Grease new preformed packing (F). Install packing into groove on arm assembly (G).
6. Install seal assembly (H) with new gasket (J) onto arm (G) lower spindle.
7. Pack both inner (K) and outer bearings (L) with grease.
8. Position inner bearing (K) on arm (G) lower spindle.
9. Install hub (B) onto arm spindle (G), making sure seal assembly (H) alines to five pins on interface of arm assembly (G).



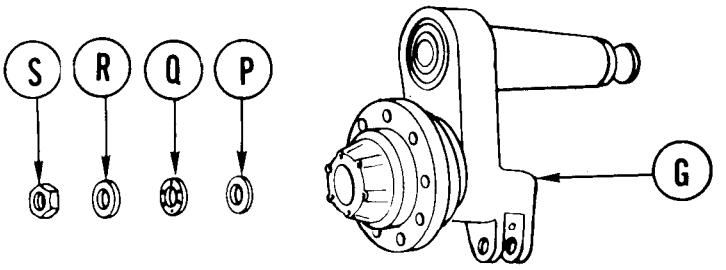
10. Install eight screws (M) and lockwashers (N) to secure seal assembly (H) to hub (B).

11. Using 9/16 inch socket, tighten screws (M) alternately.
12. Install outer bearing (L) onto spindle. Push hub (B) onto spindle and bearing until bearing seats.
13. Install round nut (P) with dowel. Using spanner wrench with 3/4 inch drive ratchet, tighten nut (P) while rotating hub one way then opposite.

Go on to Sheet 6.

HUB ASSEMBLY REPLACEMENT (Sheet 6 of 7)

14. When nut (P) is tight and parts seem to be seated, back off nut and, using torque wrench, tighten nut (P) to 50-70 lb-ft (68-95 N.m).



15. Back off round nut (P) 1/4 turn.

16. Install lock (Q) so that hole of lock fits over nut (P) dowel.

NOTE

If lock hole does not line up to dowel of nut, turn lock over and try other side.

17. Position new bearing nut lock (R) to one of holes in lock (Q).

18. Screw nut (S) onto arm (G) lower spindle. Tighten nut up against bearing nut lock (R).

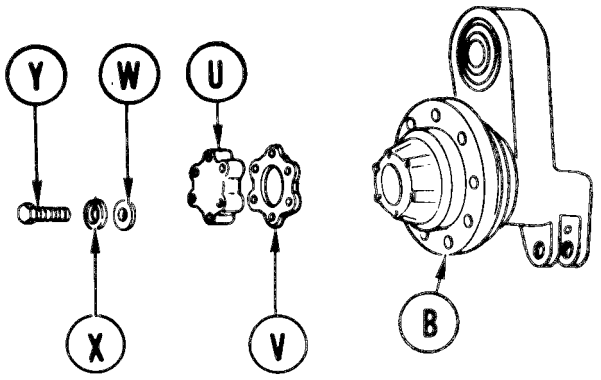
19. Using 2-1/2 inch socket, tighten nut (S).

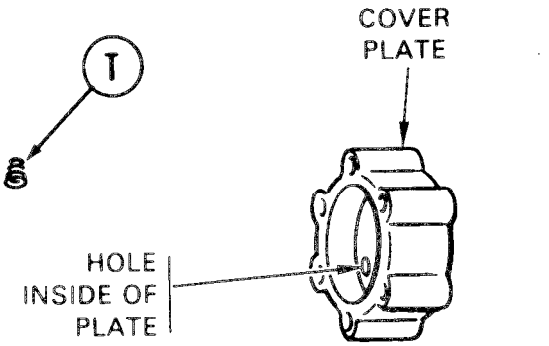
20. Using hammer and drift punch, bend one end of bearing nut lock (R) back over nut (S).

Go on to Sheet 7

TA249547

HUB ASSEMBLY REPLACEMENT (Sheet 7 of 7)





21. lnstall spring (T) into rover plate (U). Tang of large end of spring goes into hole inside of cover plate.

22. Install cover plate (U) with new gasket (V) to hub (B).

23. Install six washers (W), lockwashers (X), and screws (Y) to secure cover plate (U) to hub (B).

24. Using 9/16 inch socket, tighten six screws (Y).

25. Service hub and arm assembly (LO 5-5420-202-12).

26. Install roadwheels (page 14-53).

End of Task

TA249548

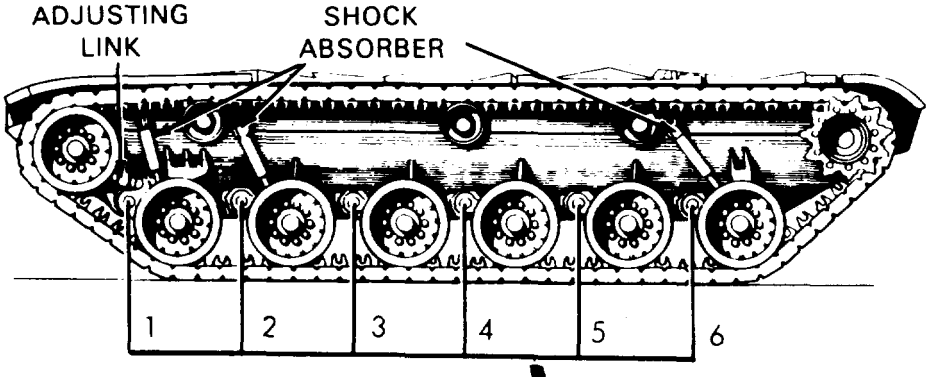
ROADWHEEL SUPPORT HOUSING ASSEMBLY REPAIR AND REPLACEMENT (Sheet 1 of 2)

TOOLS: 1-5/16 in. socket with 3/4 in. drive
Ratchet with 3/4 in. drive
Hammer
36 in. extension bar
Drift pin punch
10 in. adjustable wrench
Slip joint pliers
Torque wrench with 3/4 in. drive (0-600 lb-ft) (0-814 N.m)

SUPPLIES: Lockwashers (9 required)
Corrosion preventive (Item 79, Appendix D)
Solid film lubricant (Item 80, Appendix D)

PERSONNEL: Two

PRELIMINARY PROCEDURES: Remove roadwheel arm (page 14-2)
Remove torsion bar anchor (page 14-31)

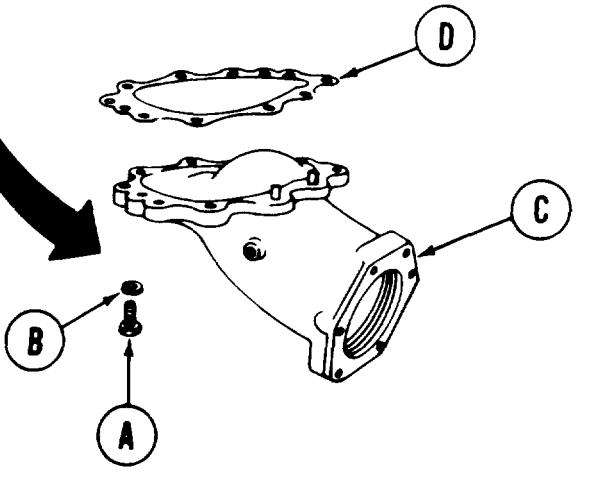


NOTE

There are six support housings on each side of vehicle. The procedures for all six are identical except that no. 1 housing is not interchangeable.

NOTE

Use jack to support housing during removal and installation.



REMOVAL:

1. Using socket with ratchet, remove nine screws (A) and lockwashers (B) securing roadwheel support housing (C) to hull.

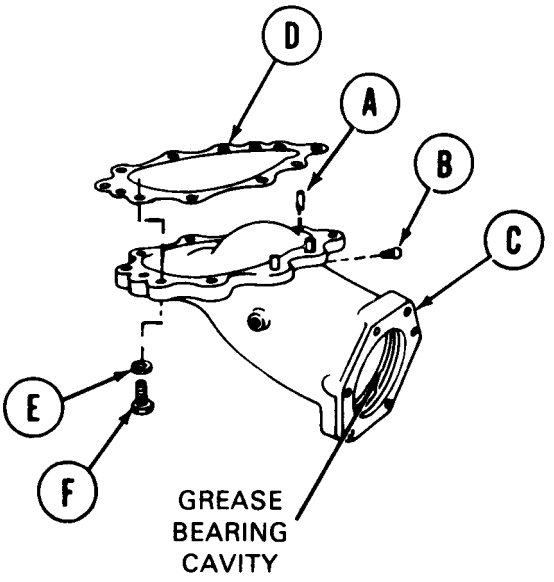
2. Remove housing (C) and gasket (D) from hull mounting place. Throw gasket (D) away.

Go on to Sheet 2

ROADWHEEL SUPPORT HOUSING ASSEMBLY REPAIR AND REPLACEMENT (Sheet 2 of 2)

REPAIR:

1. Using hammer, tap two straight pins (A) to loosen them. Using pliers, pull pins out.
2. Using adjustable wrench, remove plug (B) from housing.
3. Inspect housing (C). Replace if necessary.
4. Coat support housing bearing cavity with grease.
5. Using adjustable wrench, install plug (B).
6. Inspect grease fitting. Replace if necessary.



INSTALLATION:

1. Using hammer and drift punch, drive two pins (A) into place.
2. Apply sealing compound to mating surfaces of hull and housing (C).
3. Lift housing (C) and new gasket (D) and position to mounting place.
4. Aline holes in gasket. and housing with holes in hull mounting place.
5. Install nine lockwashers (E) and screws (F) securing housing (C) to hull.
6. Using socket, alternately tighten nine screws (F).
7. Using torque wrench, socket, and extension bar, tighten screws (F) to 450-475 lb-ft (610- 644 N.m).
8. Install torsion bar anchors (page 14-31).
9. Install roadwheel arm (page 14-6).

End of Task

TA249550

SUSPENSION TORSION BAR REPLACEMENT (Sheet 1 of 7)

PROCEDURE INDEX

TOOLS: 3/4 in. deep socket with 1/2 in. drive
Ratchet with 1/2 in. drive
Mallet
Crowbar (or pinch bar)
Rod (or drift pin)
Blocks
15 in. adjustable wrench
36 in. extension bar
Automotive wrench
Slide hammer puller (5573615)
Mechanical puller adapter (12251805)

SPECIAL TOOLS: Socket wrench adapter (Item 28, Chapter 3, Section I)
Roadwheel arm lifter (Item 13, Chapter 3, Section I)

SUPPLIES: Grease (Item 38, Appendix D)
Block

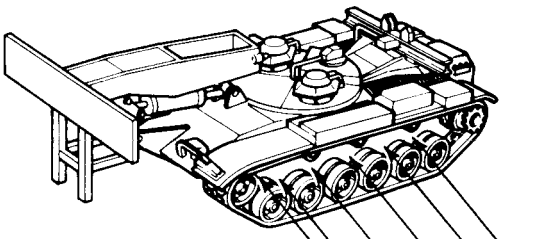
PERSONNEL: Two

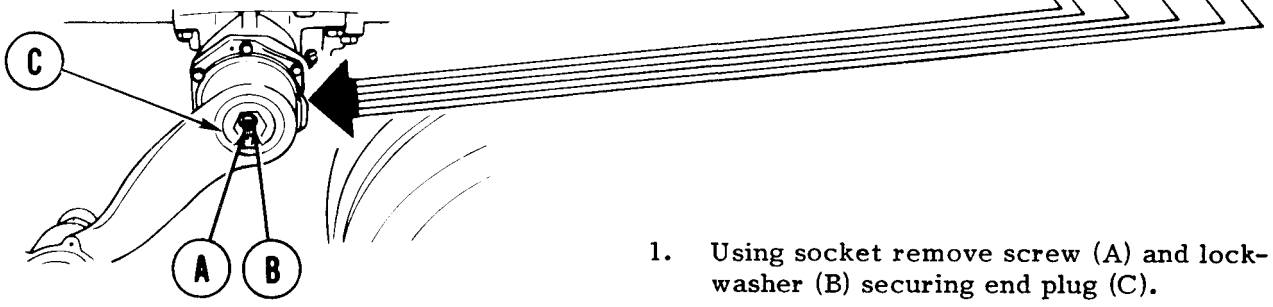
PRELIMINARY PROCEDURES: Remove hub (page 14-15)

NOTE

There are six torsion bars on each side of vehicle.

REMOVAL:





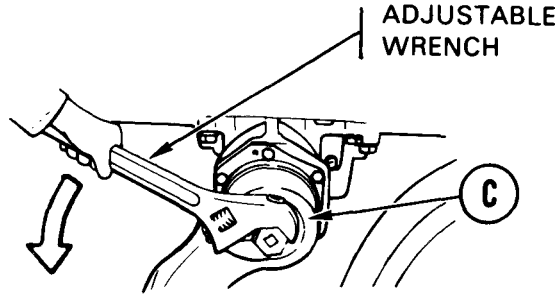
1. Using socket remove screw (A) and lockwasher (B) securing end plug (C).

Go on to Sheet 2

SUSPENSION TORSION BAR REPLACEMENT (Sheet 2 of 7)

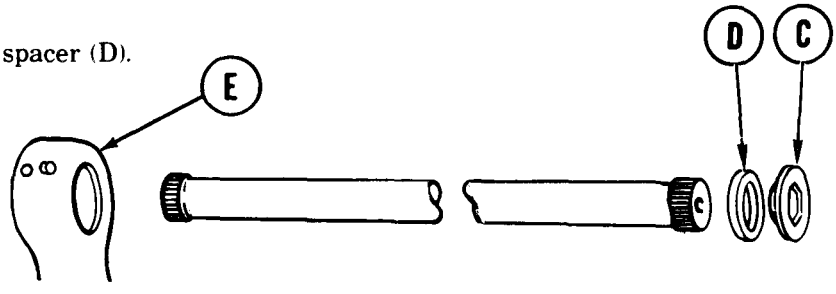
2. Install socket wrench adapter into end plug (C).

NOTE
It maybe necessary to use 36 inch bar extension.



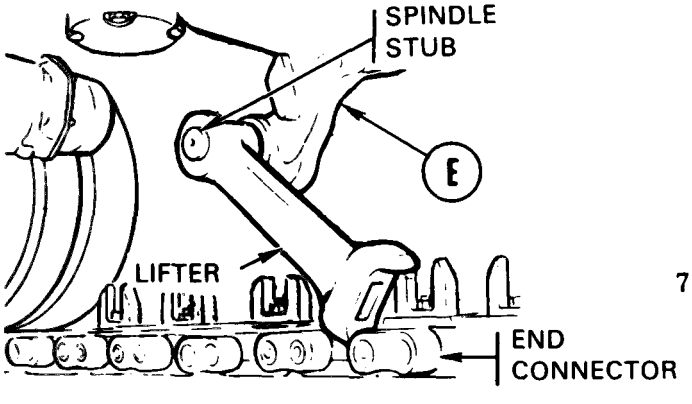
3. Using adjustable wrench or socket wrench adapter, loosen end plug (C).

4. Remove end plug (C) and spacer (D).



5. Have second person start engine. Then shift transmission into reverse and slowly back vehicle up.

6. Direct second person to stop vehicle when support arm (E) is in down position.



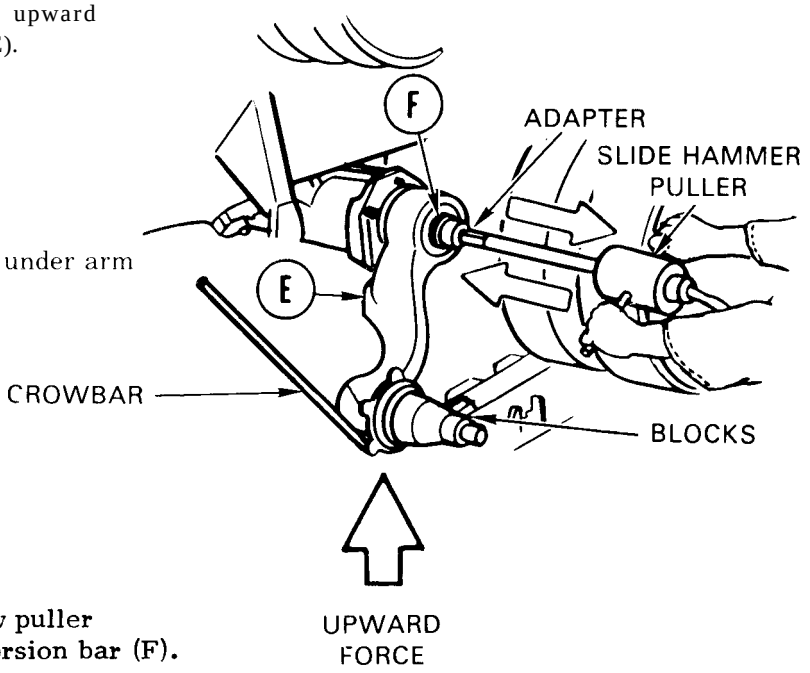
7. Using mallet, tap roadwheel arm lifter off spindle stub. Remove lifter.

Go on to Sheet 3

SUSPENSION TORSION BAR REPLACEMENT (Sheet 3 of 7)

8. Using crowbar (or pinch bar), apply upward force to bottom of roadwheel arm (E).

9. Have second person position blocks under arm (E) while force is being applied.



10. Remove crowbar.

11. Using automotive wrench, screw puller adapter into threaded hole of torsion bar (F).

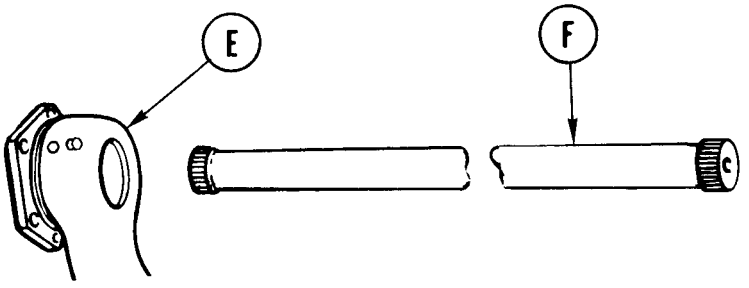
NOTE

Adapter must be tightened after each striking movement.

12. Using slide hammer puller with adapter, strike torsion bar (F) with slide hammer by sliding slide hammer puller along slide hammer rod.

13. Keep on striking torsion bar (F) with slide hammer. Hammer with some force until torsion bar (F) spline is free from side of hull.

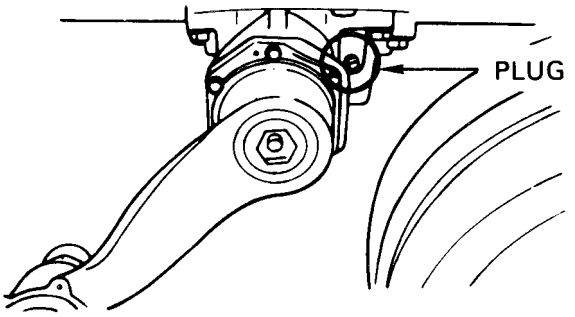
14. Pull bar (F) out of support arm (E).



Go on to Sheet 4

SUSPENSION TORSION BAR REPLACEMENT (Sheet 4 of 7)

15. If torsion bar is broken, use adjustable wrench to remove plug at opposite side of vehicle.



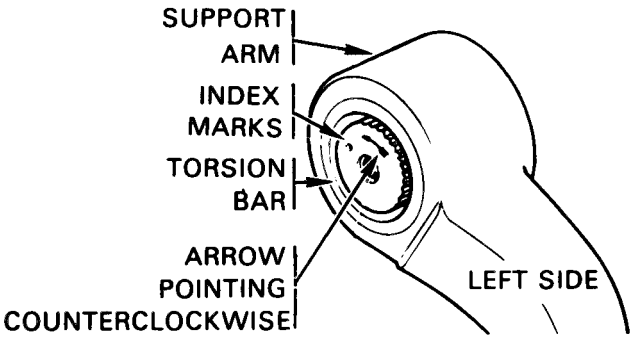
16. Stick rod through plug hole. Using mallet, tap rod to drive torsion bar out from other end.

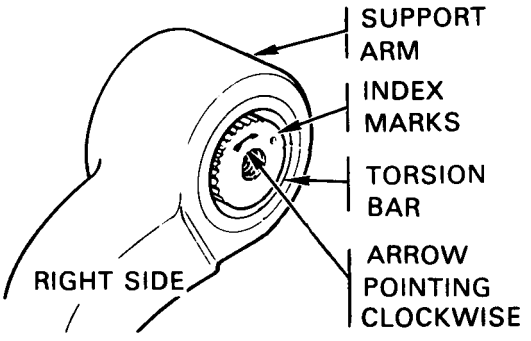
17. Replace torsion bar or other parts found defective.

INSTALLATION:

CAUTION

Six torsion bars (E) on one side of vehicle are different from six bars on other side. Left side bars have arrow pointing counter-clockwise. Right side bars have arrows pointing clockwise.



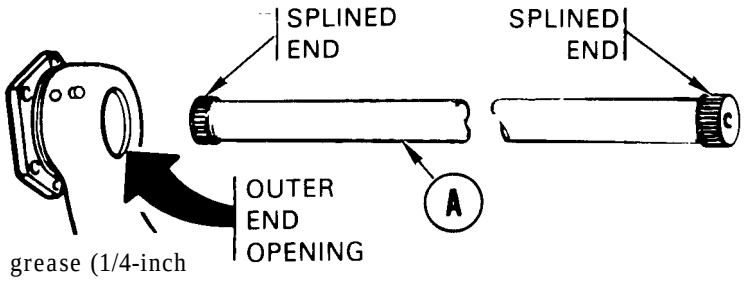


Go on to Sheet 5

TA249554

SUSPENSION TORSION BAR REPLACEMENT (Sheet 5 of 7)

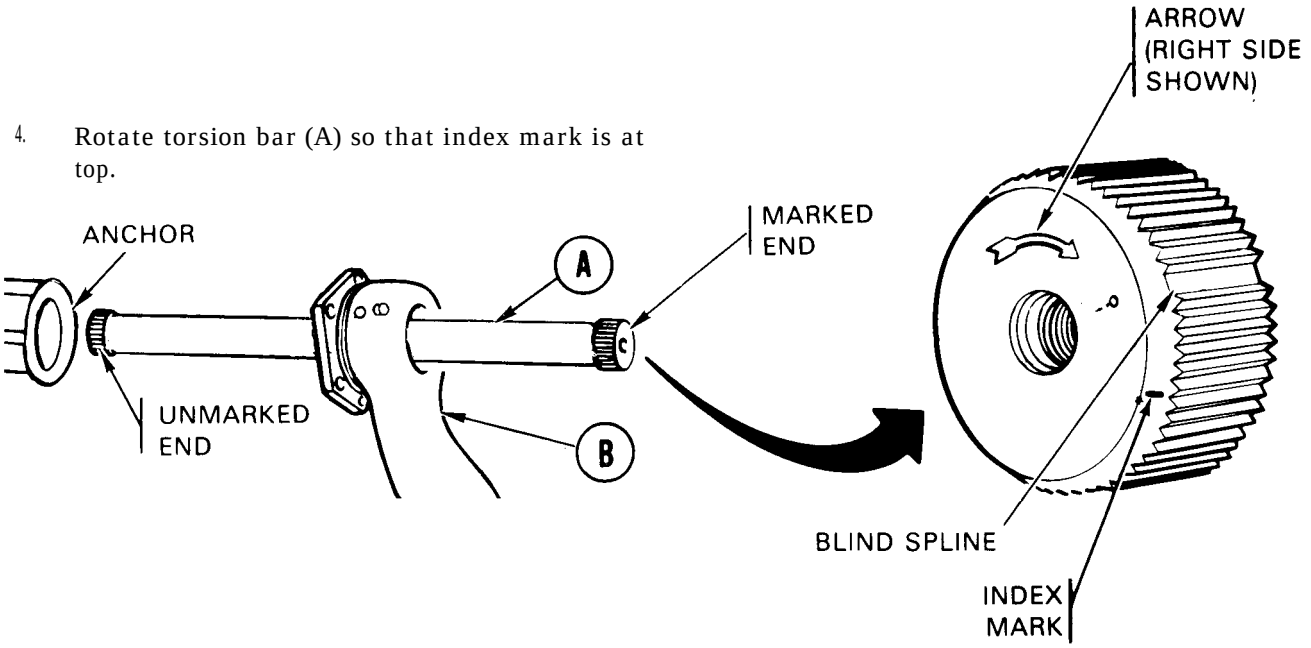
1. Apply grease to splined ends of torsion bar (A).



2. Fill outer end opening with grease (1/4-inch deep).

3. Insert unmarked end of bar (A) into roadwheel support arm (B) housing.

4. Rotate torsion bar (A) so that index mark is at top.

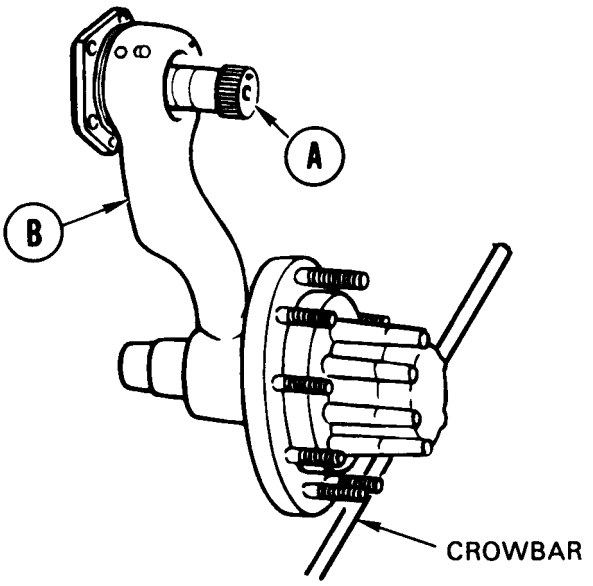


5. Push bar (A) through housing until inside end enters anchor on other side of vehicle. When this is done, about 1/2 inch of bar will be out of housing.

Go on to Sheet 6

SUSPENSION TORSION BAR REPLACEMENT (Sheet 6 of 7)

6. Using crowbar (or pinch bar), apply upward pressure to support arm (B) until blind spline on bar (A) and index marks on support arm (B) are alined.

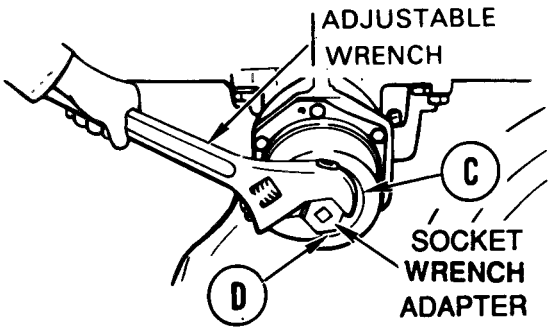


7. Using slide hammer puller and adapter, push end of bar (A) in as far as it will go. Remove blocks and crowbar.

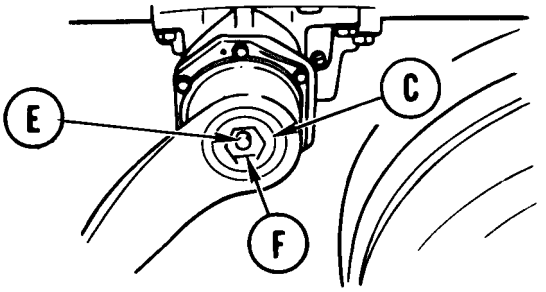
8. Remove slide hammer and adapter

9. Apply grease to end of bar (A).

10. Using adjustable wrench with socket wrench adapter, screw end plug (C) and spacer (D) into place. Remove socket wrench adapter.



11. Secure spacer (D) and end plug (C) with lockwasher (E) and screw (F).



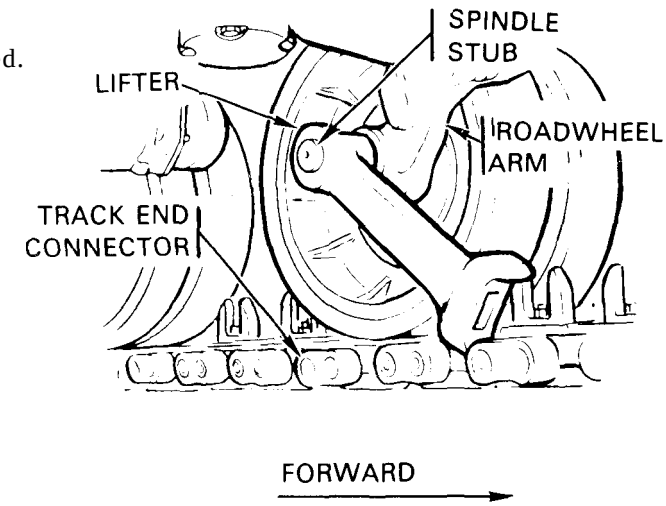
12. Using deep socket with ratchet, tighten screw (F).

Go on to Sheet 7

SUSPENSION TORSION BAR REPLACEMENT (Sheet 7 of 7)

13. Position lifter to inside of roadwheel over spindle stub and onto track end connector.

14. Make sure that lifter is correctly placed.



15. Have second person get into driver's seat and start vehicle.

16. Direct person to drive vehicle forward slowly.

17. When lifter is straight up and down, tell second person to stop vehicle.

18. Install hub assembly (page 14-18)

End of Task

TA249557

TORSION BAR ANCHOR REPLACEMENT (Sheet 1 of 3)

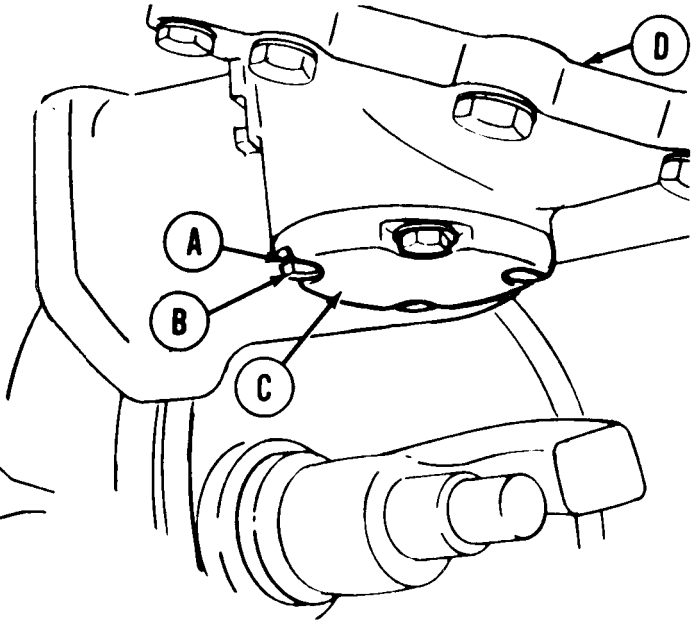
TOOLS: 3/4 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
Putty knife
Extractor tool set
Portable drill and drill set
Crowbar
Pry bar

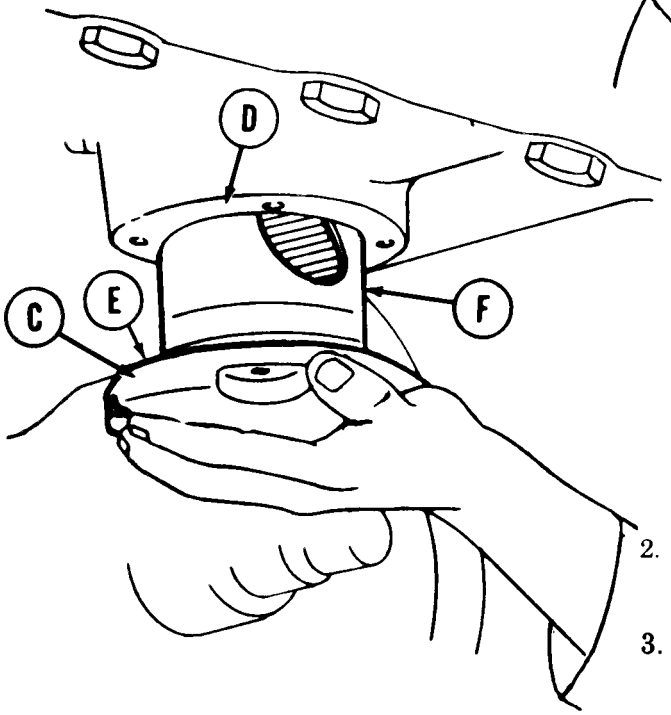
SUPPLIES: Gasket
Pins (2 required)
Lockwashers (4 required)
Corrosion preventive (Item 82, Appendix D)
Solid film lubricant (Item 83, Appendix D)

PRELIMINARY PROCEDURE: Remove torsion bar from exact opposite side of vehicle (page 14-24)

REMOVAL:

1. Using socket, remove four screws (A) and lockwashers (B) securing cover (C) to roadwheel housing (D).





2. Using pry bar, pry cover (C) free from housing (D).

3. Remove cover (C), gasket (E), and anchor (F) as assembly from housing (D). Throw gasket (E) away.

Go on to Sheet 2

TORSION BAR ANCHOR REPLACEMENT (Sheet 2 of 3)

NOTE

If anchor cannot be removed, perform steps 4 thru 9. If anchor was removed, go to step 10.

4. Using socket head screw key, remove two plugs (G) from cover (C).

5. Reverse cover (C) and secure to anchor (F) using two previously removed screws (A).

NOTE

Cover (C) will rest against road-wheel housing (H).

6. Using socket, alternately tighten screws (A) until snug.

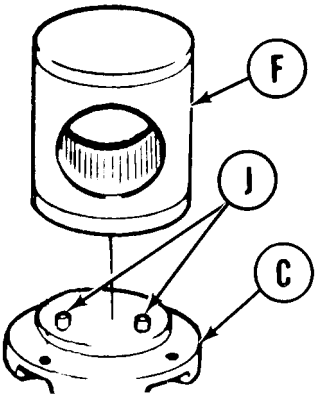
WARNING

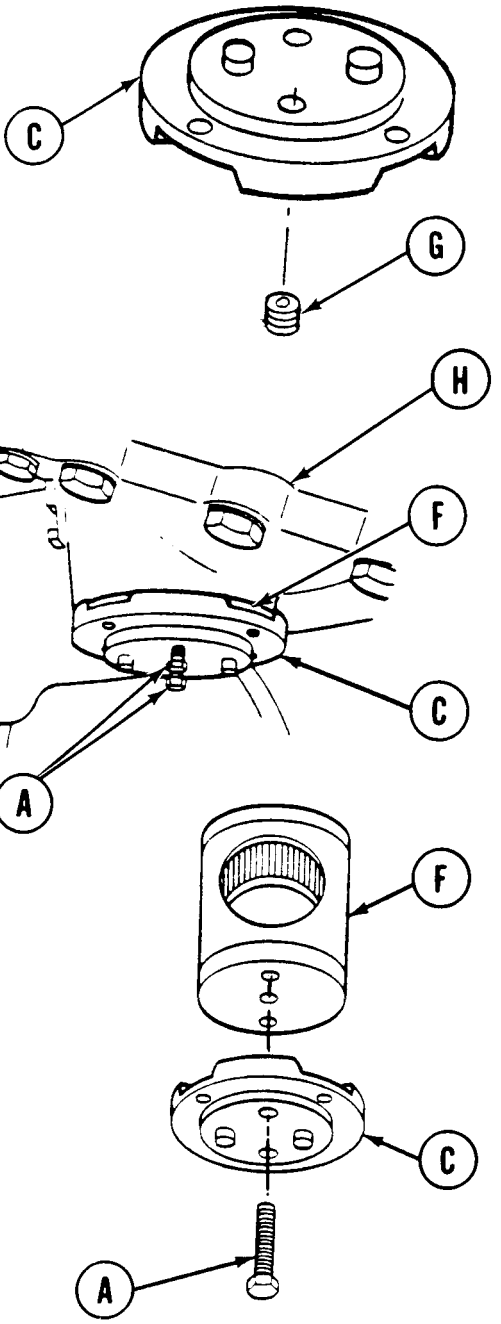
Hold cover (C) in place while performing step 7. Cover (C) and anchor (F) could fall free from vehicle, causing injury.

7. Alternately tighten screws (A) to pull anchor (F) from vehicle evenly.

8. Remove cover (C) and anchor (F) from vehicle.

9. Remove two screws (A) securing cover (C) to anchor (F).





10. Separate anchor (F) from cover (C).

11. If pins (J) must be removed from cover, using drill, make 1/4 inch hole in top of pin.

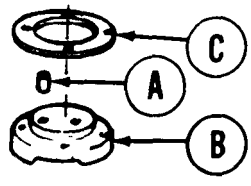
12. Using extractor tool, remove pins (J) from cover.

Go on to Sheet 3

TORSION BAR ANCHOR REPLACEMENT (Sheet 3 of 3)

13. Apply corrosion preventive to the inside of the torsion bar anchor housing and solid film lubricant to the torsion bar anchor.

14. Remove them, as necessary, to repair suspension system.



INSTALLATION:

1. Press two pins (A) into cover (B), if they were removed.

2. Install gasket (C) to cover (B).

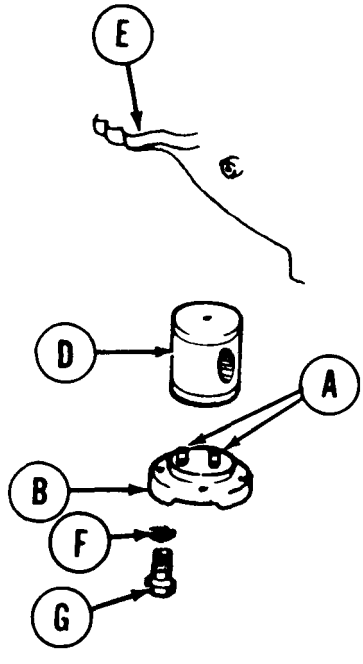
3. Position anchor (D) onto cover (B) so that two pins (A) fit into holes in anchor.

4. Lift cover (B) and anchor (D) as an assembly. Mount in roadwheel housing (E) opening.

5. Install four new lockwashers (F) and screws (G) to secure cover (B) to housing (E).

6. Using socket wrench, tighten four screws (G).

7. Install torsion bar at opposite side of tank (page 14-27).



End of Task

TRACK SUPPORT ROLLER REPLACEMENT (Sheet 1 of 11)

PROCEDURE INDEX

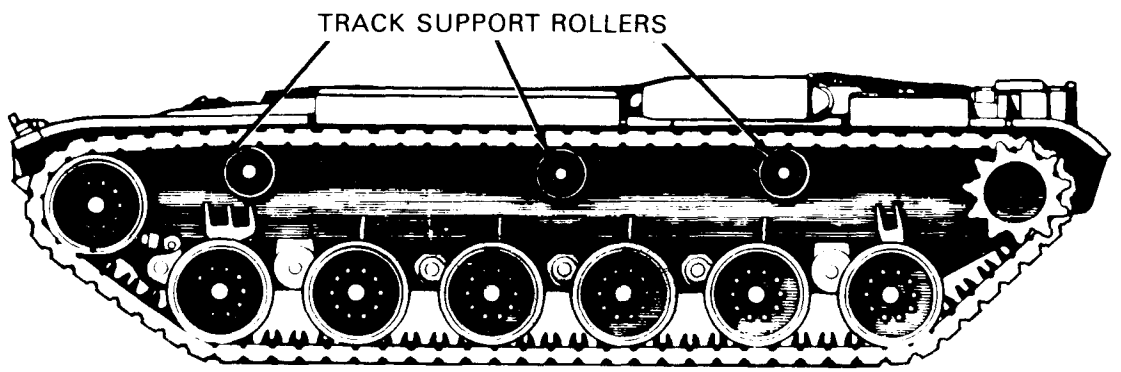
TOOLS: Ratchet with 1/2 in. drive
9/16 in. socket with 1/2 in. drive
2-1/2 in. socket with 3/4 in. drive
Hydraulic jack
Hammer
Flat-tip screwdriver
Slide hammer puller (5573615)
Ratchet with 3/4 in. drive
Pliers
3/16 in. alining punch
3/8 in. punch
1/2 in. rod
Straight punch 3/4 in. dia. 10 in. long

SPECIAL TOOLS: Socket wrench (Item 29, Chapter 3, Section I)
Seal inserter (Item 23, Chapter 3, Section I)
Axle remover adapter (Item 8, Chapter 3, Section I)

SUPPLIES: Gaskets (2 required)
Grease (Item 37, Appendix D)
Rags (Item 65, Appendix D)
Spring pins
Seals
Nut, lock
Cotter pin
Wooden planks 2 in. by 6 in. by 4 ft. (or metal plates) (2 required)
Wooden safety block 2 in. by 6 in. by 2 ft.
Lockwashers (6 required)

PERSONNEL: Two

REFERENCES: TM 5-5420-202-10
LO 5-5420-202-12

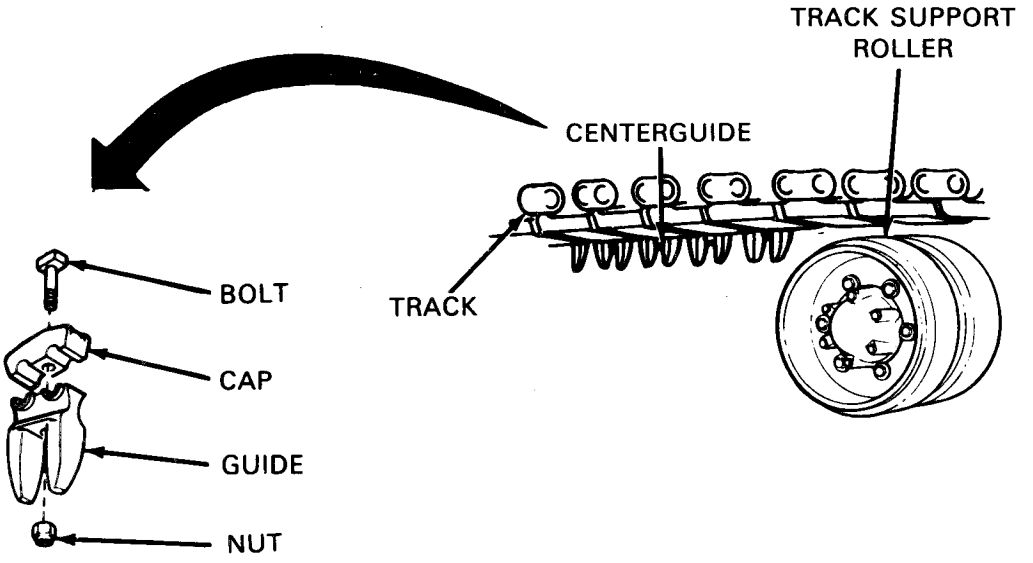


Go on to Sheet 2

TRACK SUPPORT ROLLER REPLACEMENT (Sheet 2 of 11)

REMOVAL:

1. Remove two track centerguides (TM 5-5420-202-10) just in front of support roller to be removed.



2. Have second person start engine (TM 5-5420-202-10).

3. Have second person drive vehicle slowly until area where centerguides were removed is over track support roller.

4. Have second person stop vehicle and shut engine off (TM 5-5420-202-10).

5. Apply parking brake (TM 5-5420-202-10).

6. Loosen track tension (TM 5-5420-202-10).

Go on to Sheet 3

TA249562

TRACK SUPPORT ROLLER REPLACEMENT (Sheet 3 of 11)

NOTE

If plank or base plate is not available, position jack on roadwheel near roller and raise track.

NOTE

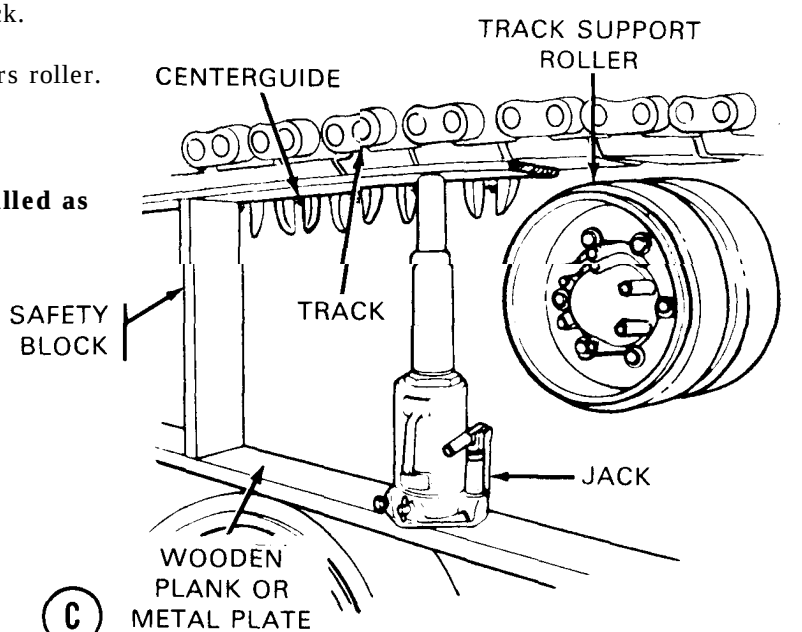
If hydraulic jack is not available, disconnect track (TM 5-5420-202-10). Then move vehicle in reverse until track is off roller.

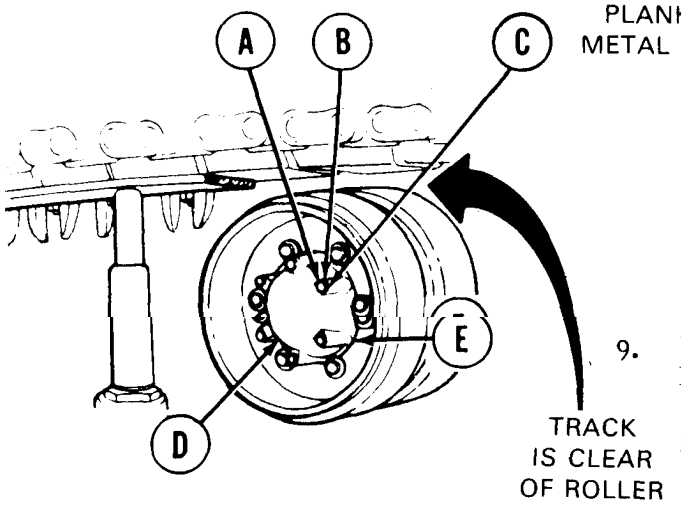
7. Using wooden plank or metal plate as base on roadwheel, position hydraulic jack.

8. Using jack, raise track so it clears roller.

NOTE

Safety block must be installed as shown.





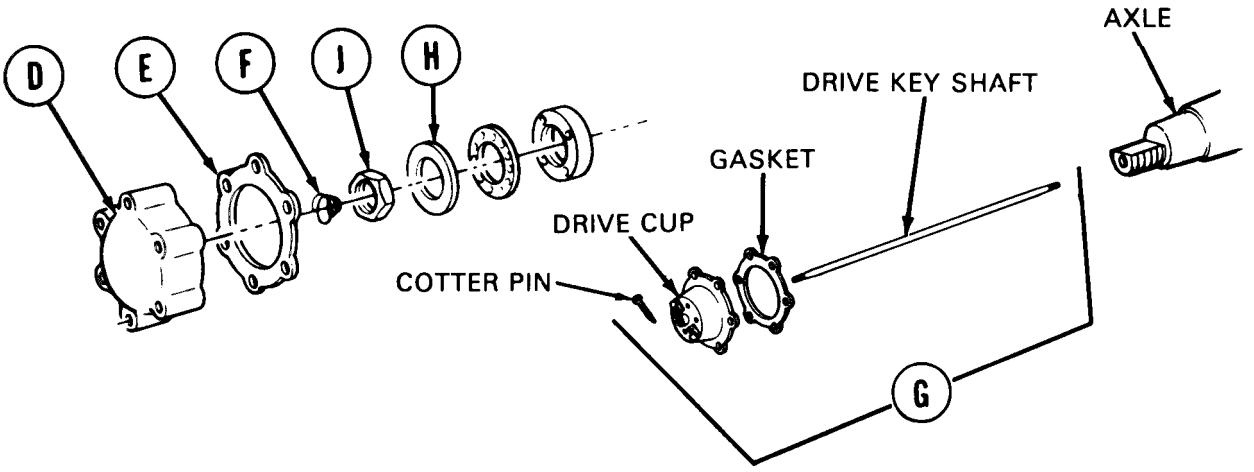
9. Using 9/16 inch socket, remove six screws (A), lockwashers (B), and flat washers (C) securing access cover plate (D) and gasket (E). Throw gasket (E) away.

Go on to Sheet 4

TA249563

TRACK SUPPORT ROLLER REPLACEMENT (Sheet 4 of 11)

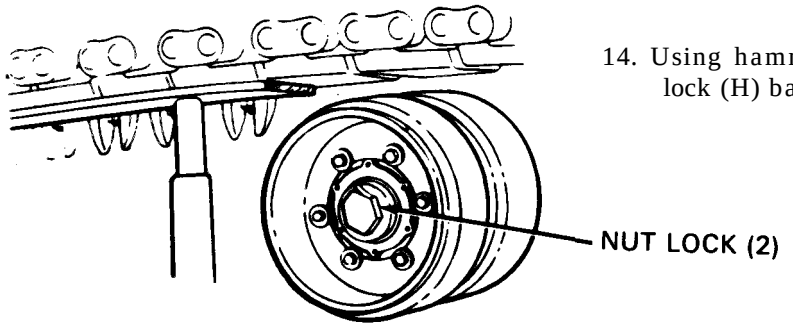
10. Remove access cover plate (D) and gasket (E). Throw gasket away.



11. On all support rollers except left front, remove static ground spring (F) from cover plate (D).

12. On left front support roller ONLY, pull speedometer drive assembly (G) from support axle.

13. Using pliers, remove cotter pin from speedometer drive assembly (G). Throw cotter pin away.



14. Using hammer and straight punch, bend nut lock (H) back from hex nut (J).

Go on to Sheet 5

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TRACK SUPPORT ROLLER REPLACEMENT (Sheet 5 of 11)

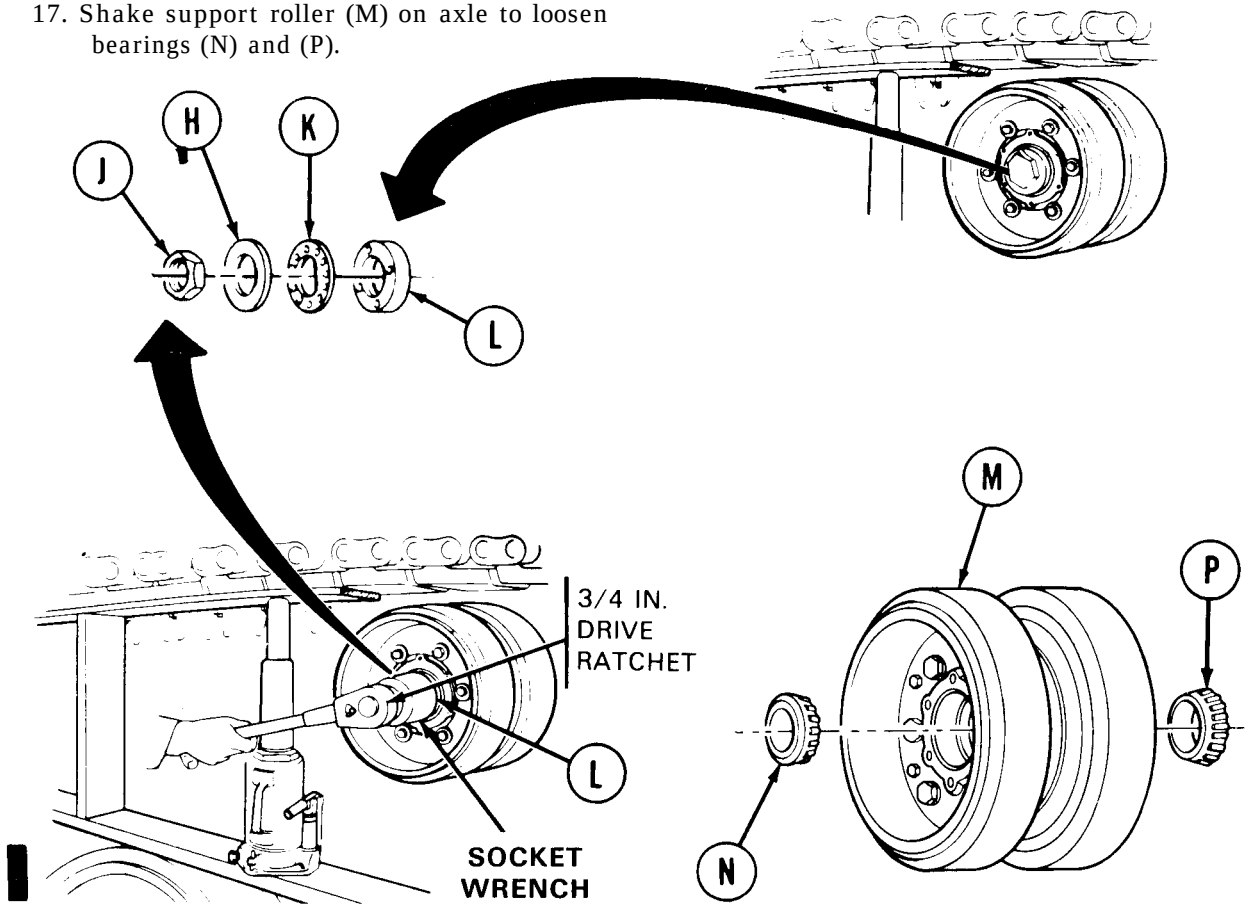
NOTE

It may be necessary to start nut lock (H) with screwdriver.

15. Using 2-1/2 inch socket, remove nut (J), nut lock (H), and lock (K). Throw nut lock (H) away.

16. Using socket wrench and 3/4 inch drive ratchet, remove locknut (L) with dowel.

17. Shake support roller (M) on axle to loosen bearings (N) and (P).



CAUTION

Do not damage axle when removing support roller parts.

18. Pull outer bearing (N) and roller (M) off axle.

19. Pull inner bearing (P) off axle.

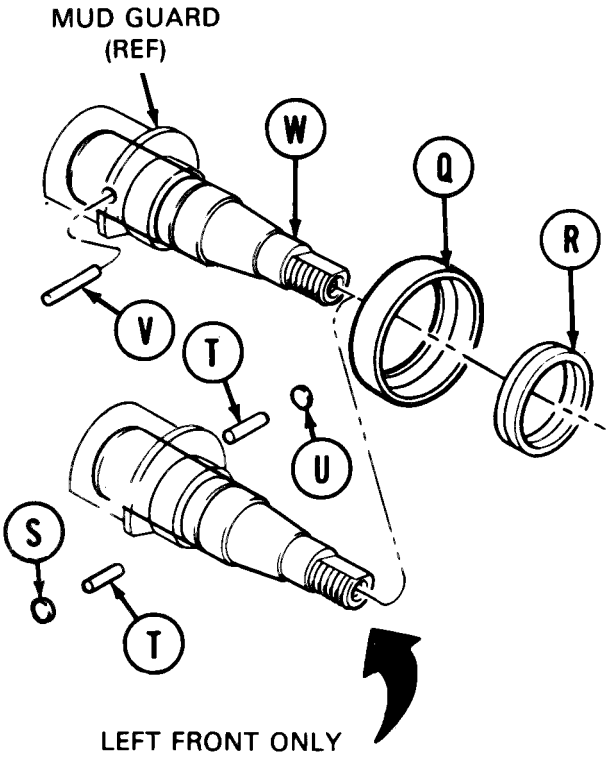
Go on to Sheet 6

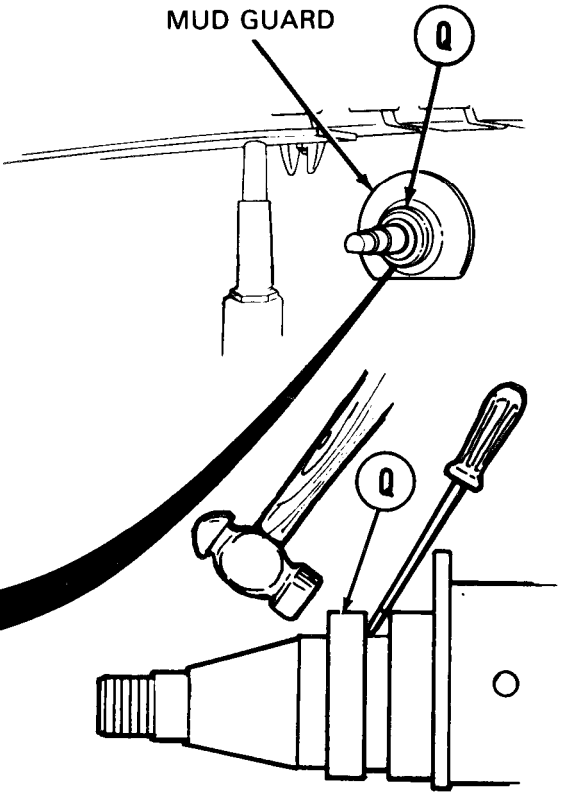
TRACK SUPPORT ROLLER REPLACEMENT (Sheet 6 of 11)

20. Using hammer, tap around deflector (Q) to free it and seal (R).

21. Using screwdriver, pry deflector (Q) and seal (R) from axle as shown.

22. Remove deflector (Q) and seal (R) from axle. Throw seal away.





23. On left front support roller ONLY, using 3/16 inch alining punch and hammer, tap around edges of plug (S) until plug can be pried free with screwdriver.

NOTE

If plugs in steps 23 and 24 cannot be removed as written, drill a hole in one or the other plug and use a 1/2 inch rod to punch out plug. Replace plug which has been drilled.

24. Using hammer and 3/8 inch punch, drive two spring pins (T) and other plug (U) out of axle. Throw pins away.

25. Using hammer and 3/8 inch punch, drive pin (V) out of other axles. Throw pins away.

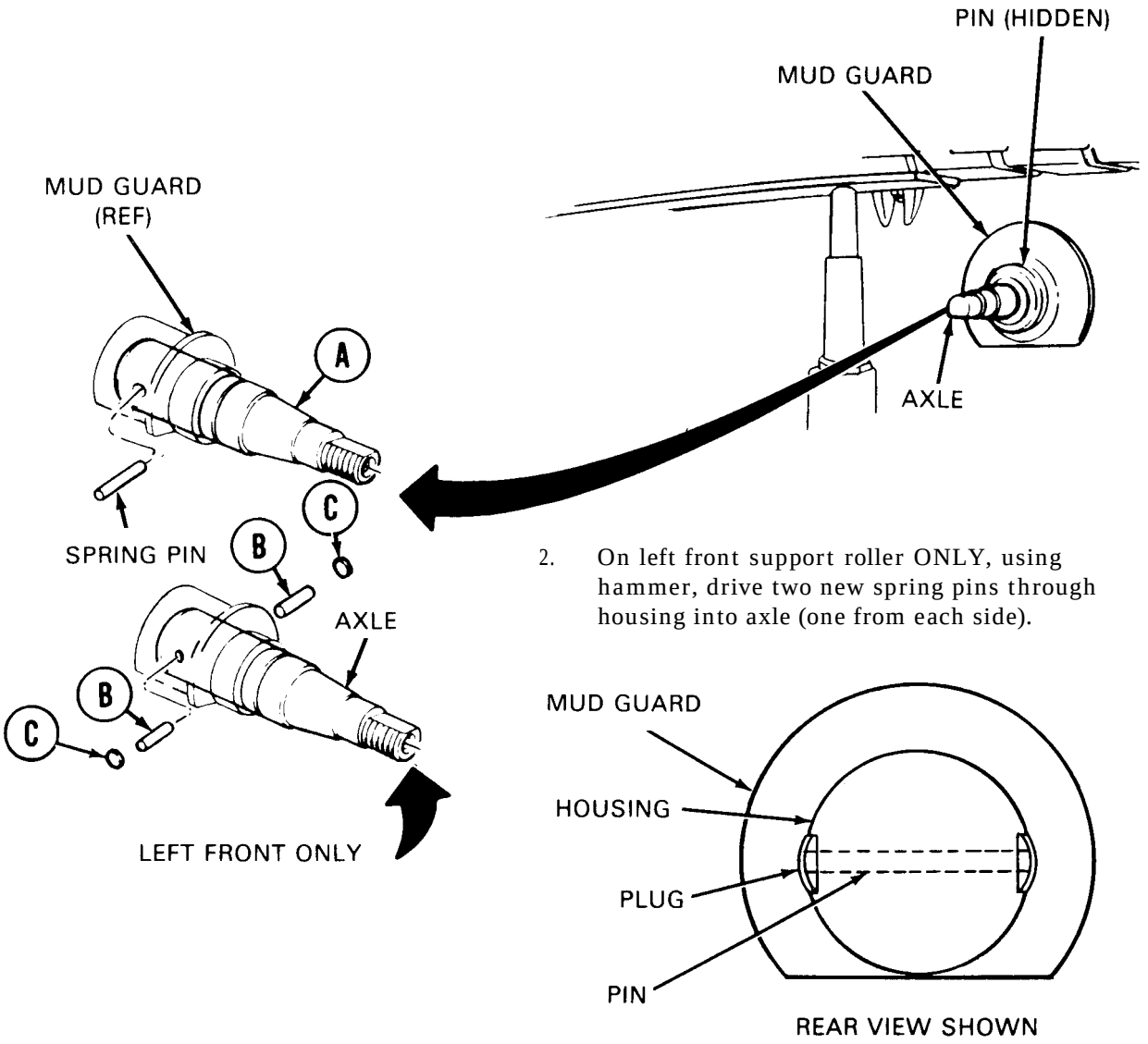
26. Using axle remover adapter and slide hammer puller, remove axle (W).

Go on to Sheet 7.

TRACK SUPPORT ROLLER REPLACEMENT (Sheet 7 of 11)

INSTALLATION:

1. Aline hole in axle (A) with hole in housing when mounting axle.



2. On left front support roller ONLY, using hammer, drive two new spring pins through housing into axle (one from each side).

3. Continue driving spring pins (B) in until they are both flush (even) with housing surface, as shown.

4. Position dome of both plugs (C) to outside. Using hammer and 3/4 inch punch, drive plugs into place (both sides).

5. When plugs are fully seated, using hammer and 3/16 inch alining punch, force edges of dome into hull housing.

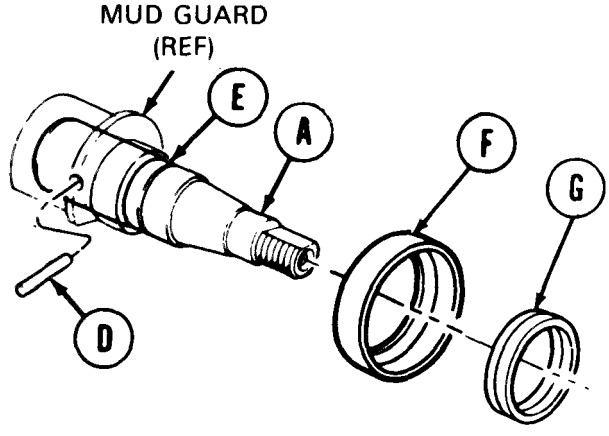
Go on to Sheet 8

TA249567

TRACK SUPPORT ROLLER REPLACEMENT (Sheet 8 of 11)

6. On other support rollers, using hammer, tap new spring pin (D) through hole in housing and axle (A).

7. Make sure spacer (E) is correctly installed on axle (A).



NOTE

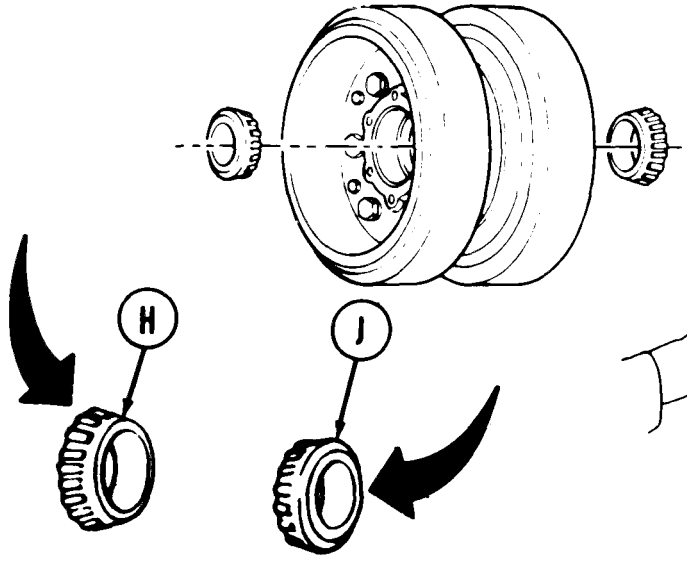
Open groove of deflector (F) and lip seal (G) must face outward.

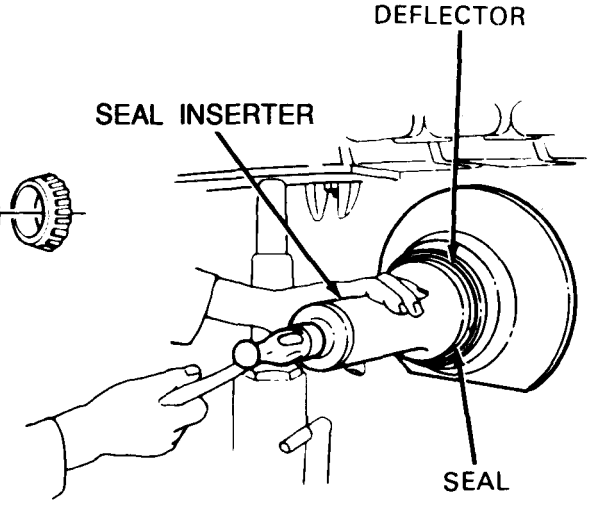
8. Mount deflector (F) and new seal (G) over axle (A).

9. Using hammer and seal inserter, tap deflector and seal into place.

10. Pack inner bearing cone (H) with grease.

11. Pack outer bearing cone (J) with grease.



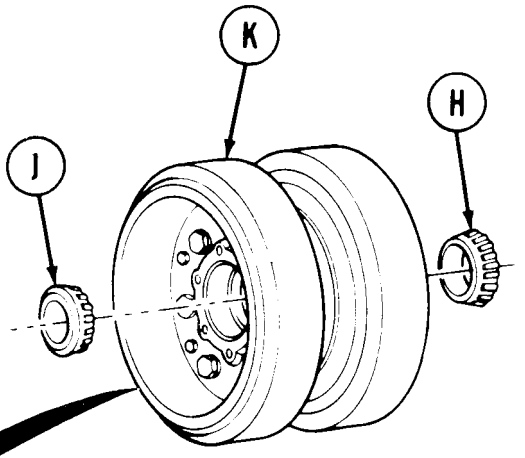


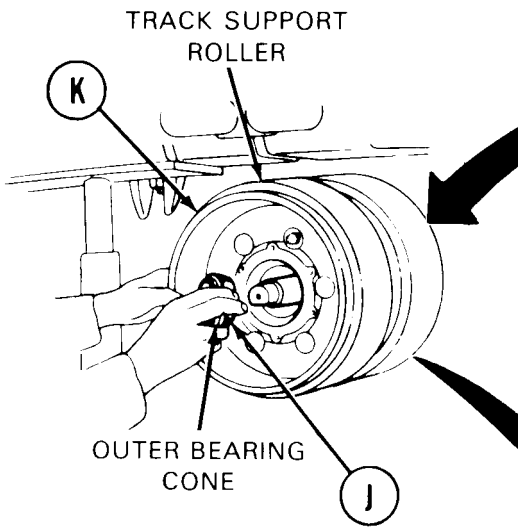
Go on to Sheet 9

TRACK SUPPORT ROLLER REPLACEMENT (Sheet 9 of 11)

12. Position inner bearing (H) to support roller assembly (K).

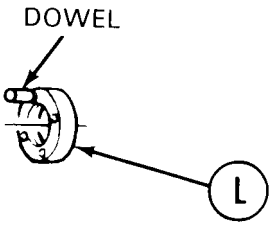
13. Have second person position support roller (K) and inner bearing (H) on support axle.

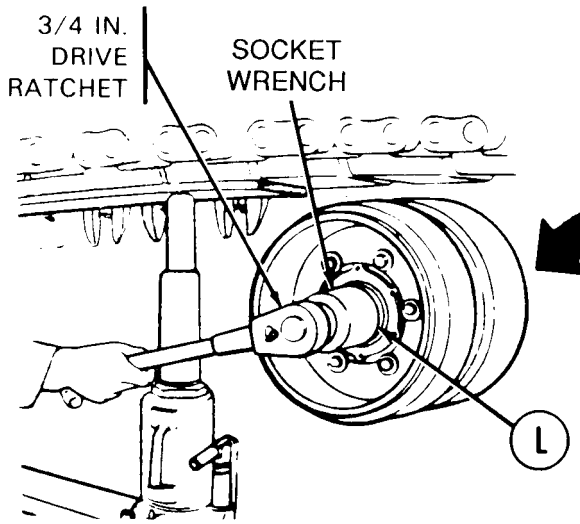




14. Install outer bearing cone (J) into position on axle.

15. Screw round nut (L) onto shaft. Using socket wrench, tighten round nut (L).





16. Loosen round nut (L) about 1/2 turn so support roller (K) turns easily.

17. Rotate support roller (K) while retightening nut (L) until bearings bind. Back nut off 1/4 turn.

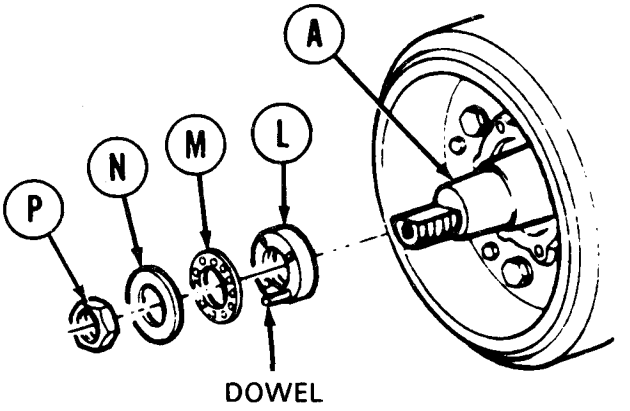
Go on to Sheet 10

TRACK SUPPORT ROLLER REPLACEMENT (Sheet 10 of 11)

18. Install lock (M) and aline hole in lock (M) to dowel of nut (L).

NOTE

If hole in lock (M) does not line up to dowel of nut (L), turn lock over for closer alinement.



19. Install new nut lock (N) onto axle (A).

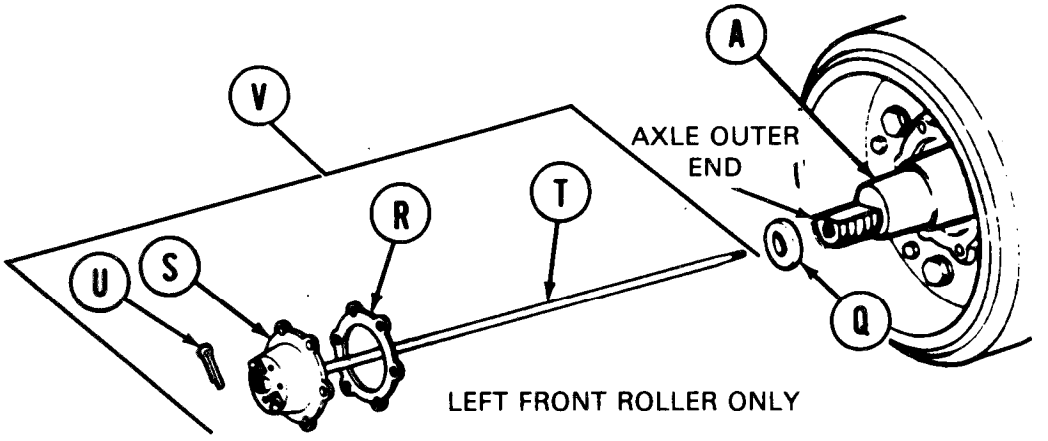
20. Make sure detent of nut lock (N) seats in hole of lock (M).

21. Install hex nut (P). Using 2-1/2 inch socket, tighten nut.

22. Using hammer and screwdriver, bend nut lock (N) around hex nut (P).

23. Grease seal (Q) with grease.

24. Install seal (Q) to axle outer end with lip facing out.



25. Install new gasket (R) to drive cup (S).

26. Push drive key shaft (T) through cup (S) and install cotter pin (U) with pliers.

27. Install speedometer drive assembly (V) through seal (Q) and into axle (A). Rotate shaft (T) until splines on its end mate to keyway in hull mounted adapter.

Go on to Sheet 11

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TRACK SUPPORT ROLLER REPLACEMENT (Sheet 11 of 11)

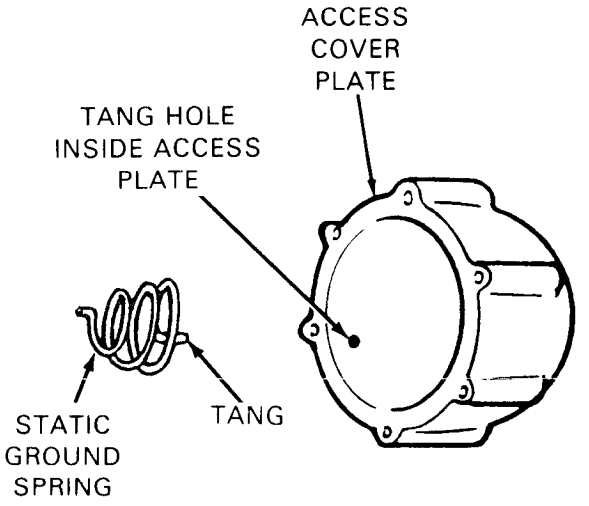
28. Place static ground spring (W) into access cover plate (X) so tang is in hole inside cover plate.

29. Twist spring (W) into place.

30. Position new gasket (Y) and cover (X) to hub and secure to hub with six lockwashers (Z), flat washers (AA), and screw (AB).

31. Using 9/16 inch socket, tighten screws alternately.

32. Using grease gun to lube fitting on cover plate, lube roadwheel (LO 5-5420-202-12).



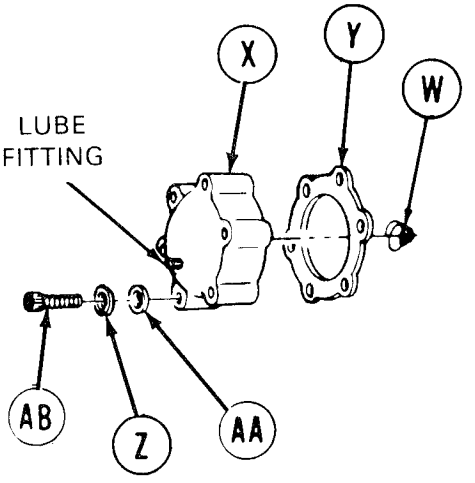
33. If jack was used, lower it. Remove jack and planks (or plates).

34. Have second person start engine and move vehicle so two centerguides can be installed (TM 5-5420-202-10).

35. Install centerguides (TM 5-5420-202-10).

36. Test drive vehicle a short way (TM 5-5420-202-10).

37. Adjust track tension (TM 5-5420-202-10).



End of Task

TA249571

TRACK SUPPORT ROLLER WHEEL AND HUB REPAIR (Sheet 1 of 5)

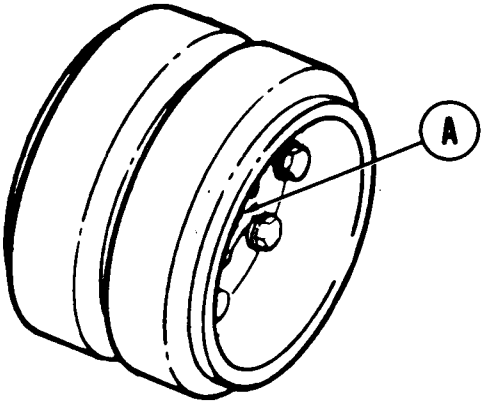
PROCEDURE INDEX

TOOLS: 13/16 in. socket with 1/2 in. drive
10 in. extension with 1/2 in. drive
Ball peen hammer
Torque wrench with 1/2 in. drive (0-175 lb-ft) (0-237 N”m)
Remover-replacer (7082863)

SPECIAL TOOLS: Bearing inserter set (Item 17, Chapter 3, Section I)
Manual control handle (Item 12, Chapter 3, Section I)

SUPPLIES: Grease (Item 37, Appendix D)
Dry cleaning solvent (Item 55, Appendix D)
Gloves (Item 69, Appendix D)
Goggles (Item 70, Appendix D)

PRELIMINARY PROCEDURE: Remove track support roller (page 14-35).



DISASSEMBLY:

NOTE

Do not use dry cleaning solvent on rubber.

WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. To avoid injury, wear protective goggles and gloves and use in a well-ventilated area. Avoid contact with skin, eyes, and clothes, and do not breathe vapors. Do not use near open fire or excessive heat. The flash point for Type I dry cleaning solvent is 100”F (38”C), and for Type II is 138°F (50°C). If you become dizzy while using dry cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

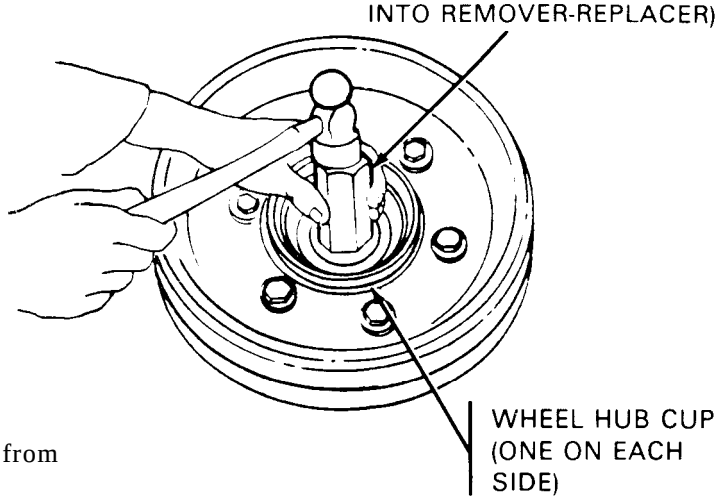
1. **Using shop towel and dry cleaning solvent, wipe wheel and hub assembly (A) clean.**

Go on to Sheet 2

TRACK SUPPORT ROLLER WHEEL AND HUB REPAIR (Sheet 2 of 5)

NOTE

If special tools do not fit into hub, stop work and order a complete new support roller assembly, then install support roller on vehicle (page 14-48).

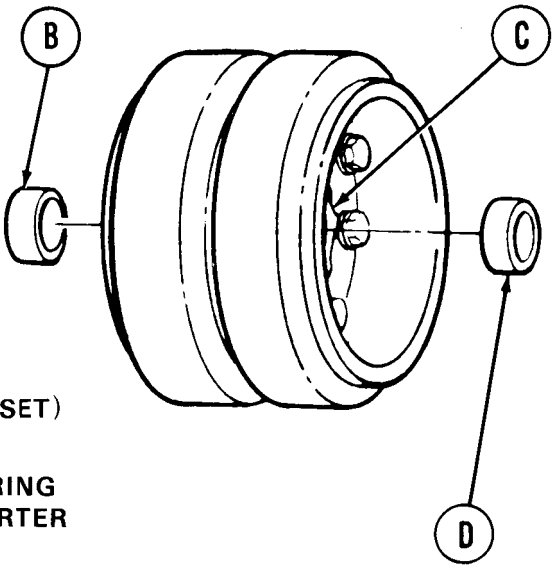


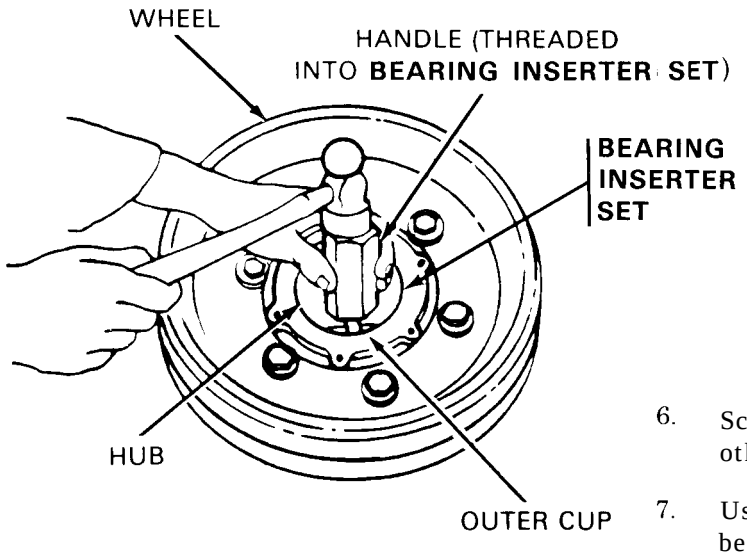
2. Position remover-replacer to inside of inner wheel hub cup (B).

3. Screw handle into remover-replacer from other side of hub (C).

4. Using hammer, tap handle to drive inner bearing cup (B) out of hub. Remove cup.

5. Position bearing inserter set to inner edge of outer bearing cup (C).



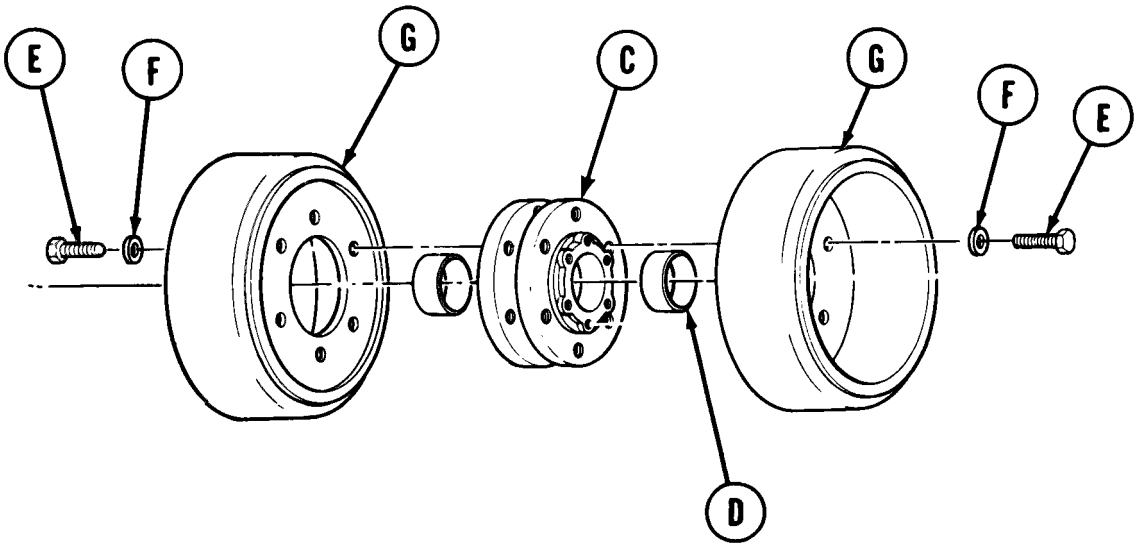


6. Screw handle into bearing inserter set on other side of hub (C).

7. Using hammer, tap handle to drive outer bearing cup (D) from hub (C). Remove cup.

Go on to Sheet 3

TRACK SUPPORT ROLLER WHEEL AND HUB REPAIR (Sheet 3 of 5)



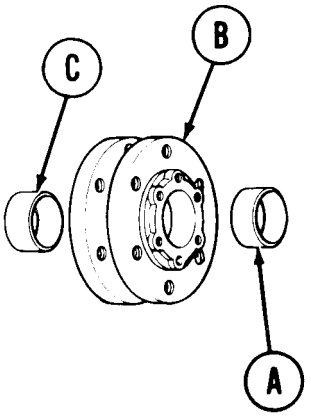
8. Using socket and 10 inch extension, remove six screws (E) and washers (F) securing wheel (G) on one side of hub (C).

9. Repeat step 8 for wheel (G) on other side of hub (C).

Go on to Sheet 4

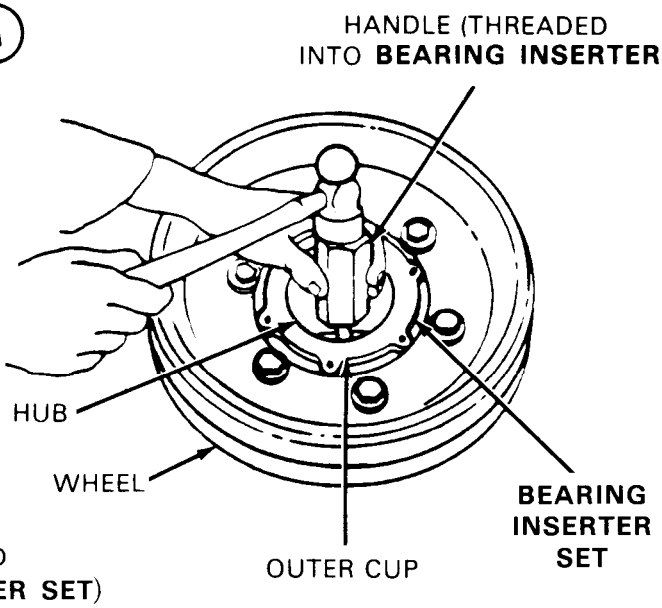
TA249574

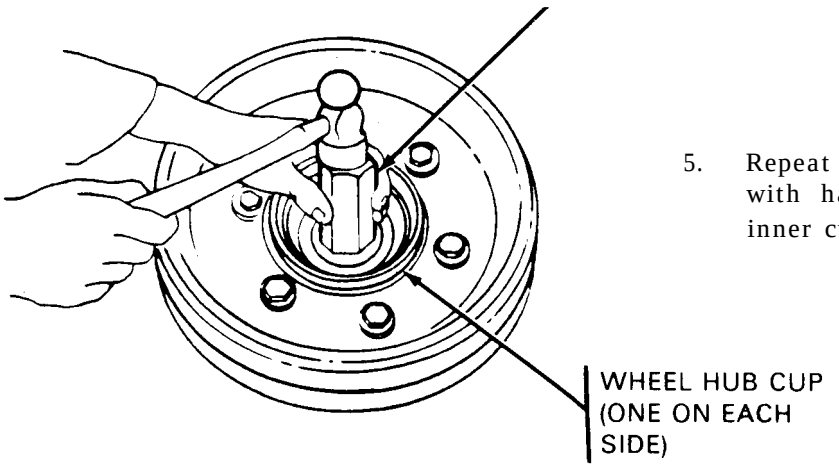
TRACK SUPPORT ROLLER WHEEL AND HUB REPAIR (Sheet 4 of 5)



ASSEMBLY

1. Position outer wheel bearing cup (A) with its smallest end toward center of hub (B).
2. Install bearing inserter set over edge of cup (A).
3. Screw handle into bearing inserter set.
4. Tap handle to seat outer cup (A) in hub (B).

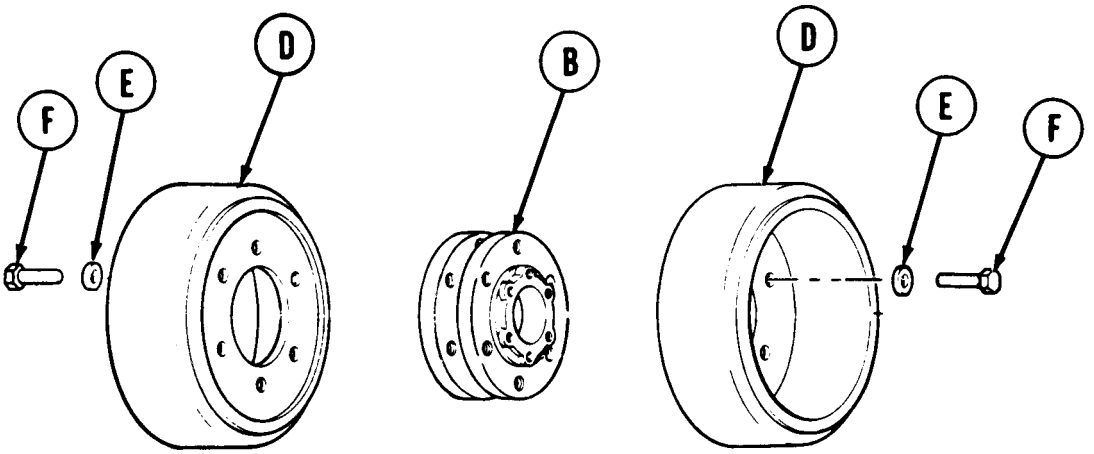




5. Repeat steps 1 through 4 using hammer with handle and remover-replacer to seat inner cup (C) in hub (B).

Go on to Sheet 5

TRACK SUPPORT ROLLER WHEEL AND HUB REPAIR (Sheet 5 of 5)



6. Position wheels (D) to hub (B).
7. Install six washers (E) and screws (F) to secure one wheel (D) to hub (B).
8. Install six washers (E) and screws (F) to secure second wheel (D) to other side of hub (B).
9. Using torque wrench with socket and extension, tighten all 12 screws (F) alternately to 125-135 lb-ft (169-183 N·m) dry.
10. Install track support roller to vehicle (page 14-40).

End of Task

TA249576

COMPENSATING IDLER WHEEL AND ROADWHEEL REPLACEMENT (Sheet 1 of 4)

PROCEDURE INDEX

TOOLS: 1-9/16 in. socket with 3/4 in. drive
Ratchet with 3/4 in. drive
16 in. extension with 3/4 in. drive
Hinged handle with 3/4 in. drive
Torque wrench with 3/4 in. drive (0-600 lb-ft) (0-814 N·m)
Wire brush

SPECIAL TOOL: Roadwheel arm lifter (Item 13, Chapter 3, Section I)

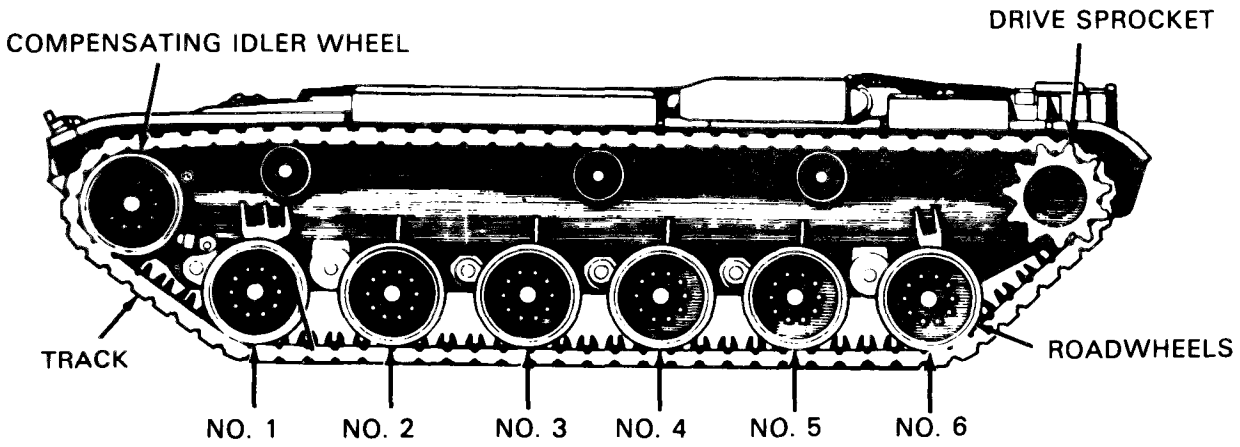
PERSONNEL: Two

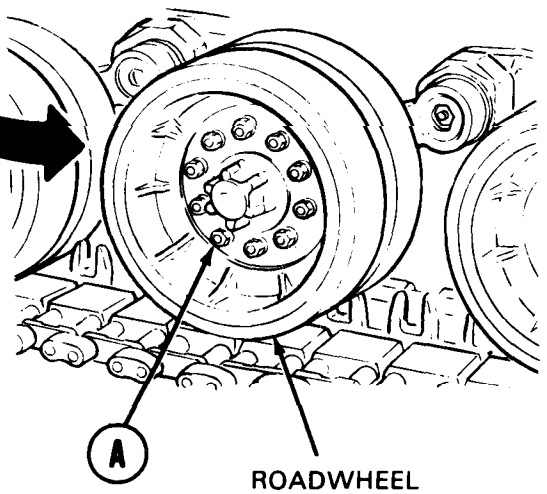
SUPPLIES: Self-locking nuts (10 required)
Rags (item 65, Appendix D)
Wooden blocks

REFERENCE: TM 5-5420-202-10

Go on to Sheet 2

COMPENSATING IDLER WHEEL AND ROADWHEEL REPLACEMENT (Sheet 2 of 4)





REMOVAL:

NOTE

There are six roadwheel positions No. 1 through No. 6 on each side of vehicle.

There are two roadwheels at each of these 12 positions for 24 roadwheels at ground level. In addition, there is a compensating idler wheel at front top on each side of vehicle. Each compensating idler consists of two road wheels. Thus, there are four roadwheels in addition to 24 at ground level - 28 roadwheels in all.

WARNING

Position vehicle on firm level ground to prevent vehicle movement that may result in injury or death to personnel.

1. Using 1-9/16 inch socket wrench, loosen 10 nuts (A). Do not remove.

NOTE

On **compensating idler wheel only, disconnect track (TM 5-5420-202-10) and proceed to step 9.**

Go on to Sheet 3

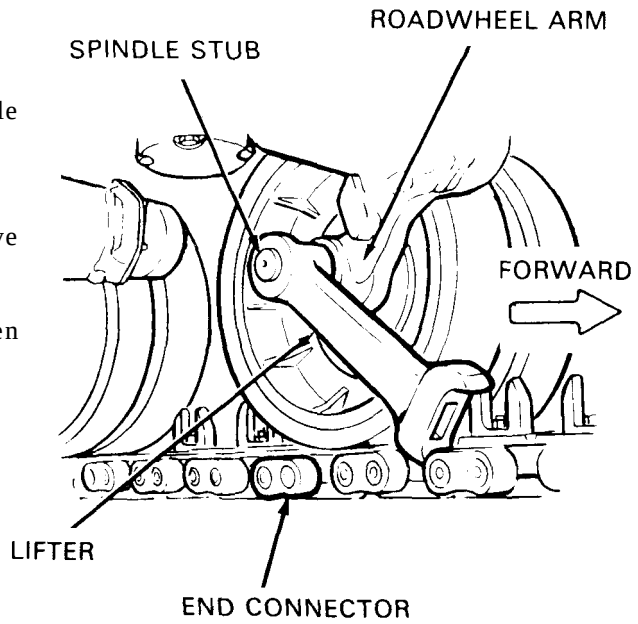
COMPENSATING IDLER WHEEL AND ROADWHEEL REPLACEMENT (Sheet 3 of 4)

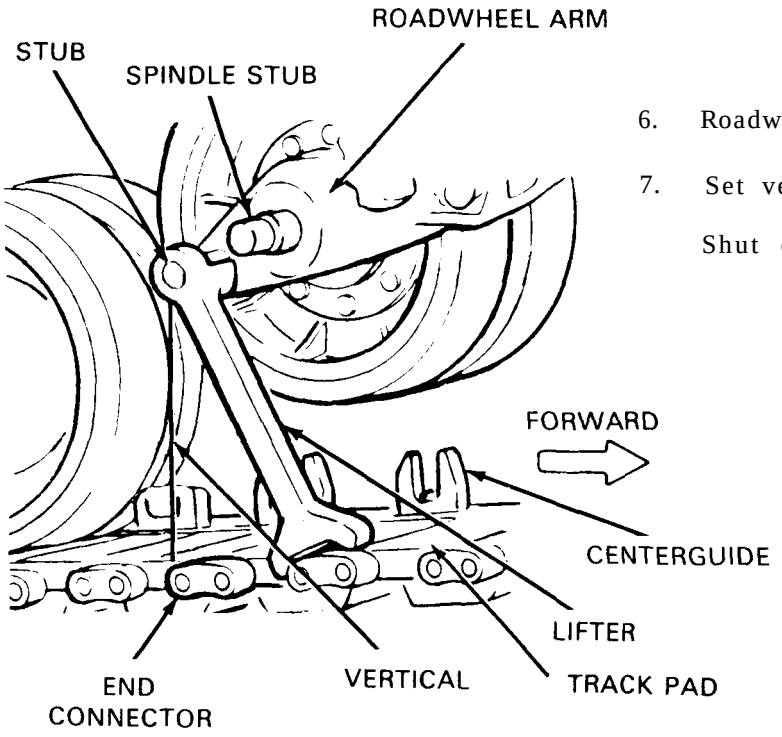
2. Get roadwheel arm lifter tool.

3. Place lifter to inside of track over spindle stub, track pad, and end connector that is forward of roadwheel.

4. Have second person start engine and drive vehicle forward slowly.

5. Direct second person to stop vehicle when lifter is straight up and down.





6. Roadwheel should be up off track centerguides.

7. Set vehicle brakes (TM 5-5420-202-10).

   Shut engine off (TM 5-5420-202-10).

WARNING

Failure to block vehicle properly may result in injury or death to personnel.

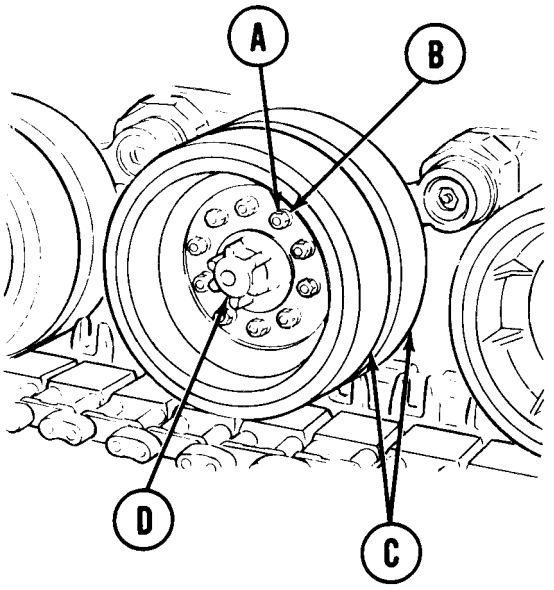
8.1 On both sides of vehicle, position wooden blocks between track and roadwheel at front and rear of roadwheel.

Go on to Sheet 4

COMPENSATING IDLER WHEEL AND ROADWHEEL REPLACEMENT (Sheet 4 of 4)

9. Using 1-9/16 inch socket with extension and hinged handle, remove 10 self-locking nuts (A) and 20 flat washers (B) securing roadwheel (C) to wheel hub (D). Throw 10 self-locking nuts (A) away.

10. Using second person for help, pull one roadwheel, then the other, off mounting studs. Do not damage studs.



CLEANING AND INSPECTION:

Inspect and clean mounting hub surface with wire brush and rag prior to mounting roadwheels.

INSTALLATION:

NOTE

Do not damage hub mounting studs when installing roadwheels.

1. Position inside roadwheel (C) with wear surface (E) facing out.

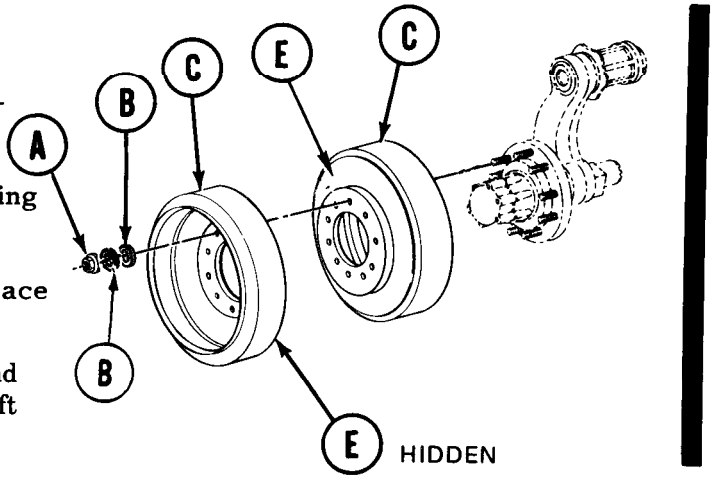
2. Position outside roadwheel (C) with wear surface (E) facing in.

3. **Install 20 flat washers (B) and 10 new self-locking nuts (A).**

4. **Have second person back vehicle up so lifting arm can be removed.**

5. **If track was removed or disconnected, replace or reconnect (TM 5-5420-202-10).**

6. **Using 1-9/16 inch socket with extension and torque wrench, tighten nuts (A) to 550-650 lb-ft (751-887 N·m) dry.**



End of Task

MECHANICAL TRACK ADJUSTING LINK REPLACEMENT (Sheet 1 of 5)

PROCEDURE INDEX

TOOLS: Slip joint pliers
Ratchet with 3/4 in. drive
3/4 in. socket wit 3/4 in. drive
1-1/8 in. socket with 3/4 in. drive
Pry bar
Wire brush
Soft mallet
Slide hammer puller (5573615)

SPECIAL TOOLS: Roadwheel adapter (Item 9, Chapter 3, Section I)

SUPPLIES: Cotter pins (2 required)
Rags (Item 65, Appendix D)
Lockwashers (2 required)

PERSONNEL: Three

REFERENCE: TM 5-5420-202-10

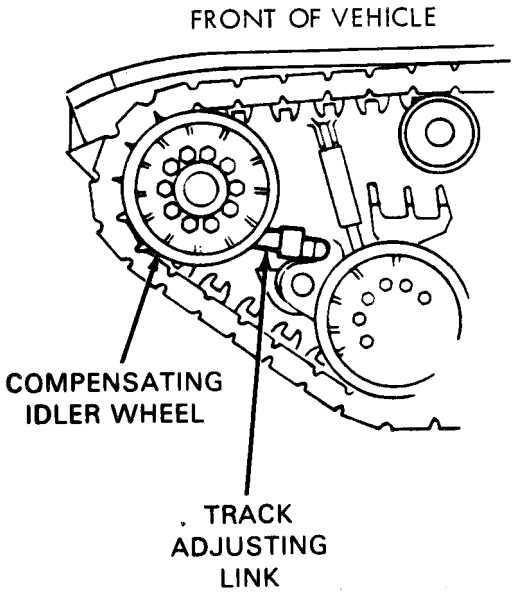
PRELIMINARY PROCEDURES: Disconnect track (TM 5-5420-202-10
Remove front fender (page 16-58)

NOTE

This adjusting link replacement procedure is for left side of vehicle. Right side adjusting link procedure is similar.

Go on to Sheet 2

MECHANICAL TRACK ADJUSTING LINK REPLACEMENT (Sheet 2 of 5)



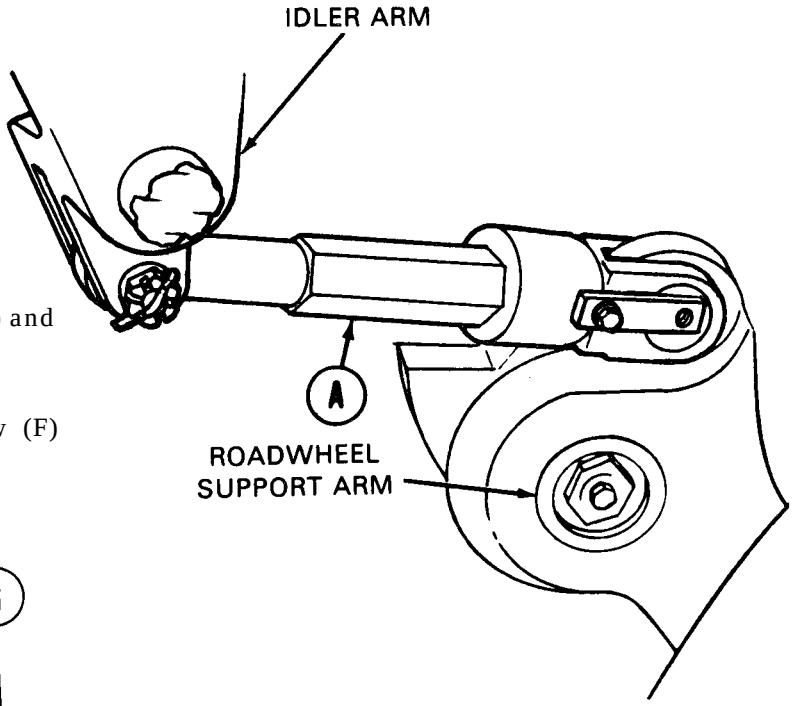
REMOVAL:

1. Using wire brush and rag, clean off both ends of adjusting link (A).

NOTE

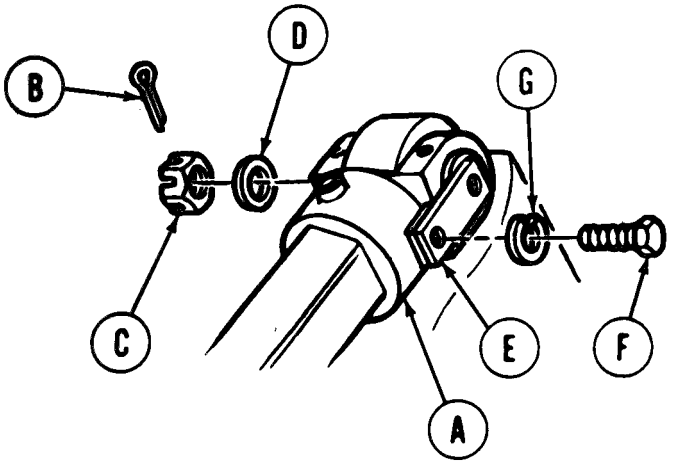
Due to a configuration change, link pin that secures adjusting link to roadwheel arm was reversed and is not installed with threaded end toward huII of vehicle.

2. Using pliers, straighten cotter pin (B) and remove it from slotted nut (C) at roadwheel support arm.



3. Using 1-1/8 inch socket, remove nut (C) and washer (D) from pin (E).

4. Using 3/4 inch socket, remove screw (F) securing pin (E) to link (A). Rem washer (G).



Go on to Sheet 3

TA249582

MECHANICAL TRACK ADJUSTING LINK REPLACEMENT (Sheet 3 of 5)

5. Go to other end of adjusting link (A).

6. Using pliers, straighten cotter pin (H) and remove it from slotted nut (J).

7. Using 1-1/8 inch socket, loosen nut (J).

8. Remove nut (J) and washer (K).

9. Using 3/4 inch socket, remove screw (L) and lockwasher (M).

10. Screw nut (J) a couple of turns onto pin (N).

11. Using hammer, tap pin (N) to loosen it.

12. Screw adapter into end of pin (E). Screw end of slide hammer puller into adapter and, using slide hammer puller, remove pin (E) and shim (P) from link (A).

13. Using second person to hold link (A), rotate arm so that pin (N) will be *over* front slope of vehicle.

14. Remove nut (J) from pin (N).

NOTE

Have third person hold link when pin (N) is removed.

NOTE

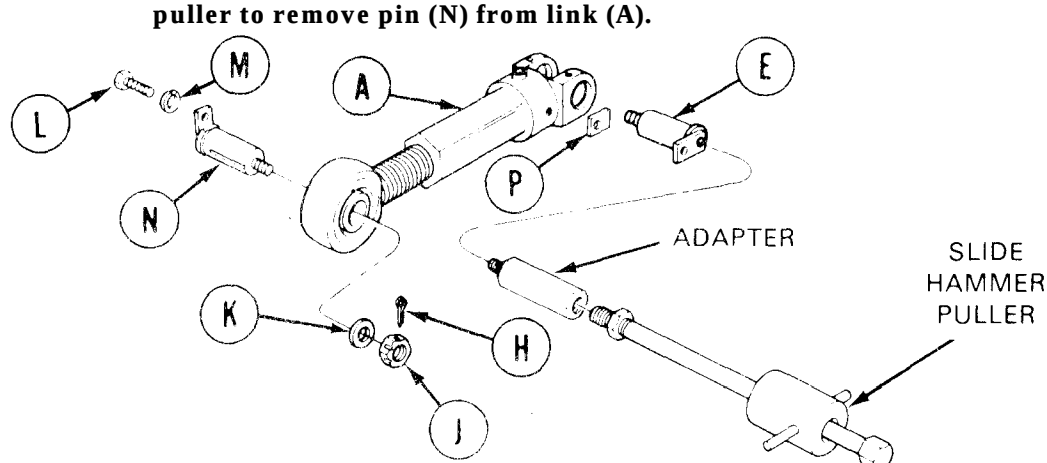
Use caution when removing pin (N) because link (A) may fall away.

15. Using pry bar, remove pin (N) from link (A).

16. Remove link (A) from vehicle. Lower idler arm to normal position.

NOTE

If pin (N) is hard to remove, screw adapter onto pin (N). Screw end of slide hammer puller into adapter and use slide hammer puller to remove pin (N) from link (A).



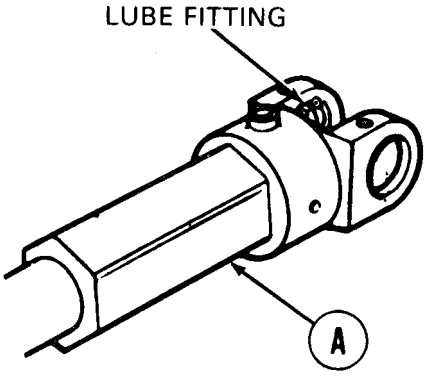
Go on to Sheet 4

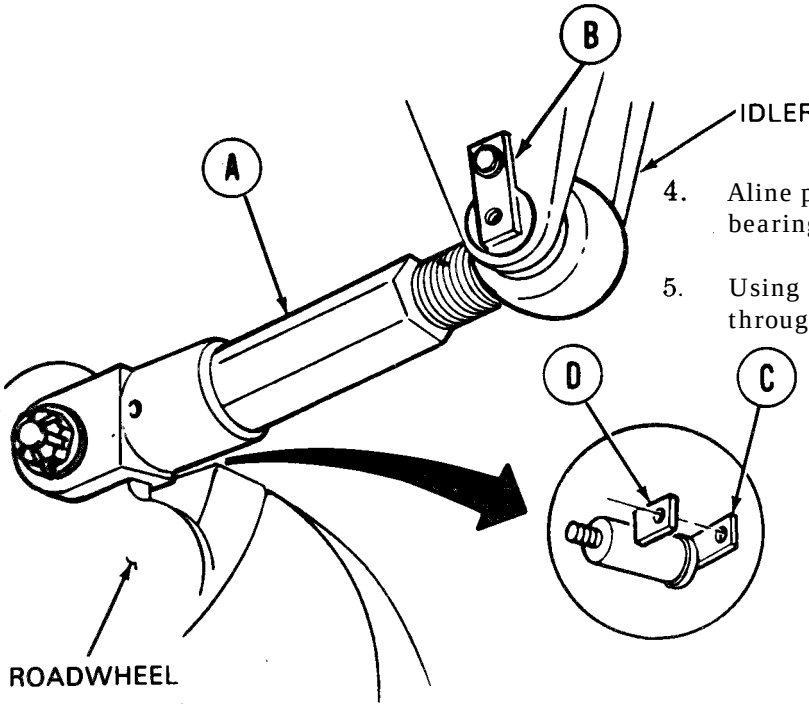
TA249583

MECHANICAL TRACK ADJUSTING LINK REPLACEMENT (Sheet 4 of 5)

INSTALLATION:

1. Before mounting link (A), position it so lube fitting is on top (pointing outward).
2. Rotate arm until link mount is above slope at front of vehicle.
3. With help of second person, lift link (A) into mounted position on vehicle.





4. Aline pin (B) grooves with two splines in bearing. Insert pin (B) toward hull side.
5. Using hammer, drive pin (B) into place through link (A).
6. Lower arm and position other end of link (A) on mount at roadwheel.
7. Aline pin (C) with two splines in bearing. Insert pin (C) from outside.
8. Using hand to hold shim (D) in place between mount and pin (C), use hammer and drive pin (C) through link (A).

Go on to Sheet 5

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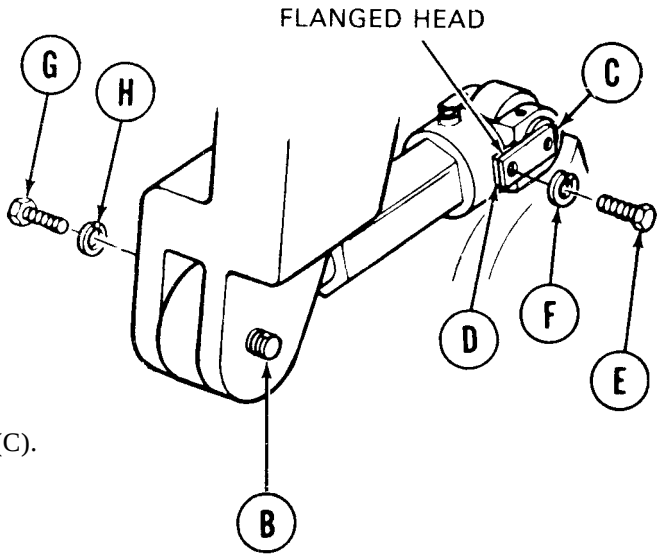
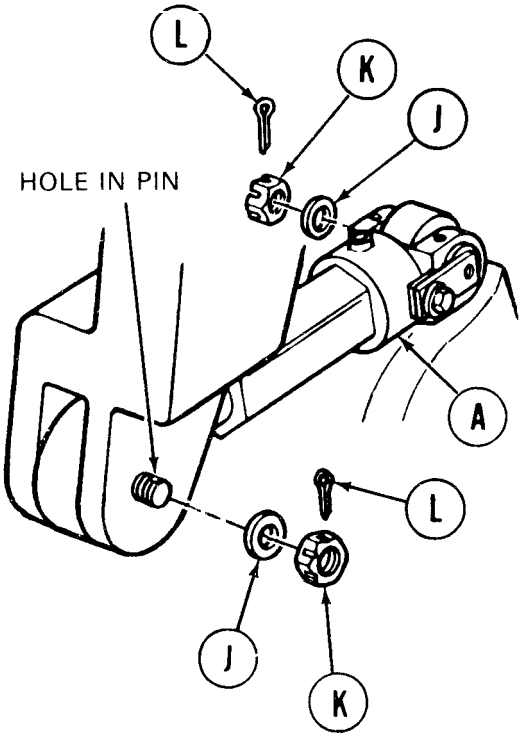
MECHANICAL TRACK ADJUSTING LINK REPLACEMENT (Sheet 5 of 5)

9. Aline flanged head of pin (C) with hole for screw (E). Insert screw (E) through washer (F), flanged head of pin (C), and shim (D).
10. Using 3/4 inch socket, tighten screw (E).
11. Aline flanged head of pin (B) with hole for screw (G). Insert screw (G) through washer (H) and flanged head of pin (B).
12. Using 3/4 inch socket, tighten screw (G).
13. Using 1-1/8 inch socket, install both washers (J) and nuts (K) onto pins (B) and (C).
14. Using pliers, install cotter pins (L) through slots in nuts (K) and holes in pins (B) and (C).
15. Install compensating idler wheels (page 14-53).
16. Install front fender (page 16-62).
17. Connect track (TM 5-5420-202-10).
18. Adjust track (TM 5-5420-202-10).





End of Task

TA249585

MECHANICAL TRACK ADJUSTING LINK REPAIR (Sheet 1 of 3)

TOOLS: 3/4 in. sliding tee
7/16 in. combination box and open end wrench
9/16 in. combination box and open end wrench
Hammer
Center punch
Chisel
Grease gun
Mounted vise

SPECIAL TOOLS: Bearing driver (Item 30.2, Chapter 3, Section I)

SUPPLIES: Lube fitting
Rags (Item 65, Appendix D)
Grease (Item 37, Appendix D)
Lockwasher

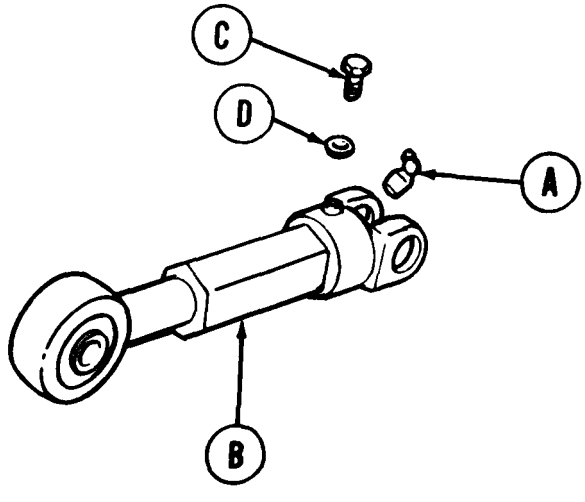
REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Disconnect track (TM 5-5420-202-10)
Remove compensating idler wheel (page 14-51)
Remove track adjusting link assembly (page 14-59)

DISASSEMBLY:

1. Using 7/16 inch wrench, remove grease fitting (A) from link (B).

2. Using 9/16 inch wrench, remove bolt (C) and lockwasher (D).



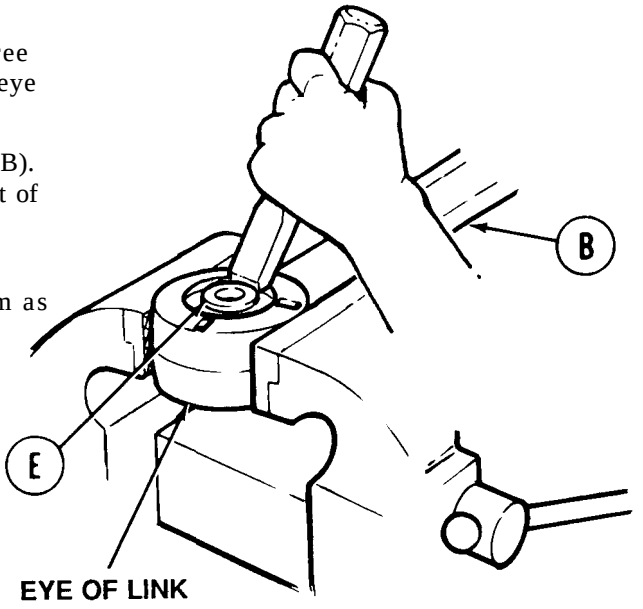
Go on to Sheet 2

MECHANICAL TRACK ADJUSTING LINK REPAIR (Sheet 2 of 3)

3. Using hammer and chisel, cut stakes at three places (both sides) that hold bearing (E) in eye end of link (B).

4. Position bearing driver to bearing in link (B). Using 3/4 inch sliding tee, press bearing out of link eye.

5. Inspect parts (A) through (E). Replace them as necessary.



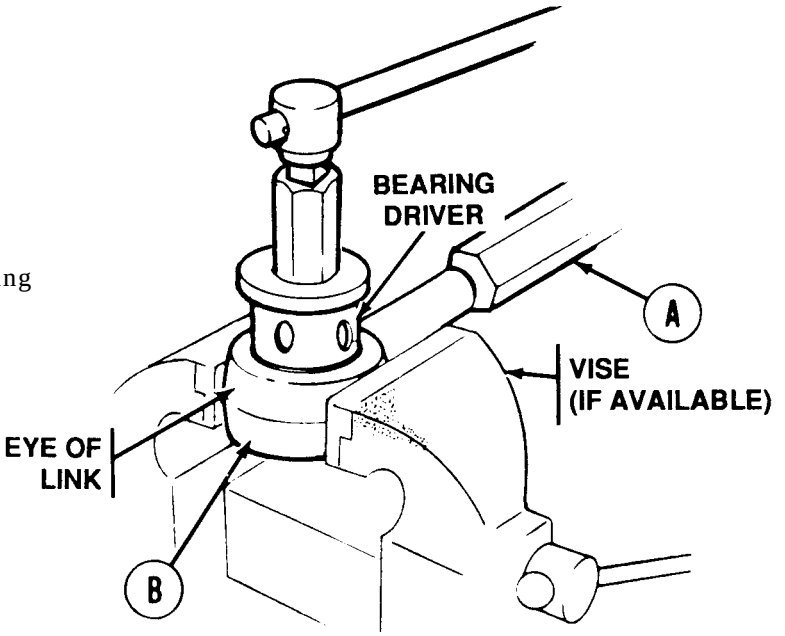
ASSEMBLY:

1. Position link (A) so eye end is facing upward.

NOTE

Make sure bearing is evenly mounted in link eye.

2. Using bearing driver, carefully press bearing (B) into eye of link (A).

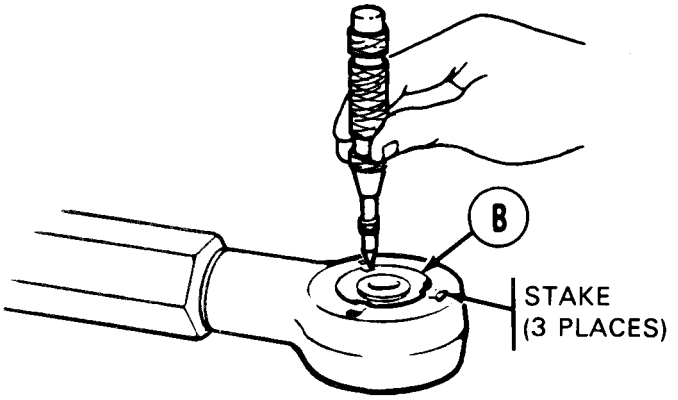


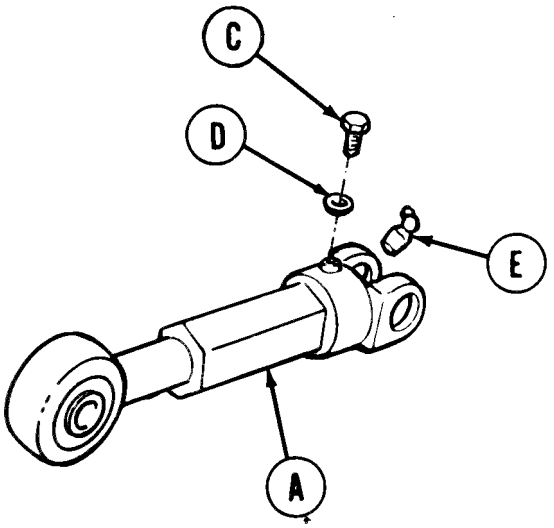
Go on to Sheet 3

MECHANICAL TRACK ADJUSTING LINK REPAIR (Sheet 3 of 3)

3. Using hammer and center punch, stake bearing (B) into link (A) in three places (both sides).

4. Install bolt (C) and Iockwasher (D) at other end of link.





5. Using 9/16 inch wrench, tighten bolt (C) in place.

6. Using 7/16 inch wrench, tighten new grease fitting (E) into position in link (A).

NOTE

For easy access with grease gun, fitting (E) should be pointing outward when link (A) is installed to vehicle.

7. Using grease gun, grease fitting (E) to make sure it is not plugged.

8. Install track adjusting link assembly (page 14-57).

End of Task

TA249588

COMPENSATING IDLER HUB AND ARM REPLACEMENT (Sheet 1 of 3)

TOOLS: 15/16 in. socket with 3/4 in. drive
Ratchet with 3/4 in. drive
Torque wrench with 3/4 in. drive
Universal joint with 3/4 in. drive
7/8 in. combination box and open end wrench
36 in. extension with 314 in. drive
T-bar with 3/4 in. drive

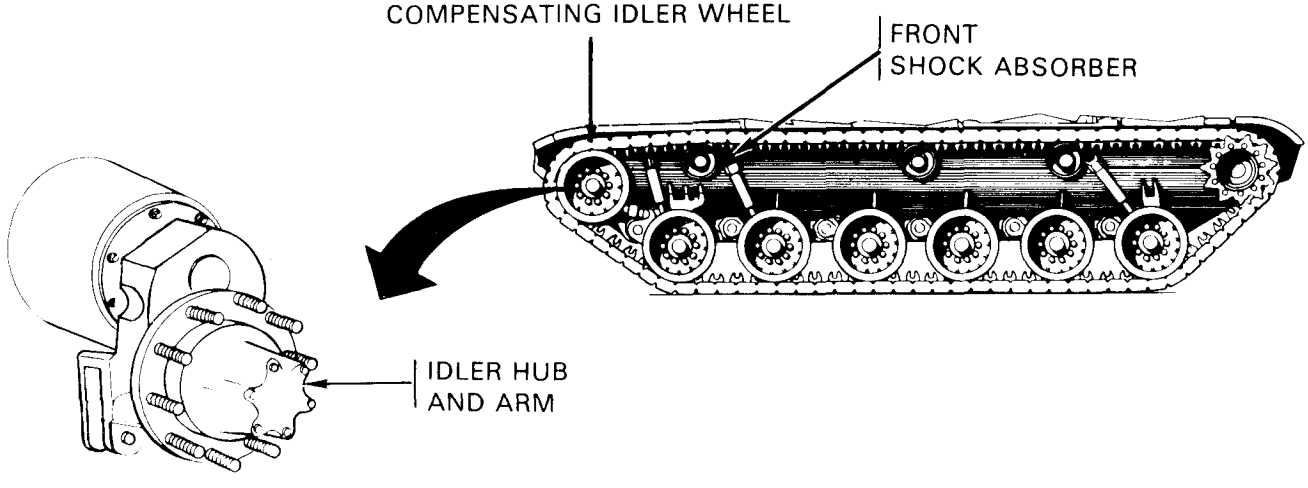
SUPPLIES: Preformed packing
5/8-11 UNC capscrews, 2 in. long (2 required)
Grease (Item 37, Appendix D)
Lockwasher (6 required)

PERSONNEL: Three

REFERENCES: TM 5-5420-202-10
LO 5-5420-202-12

PRELIMINARY PROCEDURE: Remove track adjusting link (page 14-55)

REMOVAL:



NOTE

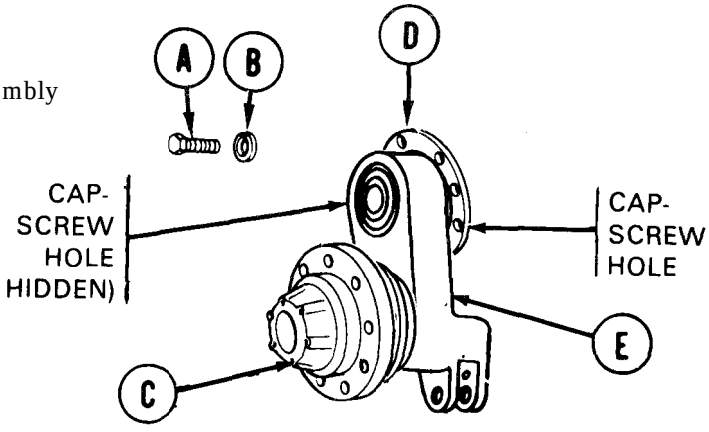
When removing screws in next step, have second person move hub to aline screws with removal slots.

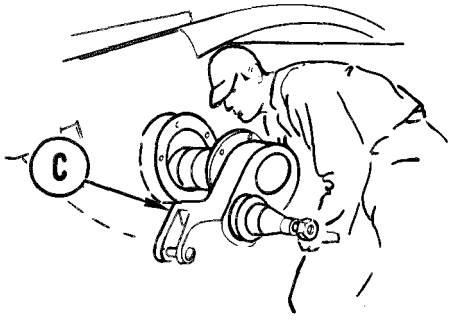
Go on to Sheet 2

TA249589

COMPENSATING IDLER HUB AND ARM REPLACEMENT (Sheet 2 of 3)

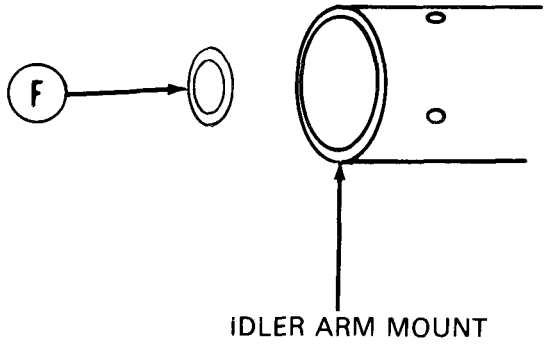
1. Using socket, remove six screws (A) and lockwashers (B) securing hub and arm assembly (C) to hull.
2. Install two capscrews into holes in oil seal retainer (D) of idler arm (E).





3. Using two other persons, support hub and arm assembly.
4. Screw two capscrews alternately into retainer (D).

5. Using two persons, remove hub and arm assembly (C).
6. Remove preformed packing (F) from groove in idler arm mount. Throw packing away.
7. Remove capscrews from retainer (D).

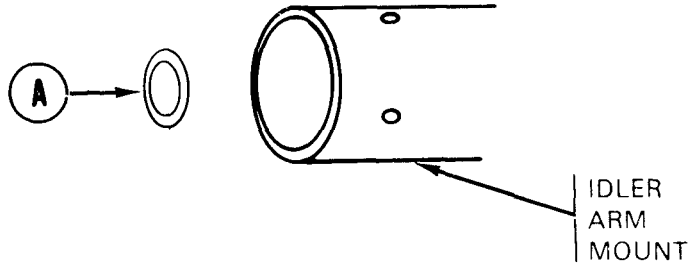


Go on to sheet 3

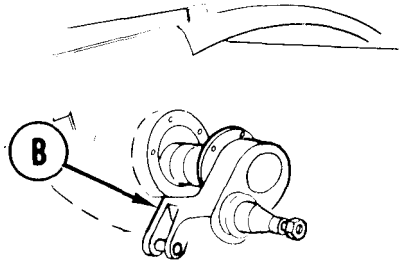
TA249590

COMPENSATING IDLER HUB AND ARM REPLACEMENT (Sheet 3 of 3)

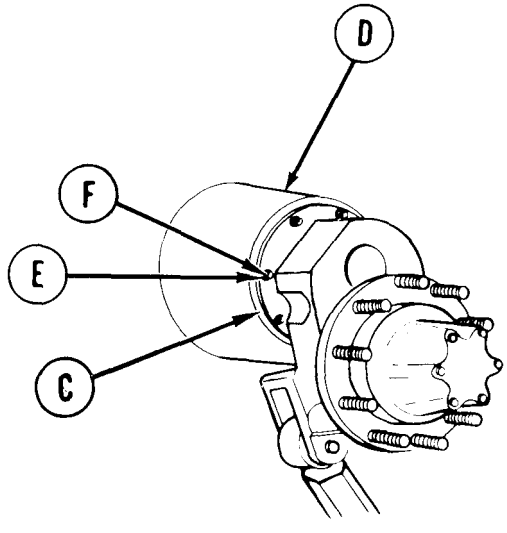
INSTALLATION:



1. Grease new packing (A). Install it to groove in idler arm mount.



2. Using three persons, lift hub and arm assembly (B) to mounting position.
3. Push arm of assembly (B) into mount opening.
4. Aline holes in grease seal retainer (C) with mounting holes on hub (D).



6. Using socket with torque wrench, tighten screws (E) to 140-165 lb-ft (190-224N·m).
7. Using grease gun on fitting, grease into idler arm mount housing (LO 5-5420-202-10).
8. Install adjustment link (page 14-57).
9. Test drive vehicle a short way TM 5-5420-202-10.

End of Task

TA249591

COMPENSATING IDLER ARM ASSEMBLY REPAIR (Sheet 1 of 5)

PROCEDURE INDEX

TOOLS: 9/16 in. socket with 1/2 in. drive
Drift punch
Ratchet with 1/2 in. drive
Hammer
1/2 in. hinged handle
Needle nose pliers
Remover replacer handle (7082881)
Pinch bar
Ratchet with 3/4 in. drive
Impact wrench with 1 in. drive
Flat-tip screwdriver
Torque wrench with 3/4 in. drive (0-600 lb-ft) (0-814 Nom)
2-1/2 in. socket with 1 in. drive

SPECIAL TOOLS: Spanner wrench (Item 27, Chapter 3, Section I)
Seal inserter (Item 21, Chapter 3, Section I)
Seal inserter (Item 24, Chapter 3, Section I)

SUPPLIES Grease (Item 37, Appendix D)
Seal

REFERENCES: TM 5-5420-202-10
LO 5-5420-202-12

PRELIMINARY PROCEDURE: Remove compensating idler arm assembly (page 14-62)

Go on to Sheet 2

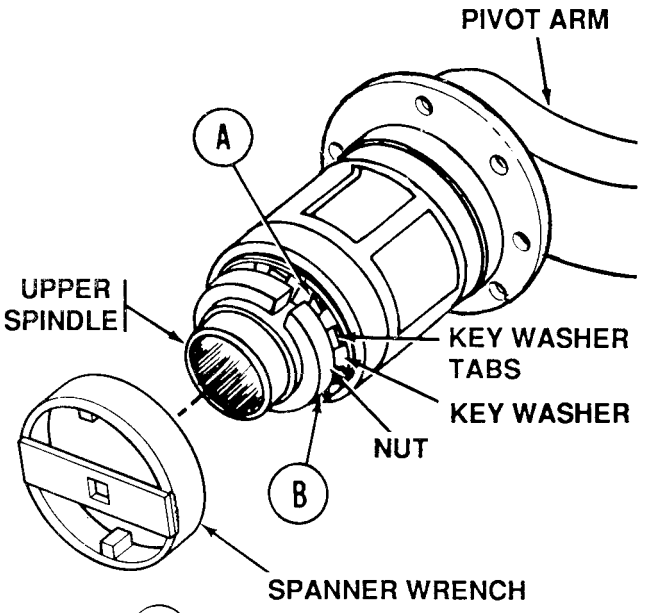
COMPENSATING IDLER ARM ASSEMBLY REPAIR (Sheet 2 of 5)

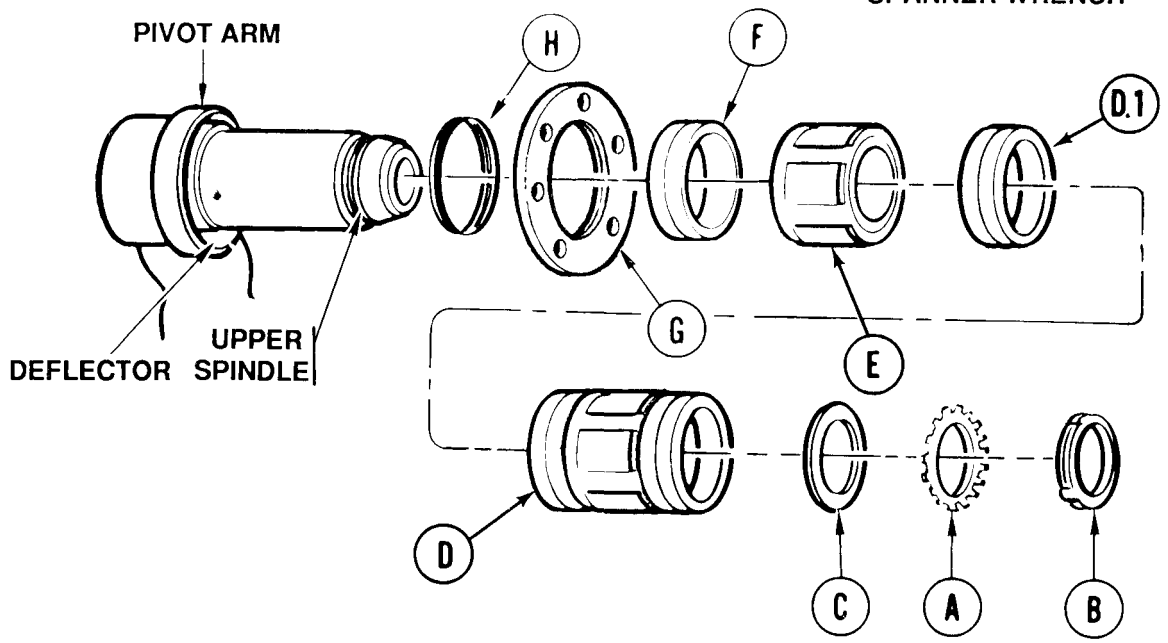
DISASSEMBLY:

1. Using hammer and punch, bend tabs of key washer (A) back from nut (B).
2. Using spanner wrench and hinged handle, loosen nut (B).
3. Remove nut (B), key washer (A), and bearing washer (C).

NOTE
Pivot arm may have either a spacer assembly (D) or inner bearing (D.1), with spacer (E), and outer bearing (F).

4. Remove either spacer assembly (D) or inner bearing (D.1), spacer (E), and outer bearing (F) from upper spindle.





5. Slide oil seal retainer (G) off upper spindle.

NOTE
It may be necessary to tap oil seal retainer (G) lightly with hammer to aid in removing outer bearing (F).

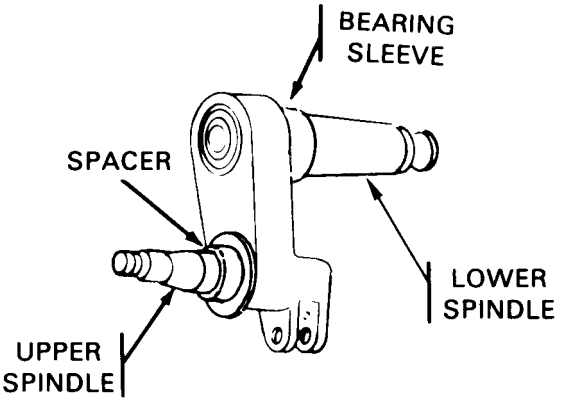
6. Using screwdriver, pry seal (H) out of retainer (G). Throw seal (H) away.

Go on to Sheet 3

COMPENSATING IDLER ARM ASSEMBLY REPAIR (Sheet 3 of 5)

CLEANING AND INSPECTION:

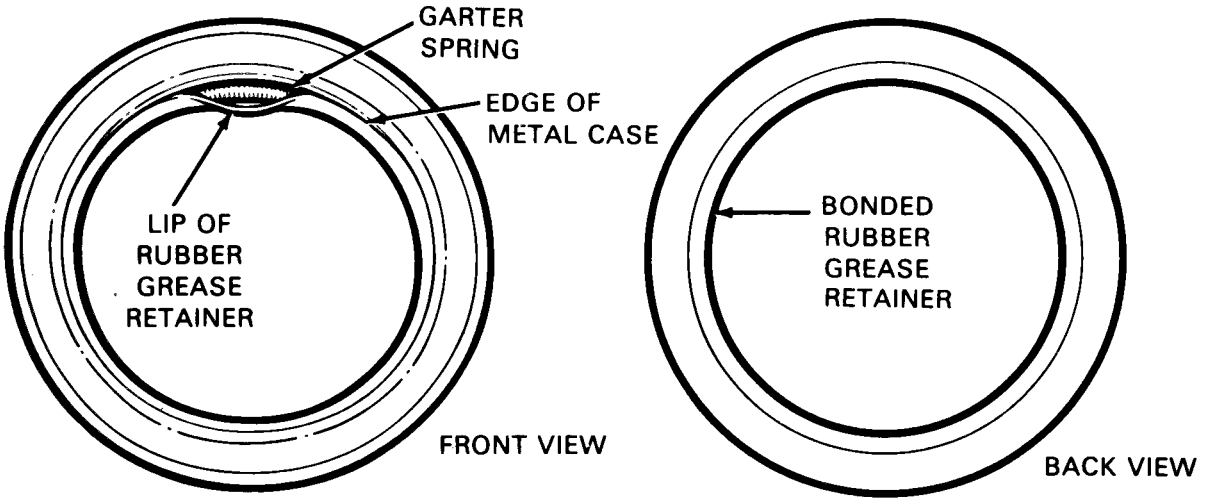
1. Clean all parts including bearings.
2. Minor nicks, scratches, gouges, and pitting are okay if they are not on machined surfaces.
3. Inspect bearings and cups for damage. Replace as necessary.
4. Check seal assembly for rust, missing rivets, or other damage. Replace seal where required.
5. Inspect all nuts, washers, and screws for wear and damaged threads.
6. Inspect spacer and bearing sleeve on spindles for scratches, nicks, or dents. If damaged, notify support maintenance.



ASSEMBLY:

NOTE

Identify FRONT and BACK of outer grease seal. Rubber grease seal retaining lip can be pulled away from metal inner edge on FRONT of seal. Pull back retaining lip on seal and expose garter spring. BACK of seal has rubber grease retainer bonded to metal case and cannot be pulled away.



OUTER GREASE SEAL

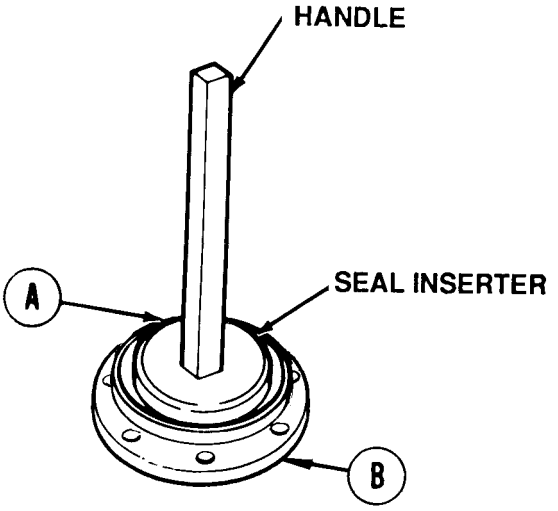
Go on to Sheet 4

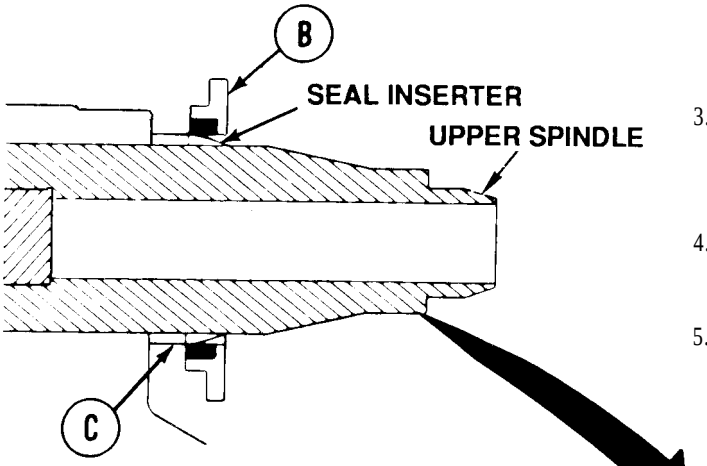
TA249594

COMPENSATING IDLER ARM ASSEMBLY REPAIR (Sheet 4 of 5)

1. Apply a light coat of grease to outside of seal (A).

2. Position new grease seal (A) into seal retainer (B) so BACK of seal is into retainer and FRONT is facing away from retainer.



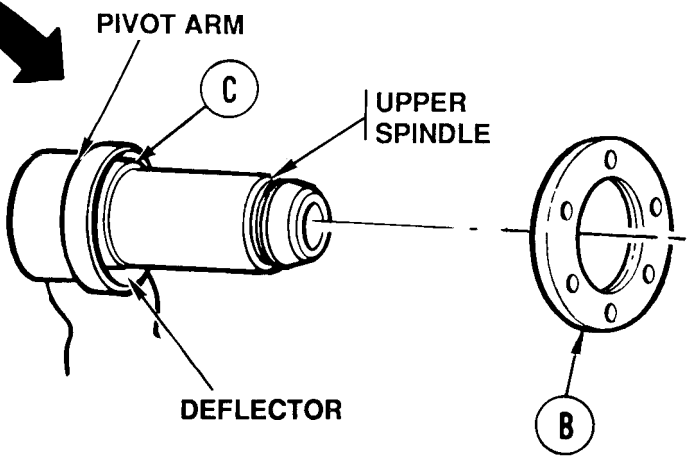


3. Using seal inserter (Item 21, Chapter 3, Section I) and handle, tap seal (A) into place in seal retainer (B).

4. Coat upper spindle or arm, seal inserter, and seal retainer (B) with grease.

5. Position seal inserter (Item 24, Chapter 3, Section I) on upper spindle, flush with spacer (C).

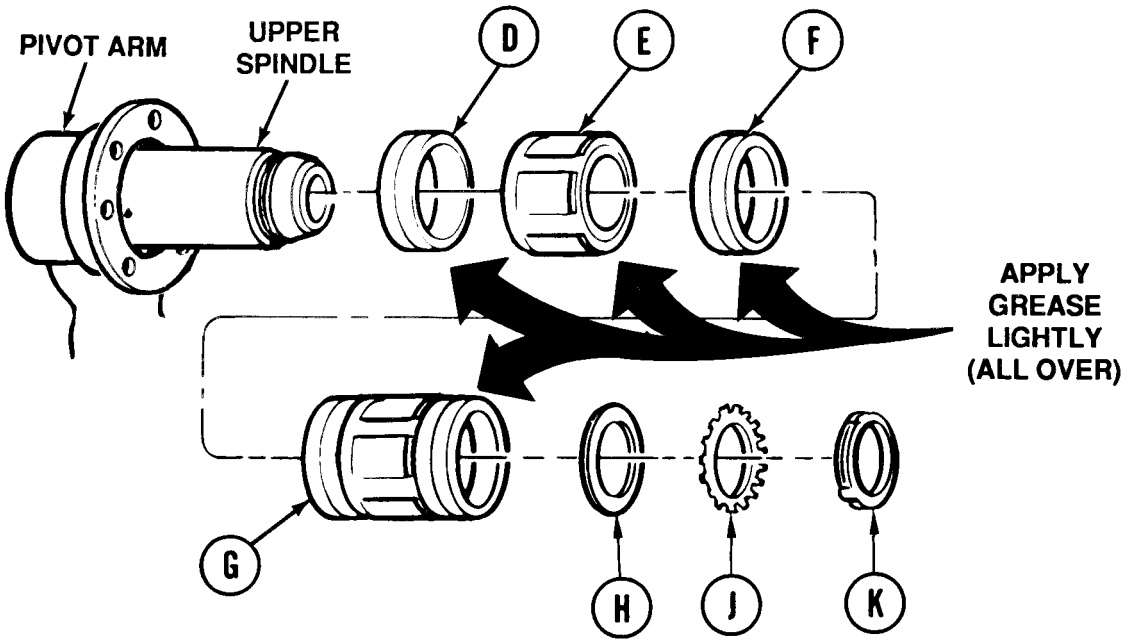
6. Slide seal retainer (B) over upper spindle and seal inserter until it is seated on spacer (C).



Go on to Sheet 5

COMPENSATING IDLER ARM ASSEMBLY REPAIR (Sheet 5 of 5)

7. Remove bearing inserter from upper spindle.



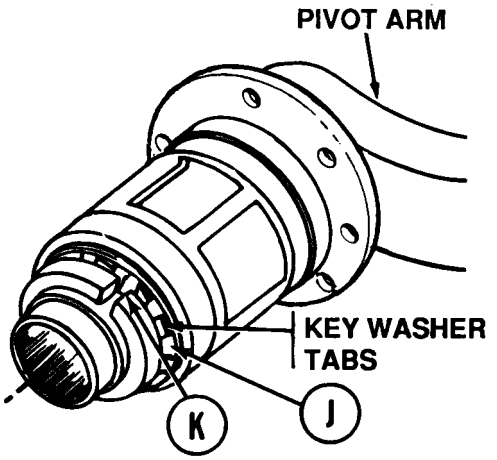
8. Apply light coat of grease to outer bearing (D), bearing spacer (E), and inner bearing (F) or to spacer assembly (G). Install on arm upper spindle.

9. Install bearing washer (H), key washer (J) with tabs toward nut (K), and screw nut (K) onto end of upper spindle.

10. Using spanner wrench and hinged handle, tighten nut (K) until bearing assembly cannot be turned.

11. Back nut (K) off just enough so bearing assembly can be turned by hand through one complete turn on spindle.

12. Using hammer and punch, bend a tab of key washer (J) so it fits in one of four slots in nut (K).



13. Service hub and arm assembly (LO 5-5420-202-12).

14. Install compensating idler arm assembly (page 1418).

End of Task

TRACK DRIVE SPROCKET REPAIR AND REPLACEMENT (Sheet 1 of 9)

PROCEDURE INDEX

TOOLS: 1-1/2 in. socket with 3/4 in drive
Impact wrench with 3/4 in. drive
16 in. extension with 3/4 in. drive
15/16 in. socket with 3/4 in. drive (2 required)
Ratchet with 3/4 in. drive
Sledge hammer
Pinchbar
Torque wrench with 3/4 in. drive (0-600 lb-ft) ((0-814 N·m)
3/8 in. drift

SPECIAL TOOLS: Wire rope assembly (Item 25, Chapter 3, Section I)
Final drive dowel remover (Item 15, Chapter 3, Section I)

SUPPLIES: Chalk (Item 11, Appendix D)
Lubricant (Item 41, Appendix D)
Wood block
5/8-18 UNF bolt (3 in. long) (3 required)
Nut and bushing assemblies (ten required)

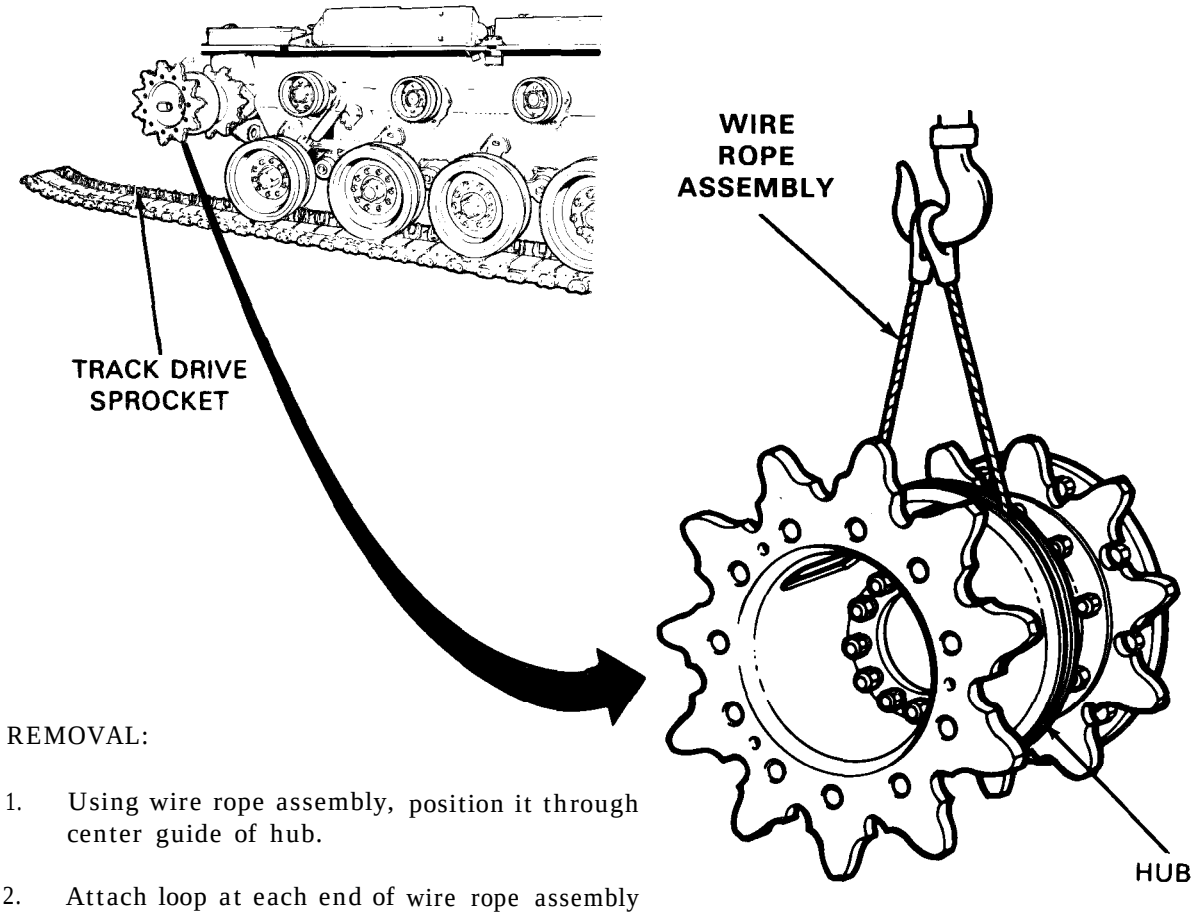
PERSONNEL: Three

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Remove track from drive sprocket (page 14-79)

Go on to Sheet 2

TRACK DRIVE SPROCKET REPAIR AND REPLACEMENT (Sheet 2 of 9)

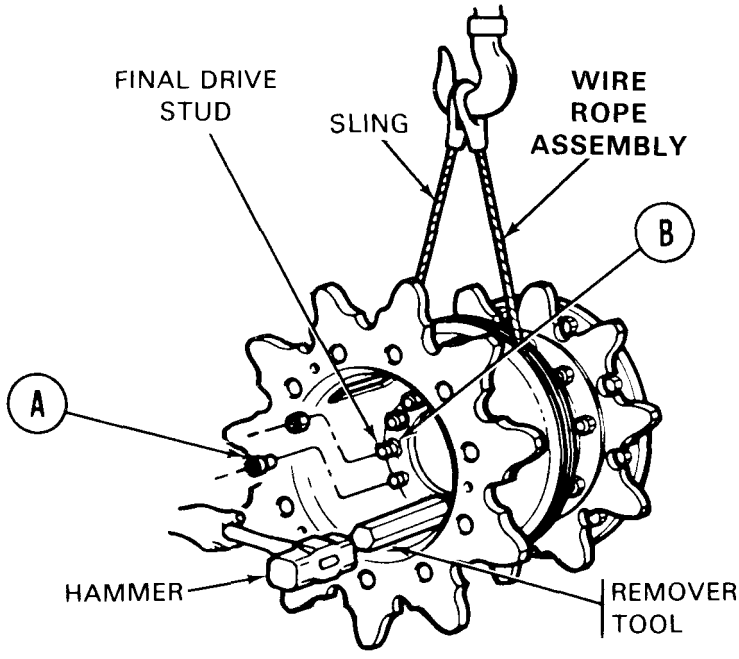


REMOVAL:

1. Using wire rope assembly, position it through center guide of hub.
2. Attach loop at each end of wire rope assembly to hoist capable of lifting 600 pounds.
3. Use three persons, two on ground and one operating hoist.
4. Direct person operating hoist to take up slack of wire rope assembly.
5. Check wire rope assembly for tightness around sprocket. Make sure wire rope assembly is tight and secure.

Go on to Sheet 3

TRACK DRIVE SPROCKET REPAIR AND REPLACEMENT (Sheet 3 of 9)



NOTE

These vehicles may use either one piece nut and bushing assemblies or two piece nuts and bushings to secure sprocket and hub assembly to final drive. If one piece do steps 6, 7, and 11. If two piece do all steps.

6. Using 1-1/2 inch socket with extension and handle, remove 10 nuts (A) securing sprocket and hub assembly to final drive hub.

7. Throw nuts (A) away.

8. Thread remover tool tightly onto stud. Using sledge hammer, strike remover tool to loosen tapered bushing (B) from final drive studs.

9. Remove tool. Remove bushing.

10. Do steps 8 and 9 to remove other nine hub tapered bushings (B). Replace bushings if needed.

NOTE

If sprocket has been on hub for long period of time, it may be necessary to strike it repeatedly with 20 pound sledge hammer until it becomes unsealed from hub.

11. Using second person to assist, pull sprocket and hub assembly free of mounting place on vehicle.

12. Using hoist and wire rope assembly, move sprocket and hub assembly away from vehicle.

Go on to Sheet 4

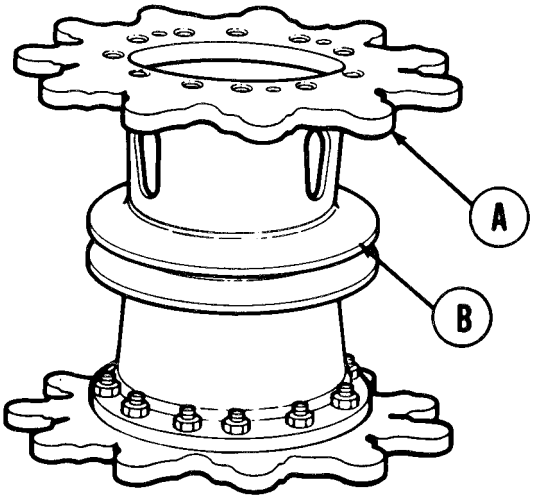
TRACK DRIVE SPROCKET REPAIR AND REPLACEMENT (Sheet 4 of 9)

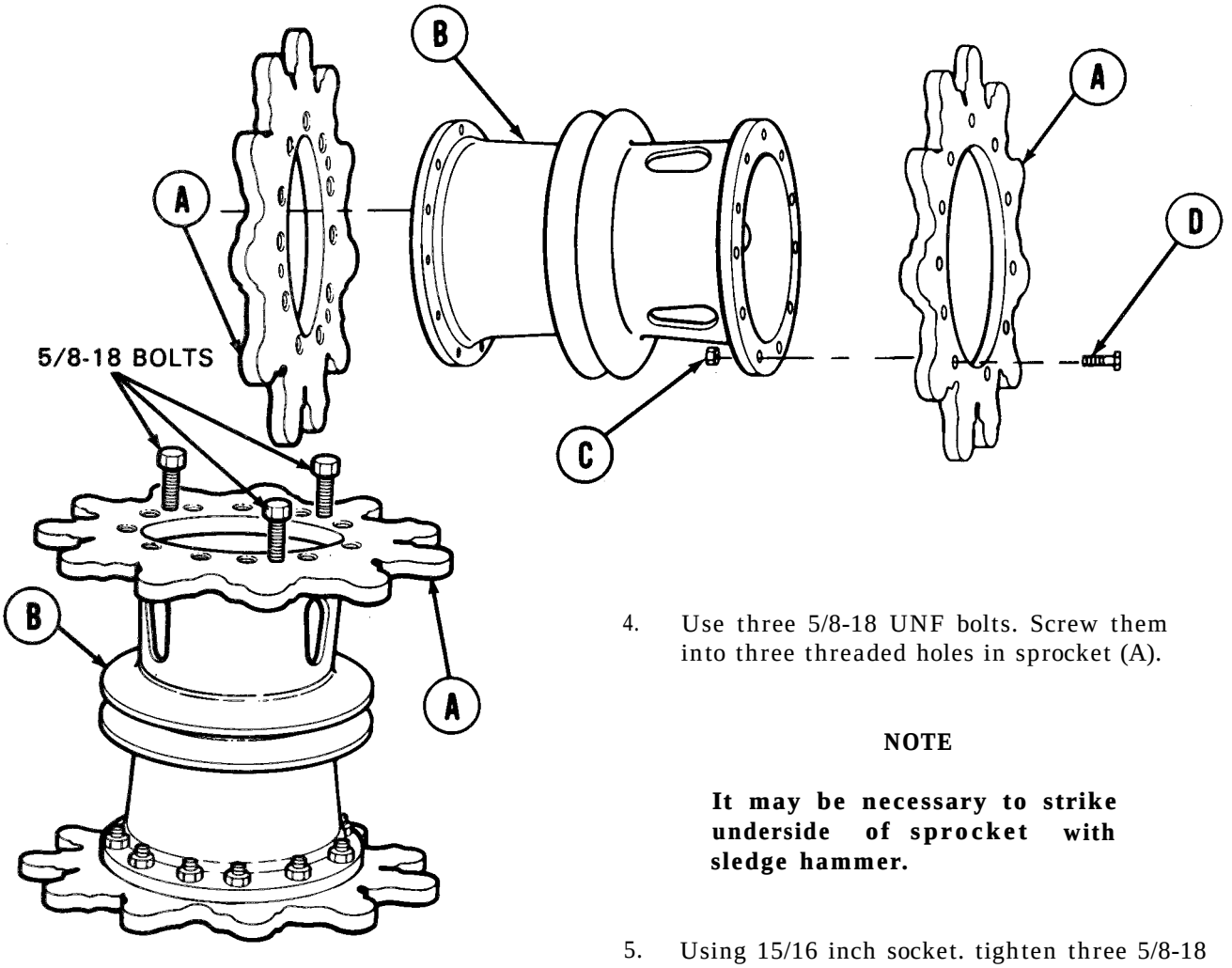
DISASSEMBLY:

1. With help of other two persons, sit sprocket and hub assembly on end so sprocket (A) faces up.

2. Using 15/16 inch socket, remove 11 nuts (C).

3. Using 15/16 inch socket, remove 11 bolts (D).





4. Use three 5/8-18 UNF bolts. Screw them into three threaded holes in sprocket (A).

NOTE

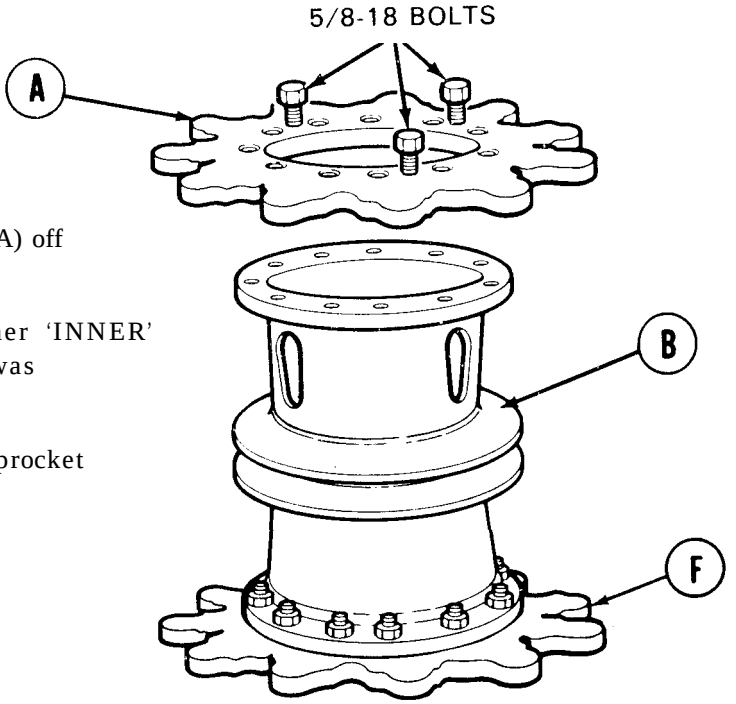
It may be necessary to strike underside of sprocket with sledge hammer.

5. Using 15/16 inch socket. tighten three 5/8-18 UNF bolts evenly until sprocket is free of hub (B).

Go on to Sheet 5

TA249600

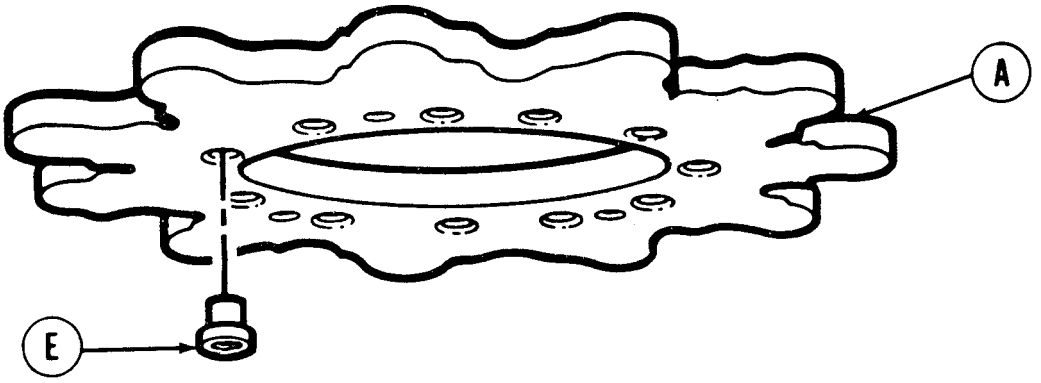
TRACK DRIVE SPROCKET REPAIR AND REPLACEMENT (Sheet 5 of 9)



6. Using two other persons, lift sprocket (A) off hub {B).

7. Using chalk, mark sprocket (A) either 'INNER' or 'OUTER' depending on where it was mounted to hub (B).

8. Remove three 5/8-18 UNF bolts from sprocket (A).



9. Using hammer and punch to drive, drive 11 tapered bushings (E) out of' sprocket (A). Replace bushings if needed.

10. With help from one other person, use pinchbar to set hub so other sprocket (F) faces up.

11. Repeat steps 2 thru 10 to remove other sprocket (F).

Go on to Sheet 6

TA249601

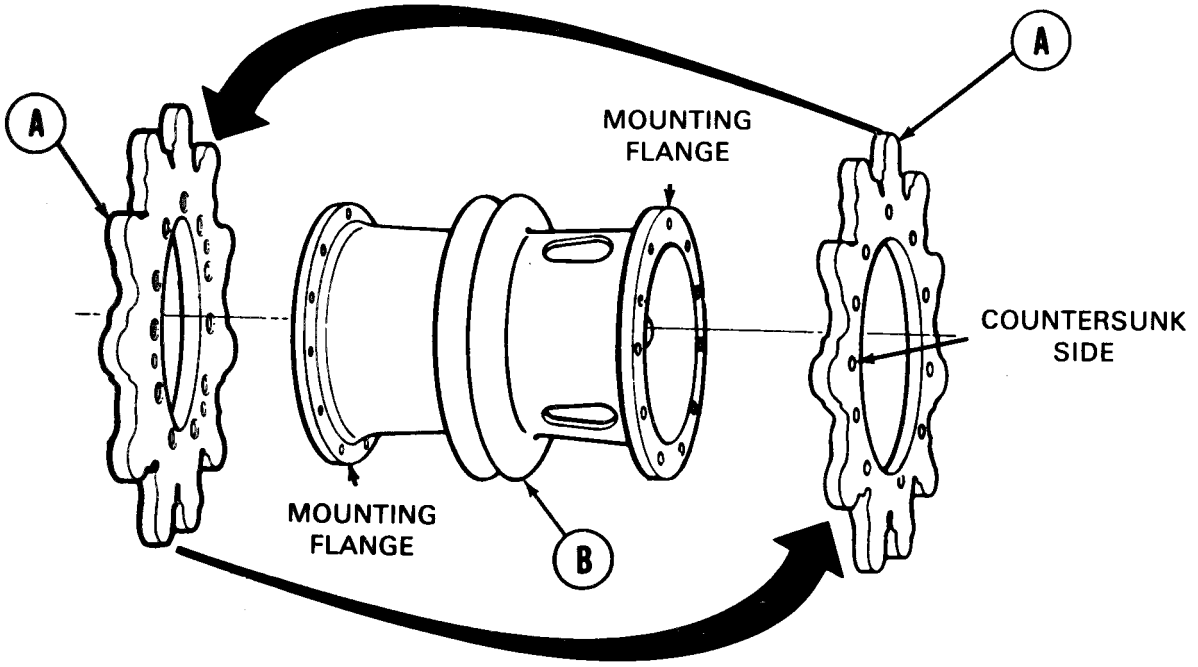
TRACK DRIVE SPROCKET REPAIR AND REPLACEMENT (Sheet 6 of 9)

INSPECTION:

1. Inspect sprockets for wear by checking wear marks or by using wear gage.
2. Inspect all parts for damage. Replace any damaged or worn parts.

ASSEMBLY:

1. If two sprockets (A) are not replaced, reverse them when reassembling.



NOTE

Sprocket marked 'OUTER' becomes inner one. Sprocket marked 'INNER' becomes outer one.

2. Mounting flange of hub (B) should be facing up.
3. Mount sprocket (A) into position to hub (B) with countersunk side of hole facing up.

Go on to Sheet 7

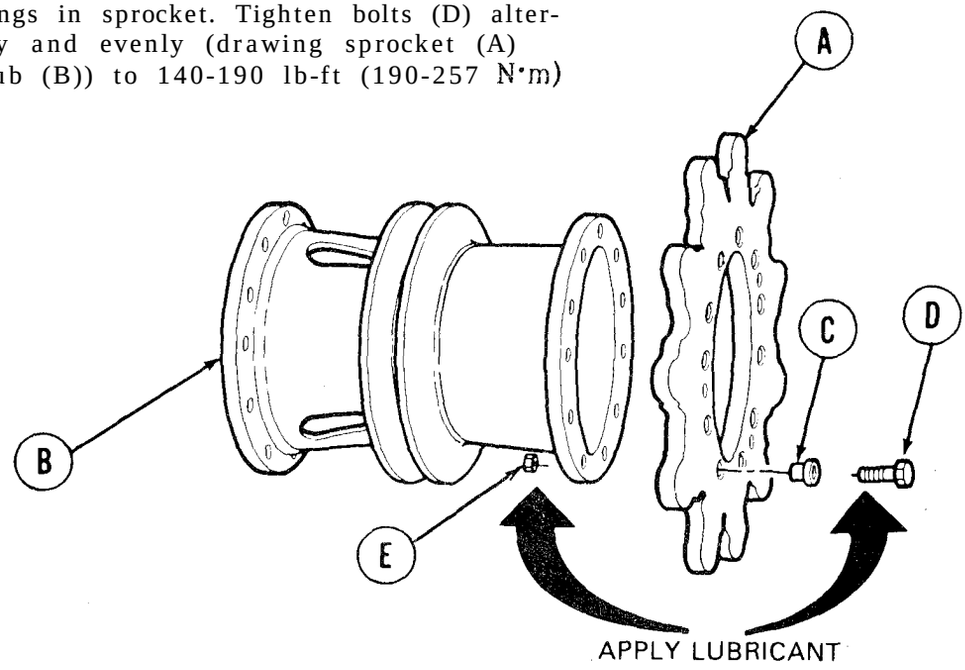
TA249602

TRACK DRIVE SPROCKET REPAIR AND REPLACEMENT (Sheet 7 of 9)

4. Using hammer and block, tap all 11 tapered bushings (C) into place in sprocket.

5. Apply light coat of lubricant to 11 new bolts (D) and nut (E) threads before installing them.

6. Lightly lubricate 11 sprocket mounting bolts (D) and thread into hub through bushings in sprocket. Tighten bolts (D) alternately and evenly (drawing sprocket (A) to hub (B)) to 140-190 lb-ft (190-257 N·m)



8. Install nuts (E) onto bolts (D).

9. Using 15/16 inch socket and torque wrench, tighten nuts (E) evenly and alternately to 90-140 lb-ft (122-190 N·m).

Go on to Sheet 8

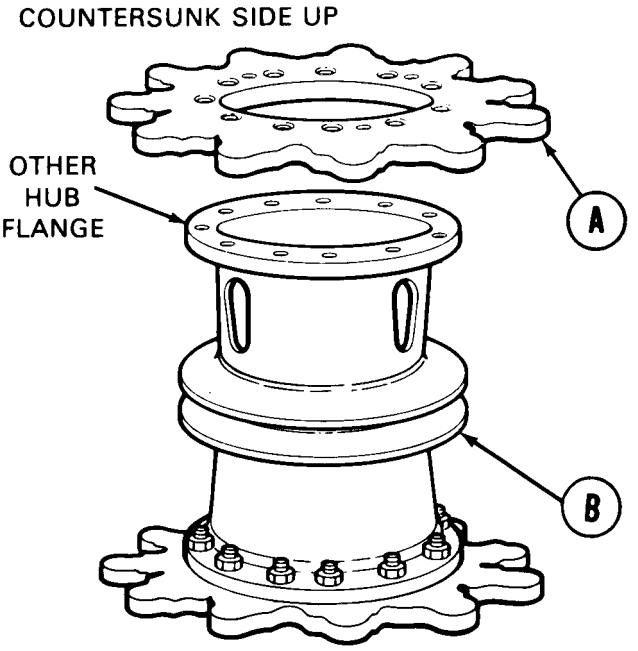
TA249603

TRACK DRIVE SPROCKET REPAIR AND REPLACEMENT (Sheet 8 of 9)

10. Using pinchbar and two other persons for assistance, stand hub on end so other flange faces up.

11. Three persons lift other sprocket (A) onto hub (B) flange.

12. Repeat steps 4 through 9 to install other sprocket (A) to hub (B).

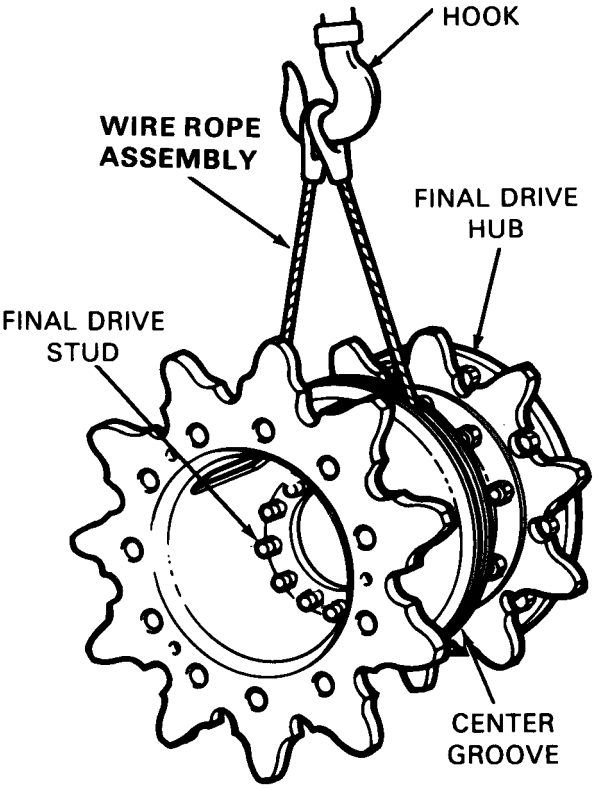


INSTALLATION:

1. Position wire. rope assembly through center groove of hub.

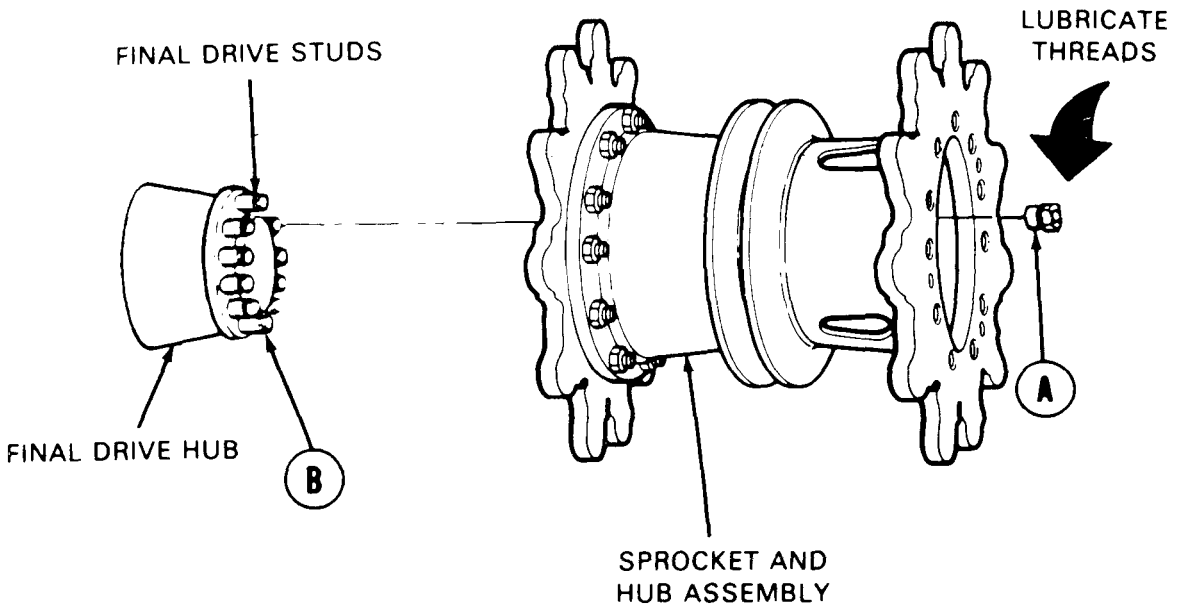
2. Place loops at both ends of wire rope assembly over hook of hoist.

3. Using second person to guide sprocket and hub assembly, carefully lift it into mounting position.



Go on to Sheet 9

TRACK DRIVE SPROCKET REPAIR AND REPLACEMENT (Sheet 9 of 9)



4. Mount sprocket and hub assembly onto final drive studs.
5. Apply lubricant to nut (B) and bushing assemblies (A).
6. Screw 10 new nuts and bushing assemblies onto studs (B).
7. Using 1-1/2 inch socket with extension and impact wrench, tighten nuts (A) alternately (in crisscross pattern).
8. Using torque wrench and extension, wet torque nuts in a two step procedure:
   a. Step 1. 100-150 lb-ft(136-203 N·m).
   b. Step 2. 450-460 lb-ft(610-624 N·m).
9. Install track on rear sprocket.

End of Task

TRACK ASSEMBLY REPLACEMENT (Sheet 1 of 10)

PROCEDURE INDEX

TOOLS: Sledge hammer
15/16 in. socket with 3/4 in. drive
Hinged handle ('breaker' bar) with 3/4 in. drive
Ratchet with 3/4 in. drive
2 lb hammer
Crowbar, pinch point
1-5/16 in. socket with 3/4 in. drive
1-1/2 in. socket with 3/4 in. drive
Torque wrench with 3/4 in. drive (0-600 lb-ft) (0-814 N·
10 in. extension with 3/4 in. drive

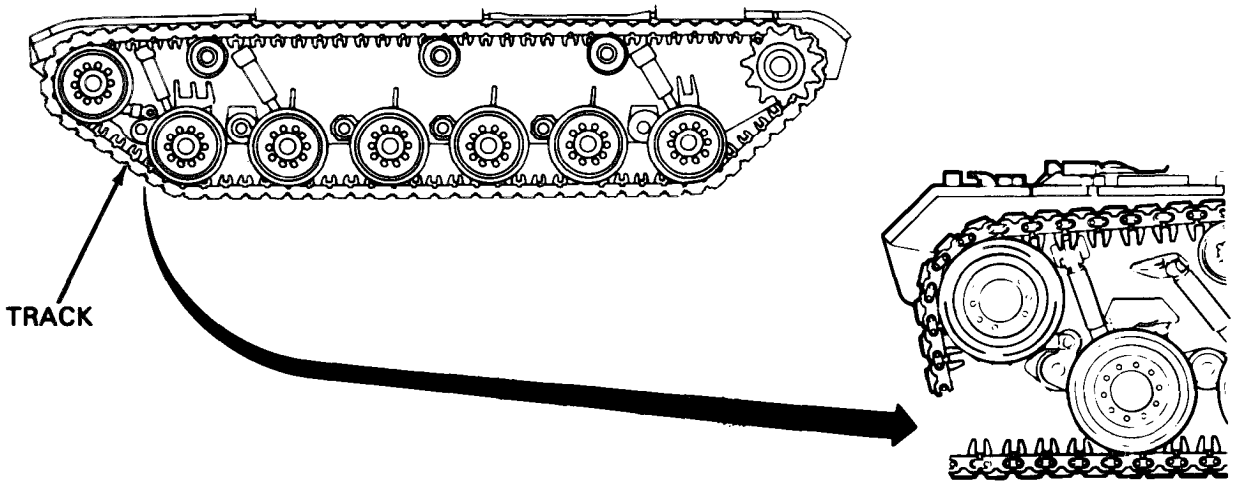
SPECIAL TOOLS: Track end connector puller and pump (Item 37, Chapter 3, Section I)
Track torquing tool kit (Item 11, Chapter 3, Section I)
Track connecting fixture (Item 19, Chapter 3, Section I)

SUPPLIES Rope (Item 66, Appendix D) (50 ft.)

PERSONNEL: Three

REFERENCES: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Loosen track tension (TM 5-5420-202-10)
Remove rear fender and shield (if required) (page 16-69)

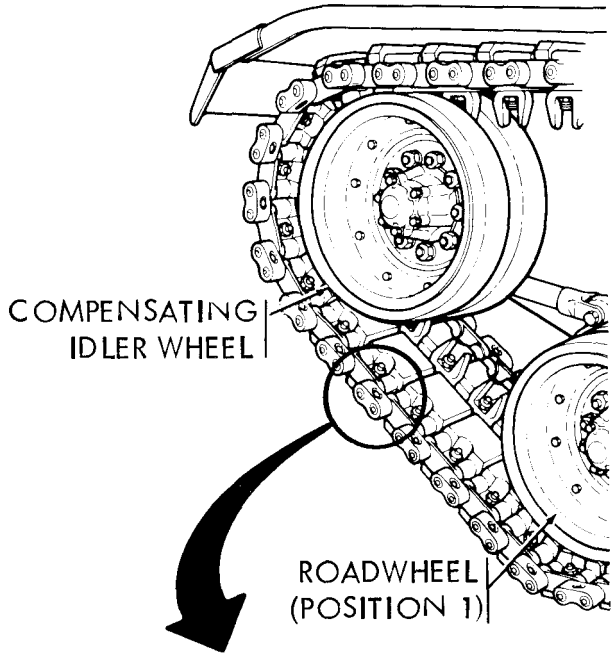


Go on to Sheet 2

TRACK ASSEMBLY REPLACEMENT (Sheet 2 of 10)

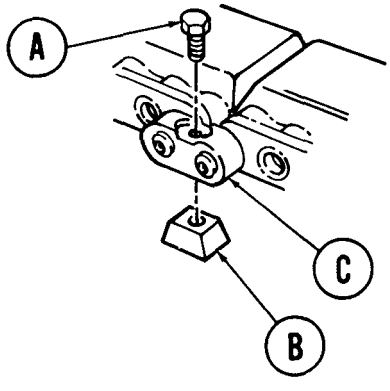
NOTE

Disconnect track up front between compensating idler wheel and roadwheel at position No. 1 (on either side).

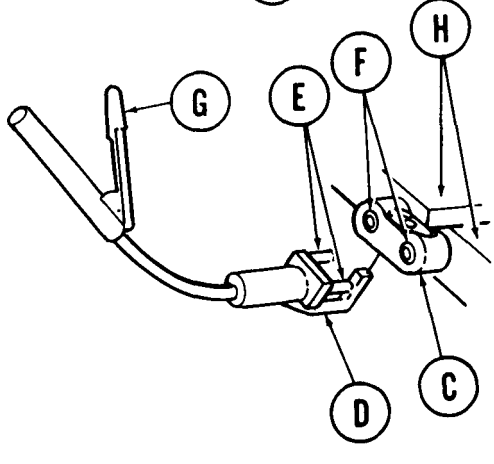


REMOVAL:

1. Using 15/16 inch socket with ratchet, loosen bolt (A) securing wedge (B) to end connector (C).
2. Using hammer, tap wedge (B) to loosen it.
3. Remove bolt and wedge. Throw both parts away.
4. Repeat steps 1 thru 3 to remove bolt and wedge at opposite side of track.



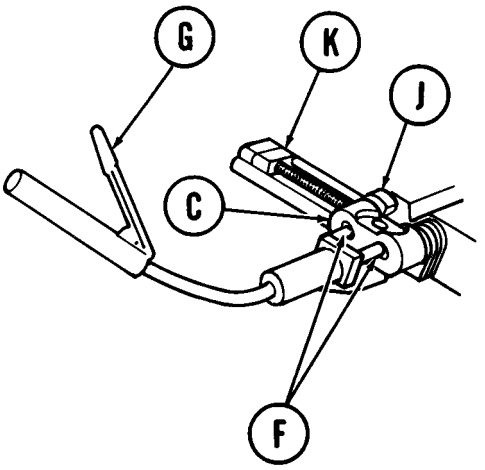
5. Put hook (D) of track end connector puller and pump behind end connector (C).
6. Aline studs (E) of puller with shoe pins (F).
7. Pump handle (G) until gap between end connector (C) and track shoes (H) is about 1 inch.



Go on to Sheet 3

TRACK ASSEMBLY REPLACEMENT (Sheet 3 of 10)

8. Hook and tighten jaws (J) of track connecting fixture (K) around track shoe pins (F).



9. Pump handle (G) until end connector (C) comes off.

10. Repeat steps 5 thru 9 at opposite side of track.

11. Deleted

12. Deleted

Go on to Sheet 4

TRACK ASSEMBLY REPLACEMENT (Sheet 4 of 10)

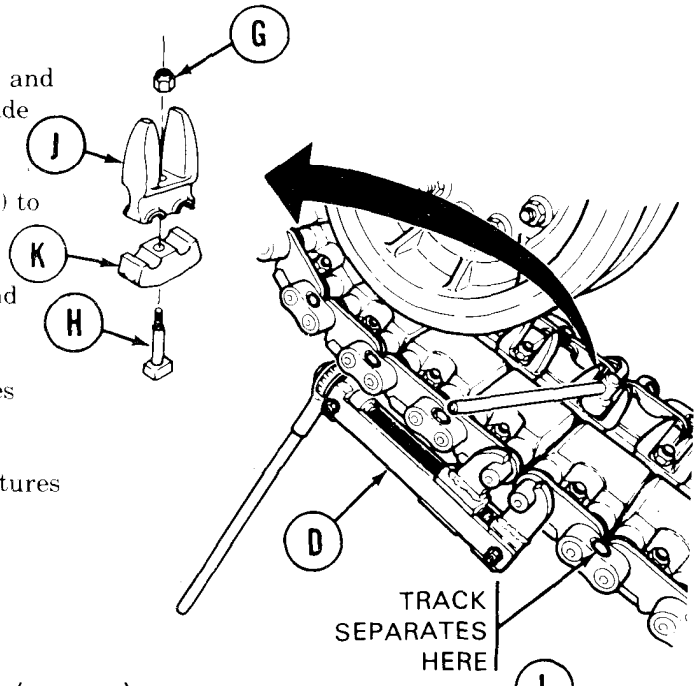
13. Using 1-5/16 inch socket with hinge handle and extension, loosen nut (G) securing centerguide bolt (H).

14. Using sledge hammer, strike centerguide (J) to loosen it.

15. Remove nut (G), centerguide (J), cap (K), and bolt (H).

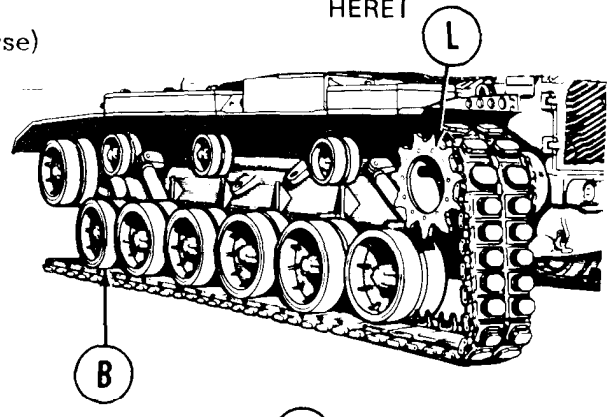
16. Using tool handle, loosen both track fixtures (D).

17. Using crowbar to support track, remove fixtures (D). Let track fall free to separate.



18. **Start engine and put transmission in R (reverse) (TM 5-5420-202-10).**

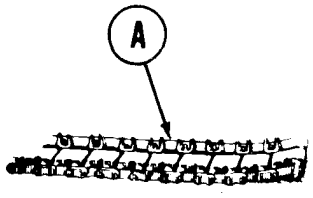
19. Move steering control handle away from track being removed. Use brake to control slow speed until track is off sprocket (L).



INSTALLATION:

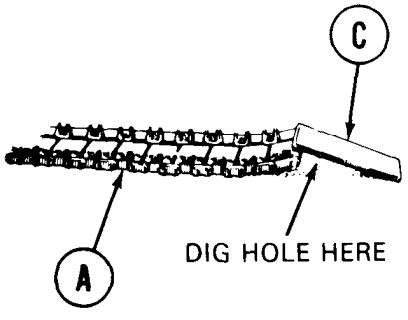
1. If track is to be replaced and roadwheels are still on track, position new track (A) to mate with old track (B) as shown.

2. If roadwheels are on ground (old track (B) removed), use plank (C) as shown.



NOTE

If plank (C) or similar object is not available, dig a hole under first few links of new track.



3. Make sure new track (A) is in line with roadwheels (B).

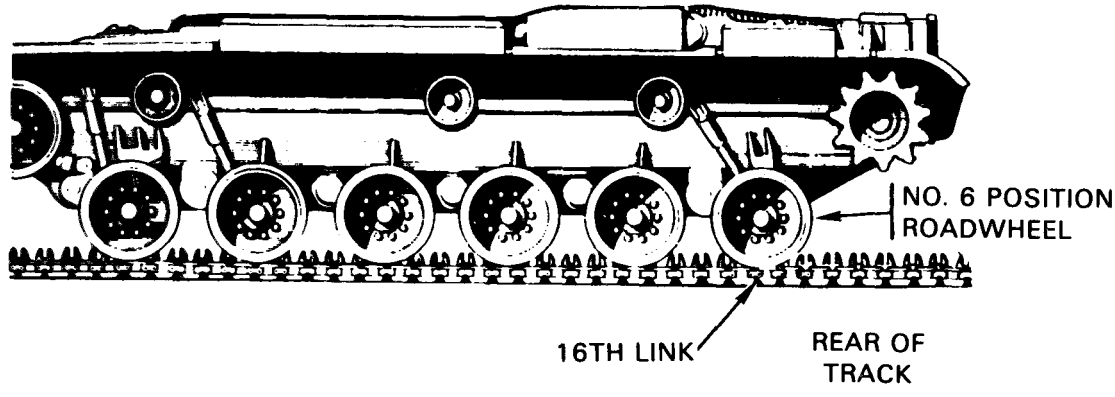
4. **Start engine (TM 5-5420-202-10).**

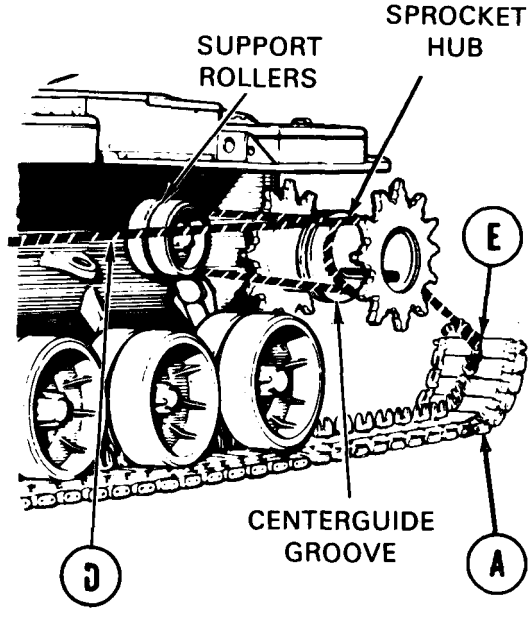
Go on to Sheet 5

TA249609

TRACK ASSEMBLY REPLACEMENT (Sheet 5 of 10)

5. Drive vehicle onto new track (A). Keep moving vehicle until number 6 position roadwheel is on 16th link from rear of track.





6. Stop vehicle and shut off engine (TM 5-5420-202-10).

7. Apply parking brake (TM 5-5420-202-10).

8. Tie rope (D) to center of link pin (E) at rear of new track (A).

9. Place rope (D) over centerguide groove of sprocket hub.

10. String rope (D) through center groove between two rear support rollers.

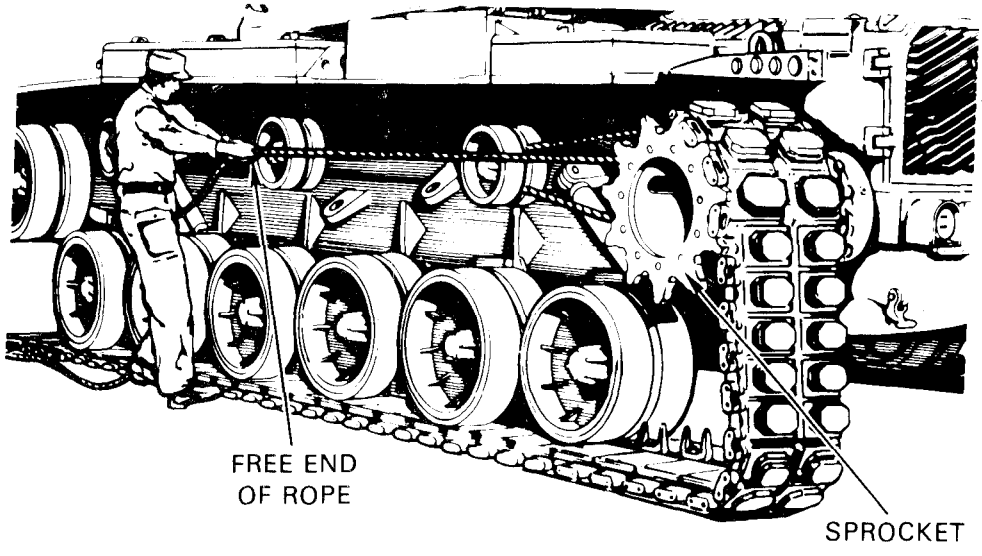
11. Bring rope (D) back from support roller wheels *to* sprocket hub once again and wrap rope under and around sprocket hub (two turns).

Go on to Sheet 6

TA249610

TRACK ASSEMBLY REPLACEMENT (Sheet 6 of 10)

12. Have person pull on free end of rope



13. Have another person start engine (TM 5-5420-202-10).

14. Run engine at idle speed. Release parking brake (TM 5-5420-202-10).

15. Place transmission shift lever in N (neutral) (TM 5-5420-202-10).

16. Position steering control to LEFT PIVOT STEER if track is being installed to right side.

17. Position steering control to RIGHT PIVOT STEER if track is being installed to left side.

18. While person pulls on free end of rope, driver in vehicle slowly speeds up engine to rotate sprocket.

19. When sprocket teeth have picked up three track links, have driver apply parking brakes.

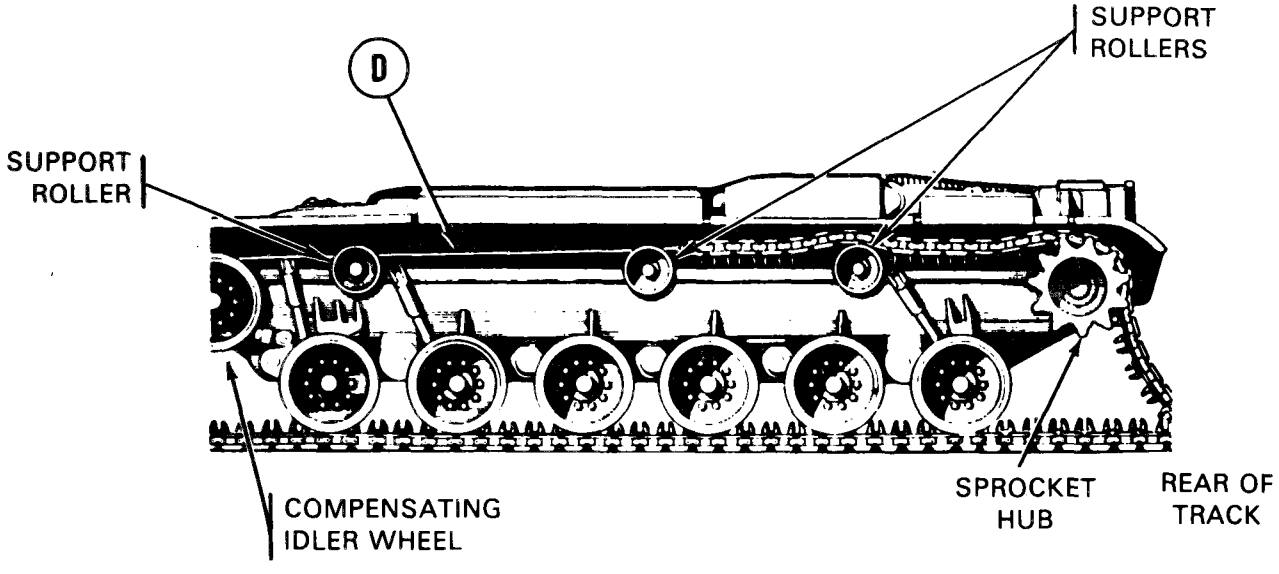
20. Place transmission shift lever in P (park) (TM 5-5420-202-10).

Go on to Sheet 7

TA249611

TRACK ASSEMBLY REPLACEMENT (Sheet 7 of 10)

21. Remove rope (D) from around sprocket hub and rear support roller.



22. With rope still attached to rear of track, pull rope forward over all three support rollers and compensating idler wheels.

NOTE

Make sure rope goes between groove in support roller and compensating idler wheels.

23. Have driver start and idle engine (TM 5-5420-202-10).

24. Release parking brake (TM 5-5420-202-10).

25. Shift transmission lever to L (low) (TM 5-5420-202-10).

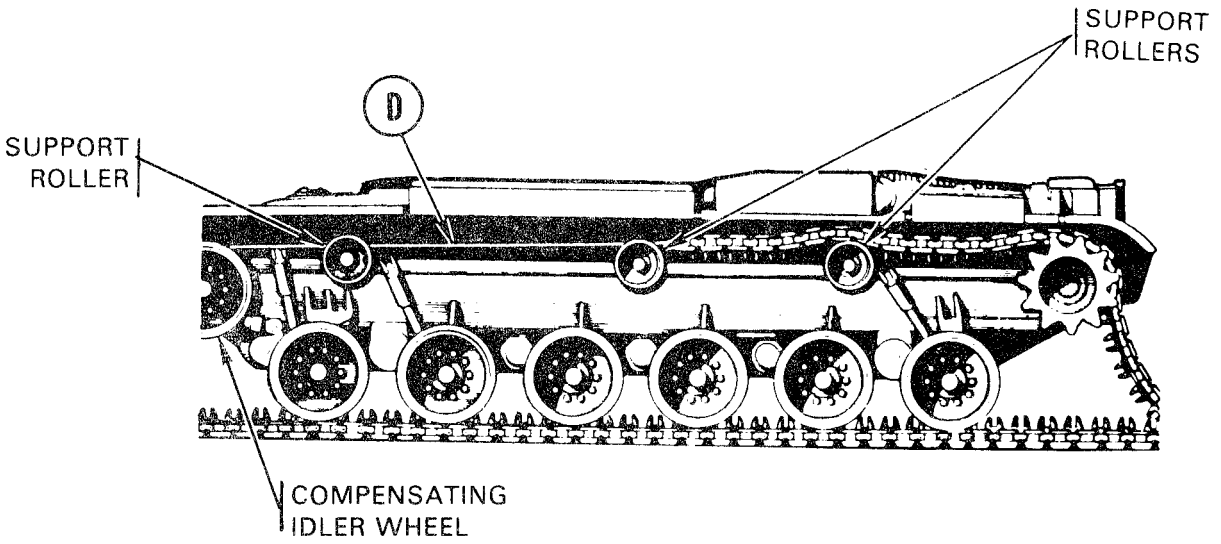
26. Have person pulling on rope walk in front of and to one side of vehicle as it moves forward slowly.

Go on to Sheet 8

TA249612

TRACK ASSEMBLY REPLACEMENT (Sheet 8 of 10)

27. Speed engine just enough so person pulling on rope can steer track up over all support rollers and compensating idler wheel.



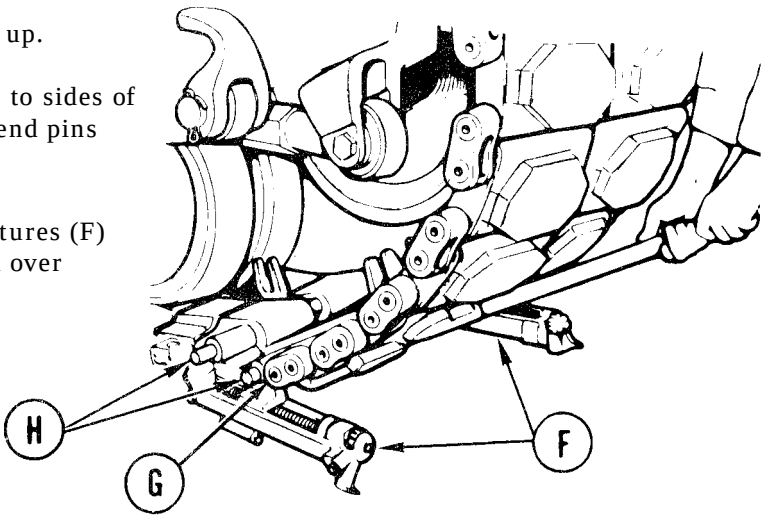
28. When track is over compensating idler wheel, is tight around sprocket, and is ready to be connected, shut down engine. Apply parking brake (TM 5-5420-202-10).

29. Shorten track adjusting link as much as possible (TM 5-5420-202-10).

30. Using crowbar lift lower end of track up.

31. Connect track connecting fixtures (F) to sides of track. Make sure fixtures are around end pins (H) and remove rope (D).

32. Using tool handle, tighten up both fixtures (F) until end connector (G) can be started over track end pins (H).



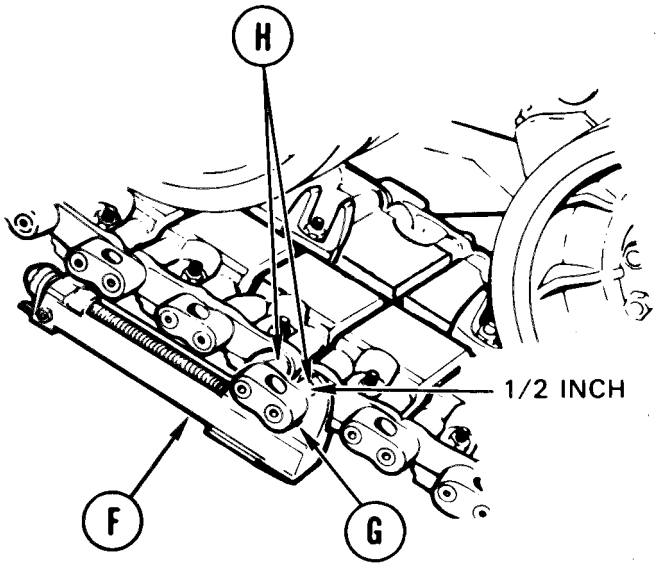
Go on to Sheet 9

TA249613

TRACK ASSEMBLY REPLACEMENT (Sheet 9 of 10)

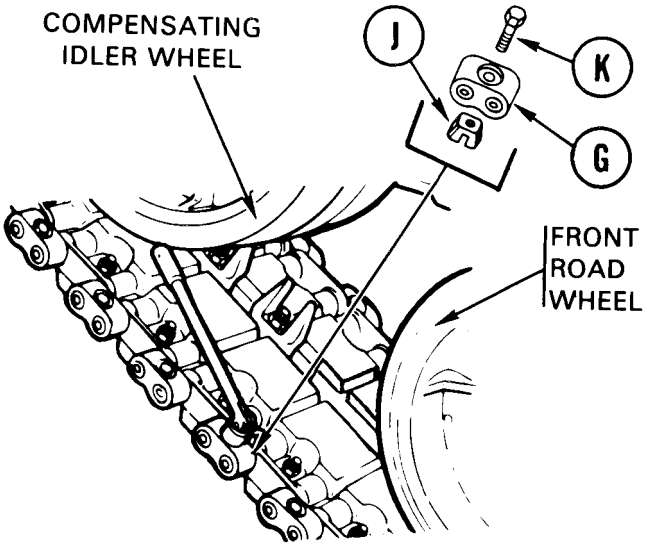
33. Using hammer, drive two end connectors (G) onto two pins (H) held together by fixture (F) clamps.

34. Leave 1/2 inch space between end connectors (G) and fixtures (F).



35. Remove track connecting fixtures (F).

36. Using hammer, drive both end connectors (G) all the way onto link pins (H).



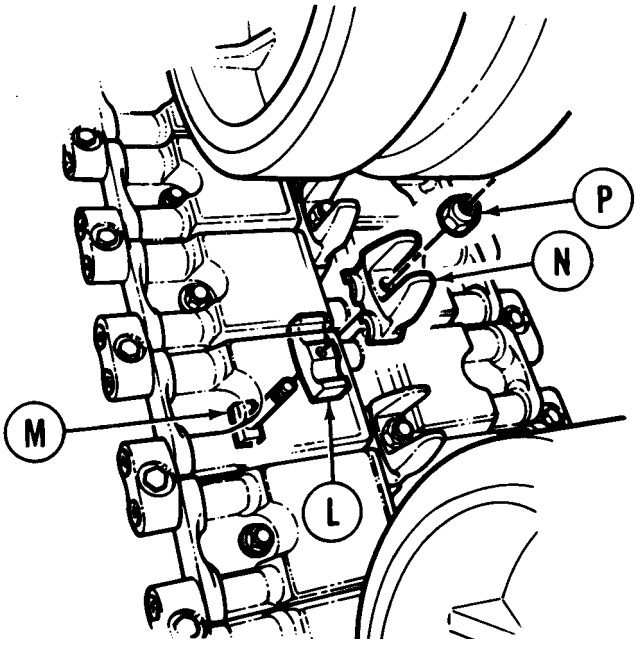
37. Place wedge (J) to underside of end connector (G).

38. Using 15/16 inch socket, install bolt (K) through wedge (J). Tighten bolt snug.

39. Install cap (L), bolt (M), centerguide (N), and nut (P).

40. Using 1-5/16 inch socket and extension, tighten nut (P) to secure centerguide (N) in place.

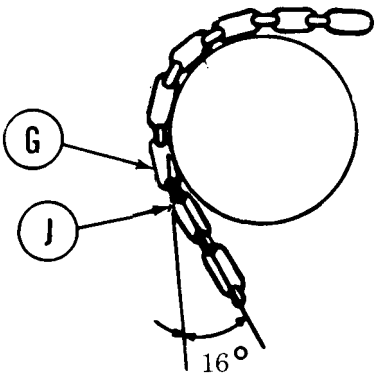
41. Using 1-5/16 inch socket and torque wrench or torquing tool kit. torque nut (P) to 15-20 lb-ft (20-27 N·m).



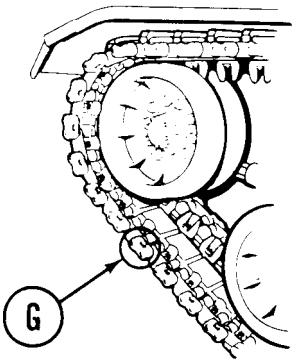
Go on to Sheet 9.1

TRACK ASSEMBLY REPLACEMENT (Sheet 9.1 of 10)

NOTE
If track torquing tool kit is available, go to step 49. If not available, go to step 42.

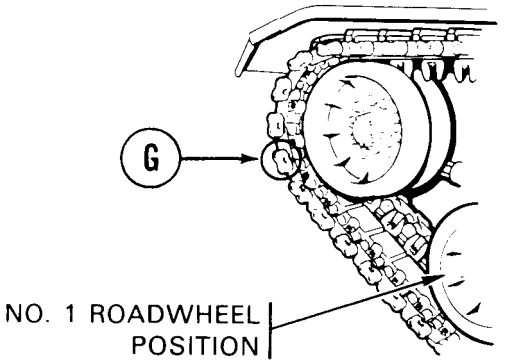


42. Have other person start engine (TM 5-5420-202-10. Slowly move vehicle until track link in front of' end connector (G), just installed, is fully engaged over the compensating idler wheel and the track link, after end connector (G) is just touching the compensating idler wheel.



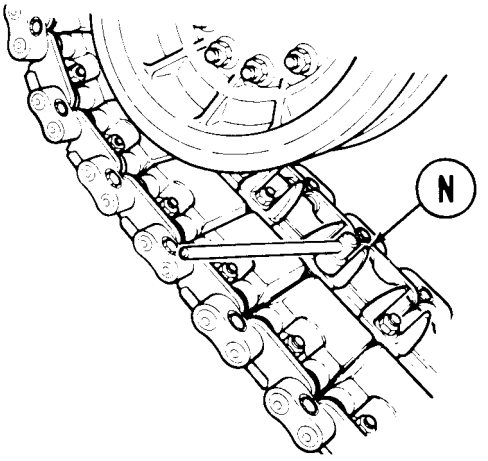
43. Using torque wrench with 15/16 inch socket, tighten end connector wedge (J) bolts to 180-200 lb-ft (244-271 N·m).

44. Move tank until end connector (G) is in lower position.



45 Move tank until end connector (G) is located in same position as step 42. Using torque wrench, tighten to 180-200 lb-ft (244-271 N·m).

46. Repeat steps 42 thru 44 until torque stays at 180-200 lb-ft (244-271 N·m).



47. Move tank until centerguide (N) is between compensating idler wheel and No. 1 roadwheel position.

48. Using torque wrench, tighten centerguide nut (F') to 350-380 lb-ft (474-515 N·m).

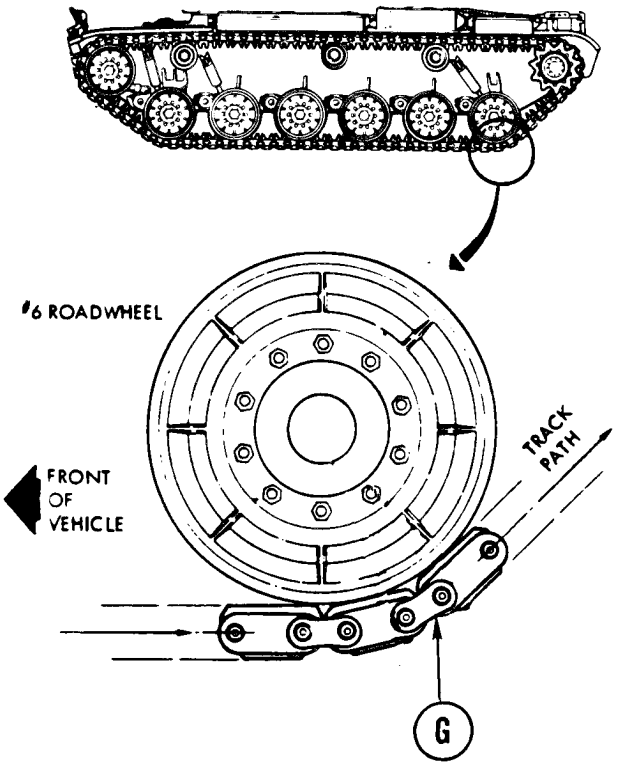
Go on to Sheet 9.2

TRACK ASSEMBLY REPLACEMENT (Sheet 9.2 of 10)

NOTE

For ease of access end connector to be tightened must be positioned at number 6 roadwheel.

49. Start engine (TM 5-5420-202-10). Slowly move vehicle until end connector (G) nut to be tightened is positioned at number 6 roadwheel.



WARNING

Tightening inboard end connector requires personnel to be under the vehicle. Perform steps 50 through 53 to prevent injury to personnel (refer to TM 5-5420-202-10).

50. Set transmission shift lever to park.

51. Set and lock brakes.

52. Block tracks to prevent vehicle movement.

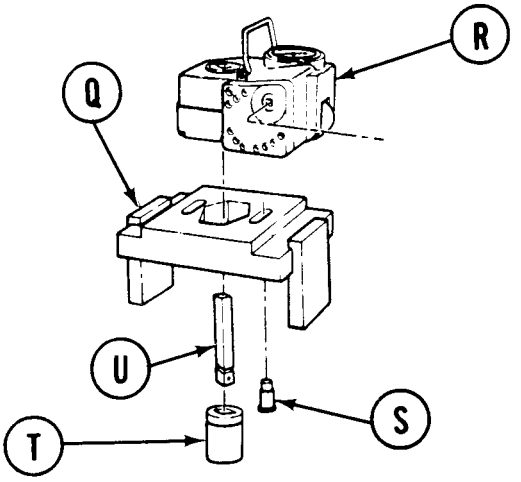
53. Shut engine off (TM 5-5420-202-10).

Go on to Sheet 9.3

TRACK ASSEMBLY REPLACEMENT (Sheet 9.3 of 10)

54. Fasten adapter (Q) to torque pack (R) using shoulder screw (S).

55. Place 15/16 inch socket (T) on drive bar (U) and install drive bar (U) into torque pack (R).



56. Position torque pack (R) with adapter (Q), drive bar (U), and socket (T) over nut on end connector (G) to be tightened. Ensure adapter (Q) legs are seated firmly against shoe assemblies on both sides.

57. Install ratchet (V) on torque pack (R) and rotate ratchet until socket (T) engages nut on end connector (G).

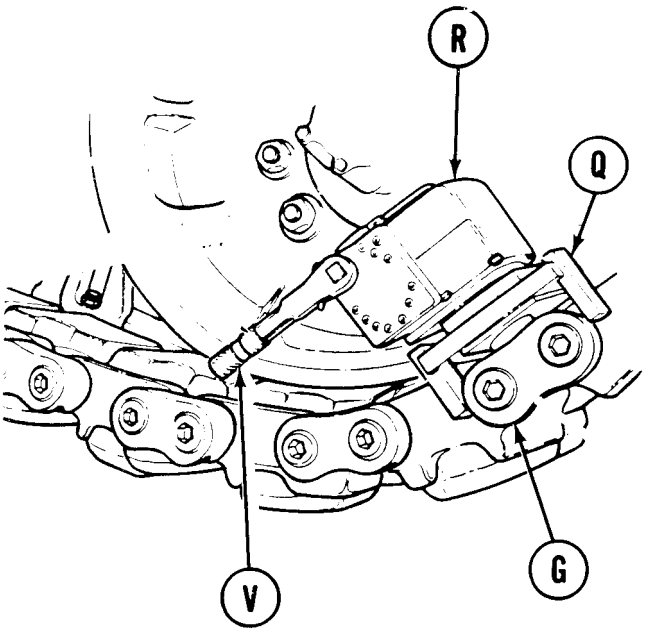
58. Rotate ratchet (V) clockwise until torque pack dial indicates 180-200 lb-ft (244-271 N·m).

59. Wait approximately 15 seconds, read dial, and repeat step 58 until dial reading stabilizes at 180-200 lb-ft (244-271 N·m).

60. Rotate ratchet (V) counterclockwise until dial reading indicates 0. Remove torque pack.

61. Repeat steps 56 thru 60 to tighten inboard end connector.

62. Remove 15/16 inch socket (T) from torque pack (R).



Go on to Sheet 10

TRACK ASSEMBLY REPLACEMENT (Sheet 10 of 10)

63. Place 1-5/16 inch socket (W) on drive bar (U).

64. Position torque pack (R) with adapter (Q), drive bar (U), and socket (W) over centerguide nut (P) to be tightened. Ensure adapter (Q) legs envelop top of centerguide ears.

65. Install ratchet (V) on torque pack (R) and rotate ratchet until socket (W) engages centerguide nut (P).

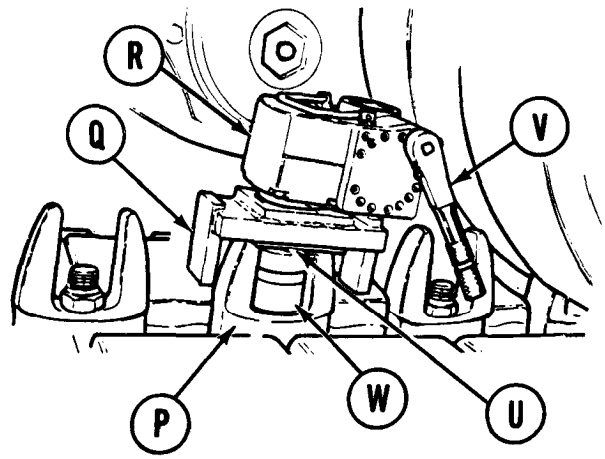
66. Rotate ratchet (V) clockwise until torque pack dial indicates 350-380 lb-ft (474-515 N•m).

67. Wait approximately 15 seconds, read dial, and repeat step 66 until dial reading stabilizes at 350-380 lb-ft (474-515 N•m).

68. Rotate ratchet (V) counterclockwise until dial reading indicates 0. Remove torque pack.

69. Apply track tension (TM 5-5420-202-10).

70. Install rear fender and shield (if required) (page 16-72).



End of Task

TRACK SHOE PAD REPLACEMENT (Sheet 1 of 2)

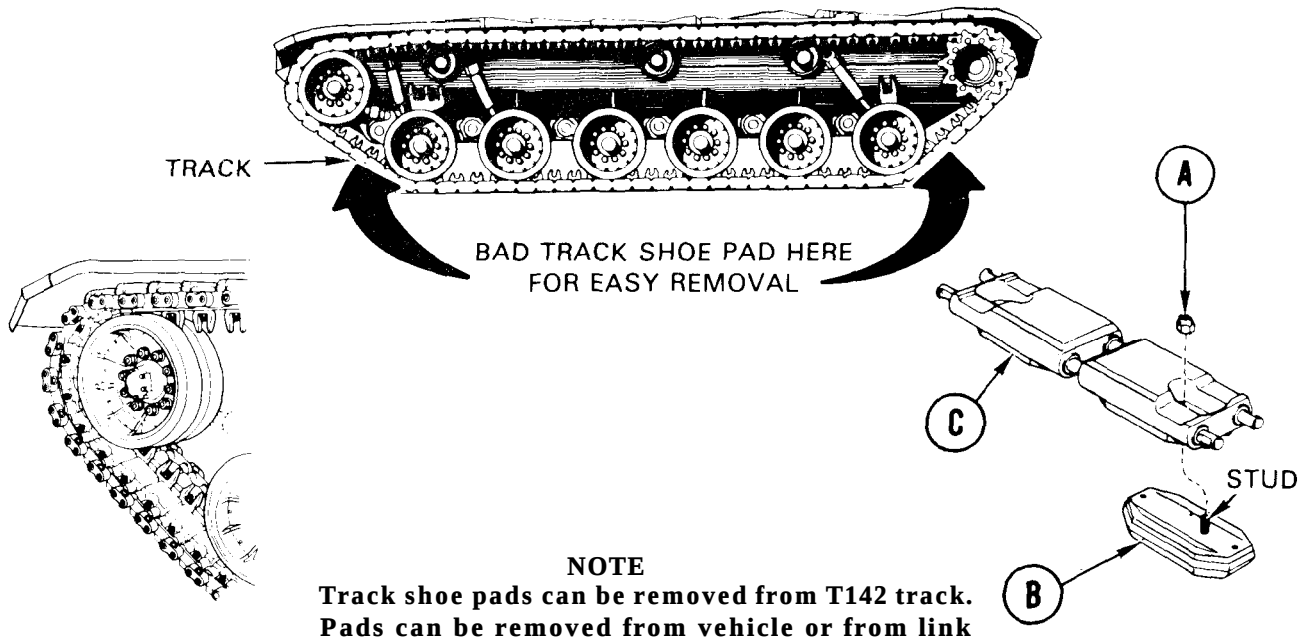
T00LS: 1-1/8 in. socket with 3/4 in. drive
Ratchet with 3/4 in. drive
Ball peen hammer
T-handle with 3/4 in. drive
Torque wrench with 3/4 in. drive (0-600 lb-ft) (0-814 N m)

SPECIAL TOOLS: Track torquing tool kit (Item 11, Chapter 3, Section I)

SUPPLIES: Track pad parts kit

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Position vehicle for easy removal and installation of track shoe pad (TM 5-5420-202-10)
Apply parking brake (TM 5-5420-202-10)



NOTE
Track shoe pads can be removed from T142 track. Pads can be removed from vehicle or from link (off vehicle).

REMOVAL:

1. Using socket with ratchet (or T-handle), loosen nut (A). Remove nut. Throw nut away.
2. Using hammer, drive shoe pad (B) out of link (C). Throw pad away.

INSTALLATION:

1. Position pad (B) in link (C). Screw nut (A) onto pad (B) stud.

NOTE
If track torquing tool kit is available, go to step 3. If not available, do step 2 only.

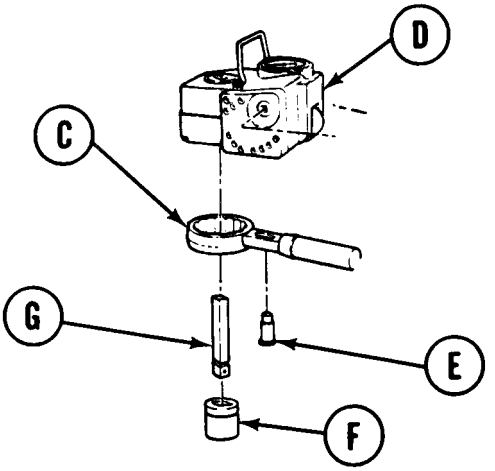
2. Using torque wrench, tighten nut to 260-280 lb-ft (352-379 N·

End of Task

TRACK SHOE PAD REPLACEMENT (Sheet 2 of 2)

3. Position reaction lever (C) on torque pack (D) and secure using shoulder screw (E).

4. Place 1-1/8 inch socket (F) on drive bar (G) and install drive bar (G) into torque pack (D).



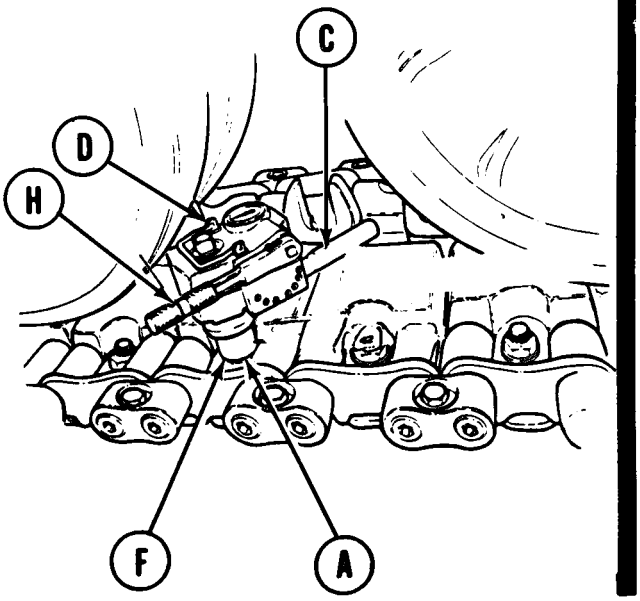
5. Position torque pack (D) with drive bar (G) and socket (F) over center pad nut (A) to be tightened.

6. Install ratchet (H) on torque pack (D) and rotate ratchet until socket (F) engages center pad nut (A).

7. Rotate ratchet (H) clockwise until torque pack dial indicates 260-280 lb-ft (352-379 N m).

8. Wait approximately 15 seconds, read dial, and repeat step 7 until dial reading stabilizes at 260-280 lb-ft (352-379 N m).

9. Rotate ratchet (V) counterclockwise until dial reading indicates 0. Remove torque pack.



End of Task

TRACK LINK REPLACEMENT (Sheet 1 of 3)

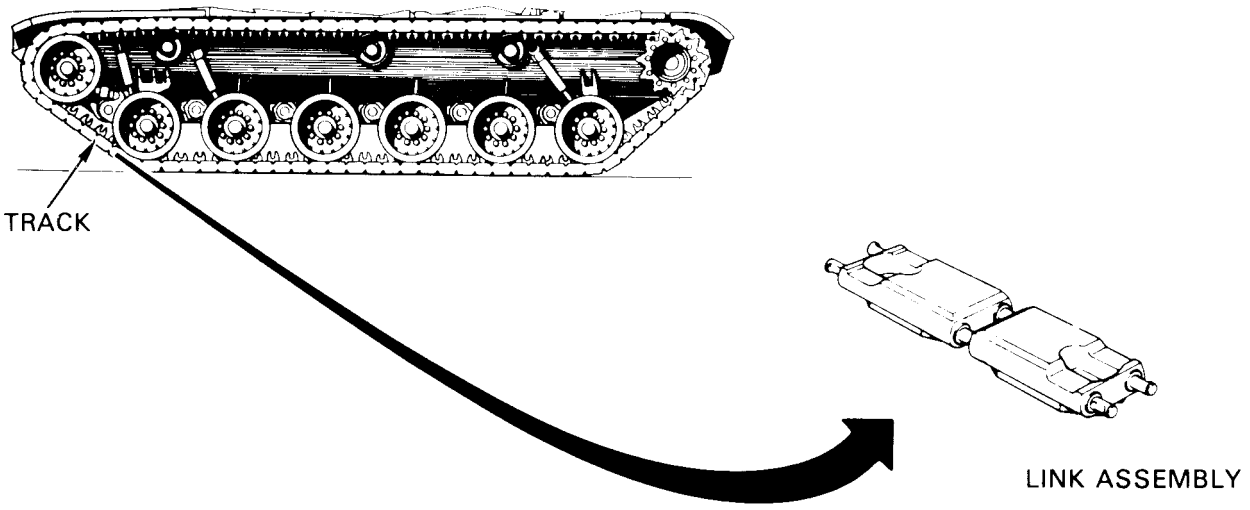
TOOLS: 15/16 in. socket with 3/4 in. drive
Ratchet with 3/4 in. drive
1-5/16 in. socket with 3/4 in. drive
Hammer
Hinged handle with 3/4 in. drive
1-1/2 in. socket with 3/4 in. drive
10 in. extension with 3/4 in drive
T-Slide handle with 3/4 in. drive
End connector puller

SPECIAL TOOLS: Track end connector puller and pump (Item 37, Chapter 3, Section I)

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Disconnect track (TM 5-5420-202-10)

NOTE
Do not install T97 track or components on vehicles equipped with T142 track.

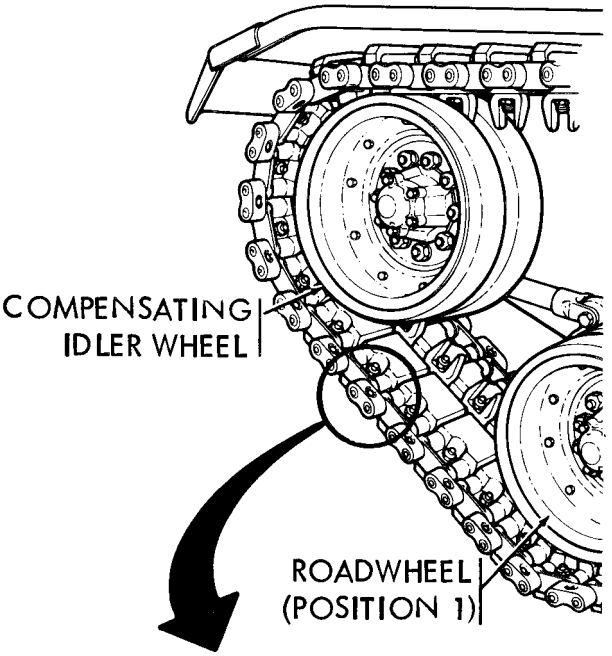


Go on to Sheet 2

T142 TRACK LINK REPLACEMENT (Sheet 2 of 3)

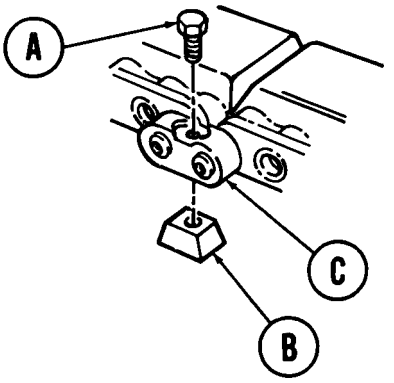
NOTE

Position link to be replaced between compensating idler wheel and roadwheel No. 1. Disconnect track at link to be replaced. It will be necessary to remove end connectors and centerguide on both sides of link.

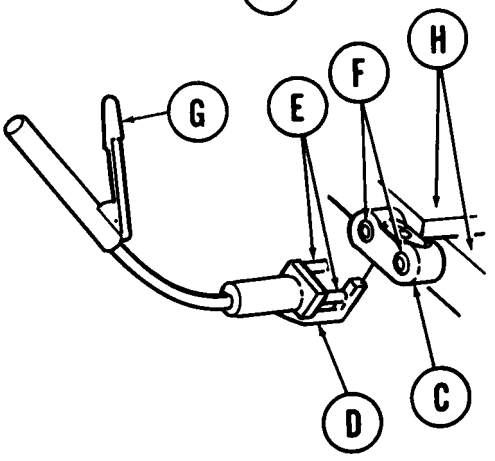


REMOVAL:

1. Using 15/16 inch socket with ratchet, loosen bolt (A) securing wedge (B) to end connector (C).
2. Using hammer, tap wedge (B) to loosen it.
3. Remove bolt and wedge. Throw both parts away.
4. Repeat steps 1 thru 3 to remove bolt and wedge at opposite side of track.

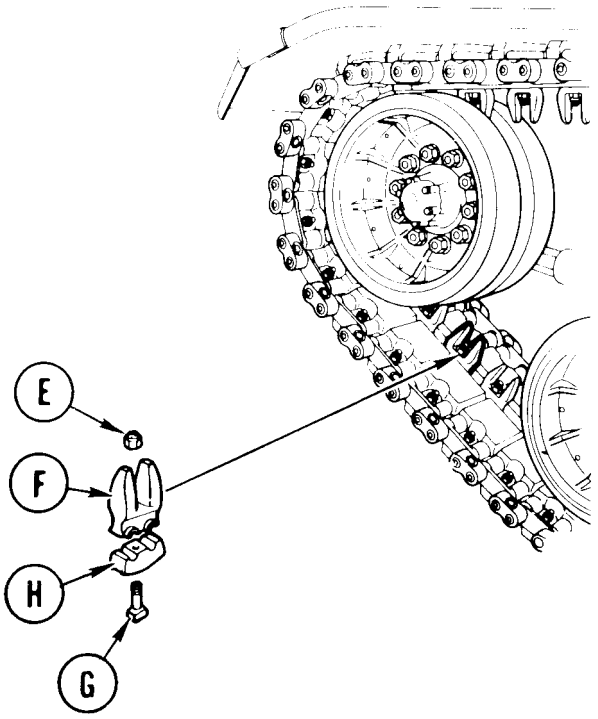


5. Put hook (D) of track end connector puller and pump behind end connector (C).
6. Aline studs (E) of track end connector puller and pump with shoe pins (F).
7. Pump handle (G) until end connector (C) comes off.
8. Repeat steps 5, 6, and 7 to remove opposite end connector.



Go on to Sheet 3

T142 TRACK LINK REPLACEMENT (Sheet 3 of 3)



9. Using 1-5/16 inch socket, T-slide handle, and extension, loosen nut (E).
10. Remove nut (E) and centerguide (F). Throw nut and centerguide away.
11. Using hammer, tap bolt (G) loose.
12. Remove bolt (G) and cap (H). Throw bolt and cap away.
13. Remove link assembly from track. Throw link assembly away.

INSTALLATION:

CAUTION

Replace link with one that has same thickness as other links in track. Thicker link can cause vibration.

1. Connect track with new track link assembly (TM 5-5420-202-10).
2. Torque new end connector and centerguides (page 14-88).
3. Tighten track tension (TM 5-5420-202-10).

End of Task

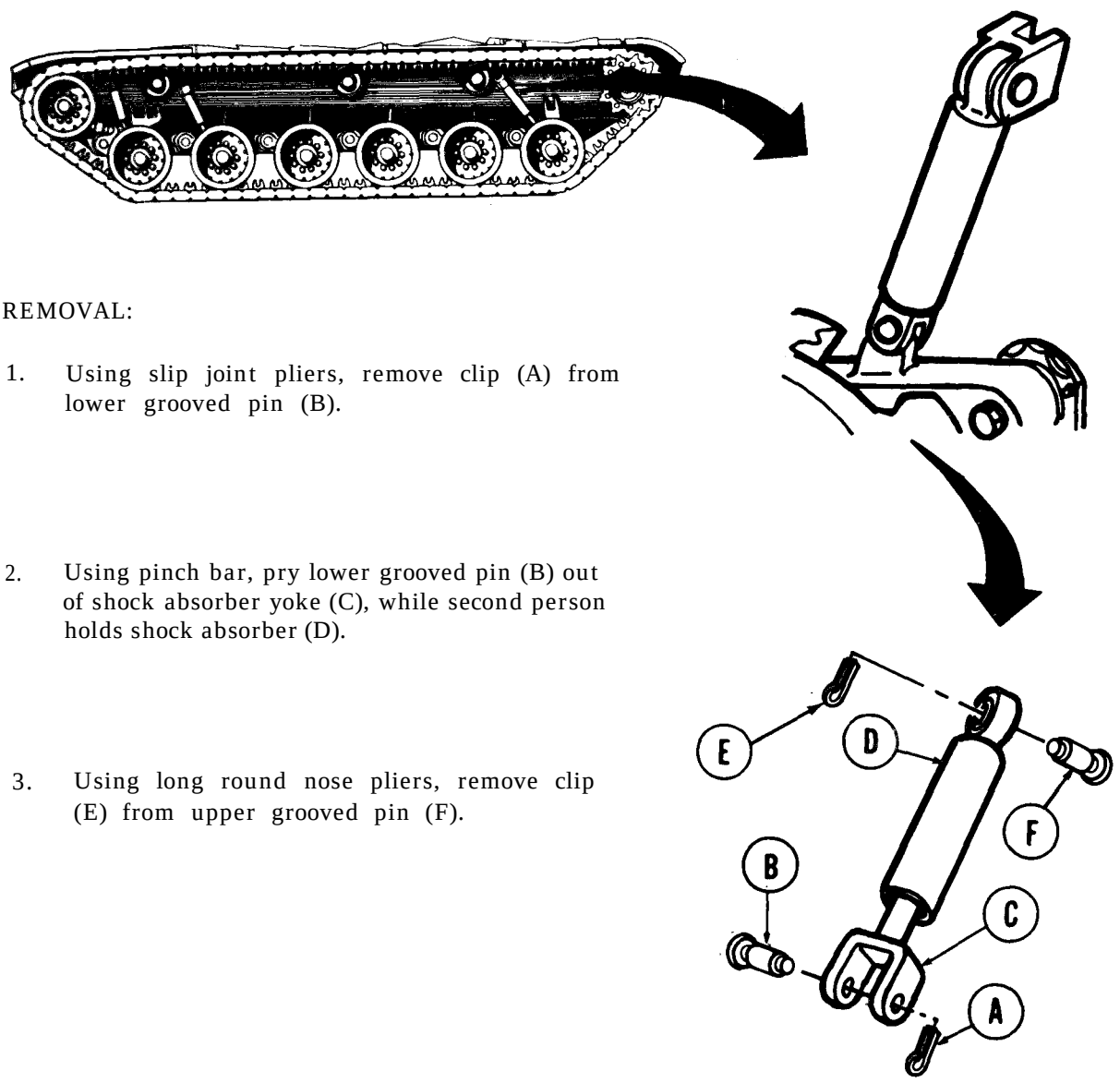
SHOCK ABSORBER REPLACEMENT (Sheet 1 of 2)

TOOLS: Slip joint pliers
Pinch bar, 26 in. long
12 lb. hammer
Long round nose pliers

PERSONNEL: Two

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Put transmission lever in park position (TM 5-5420-202-20-3)



REMOVAL:

1. Using slip joint pliers, remove clip (A) from lower grooved pin (B).

2. Using pinch bar, pry lower grooved pin (B) out of shock absorber yoke (C), while second person holds shock absorber (D).

3. Using long round nose pliers, remove clip (E) from upper grooved pin (F).

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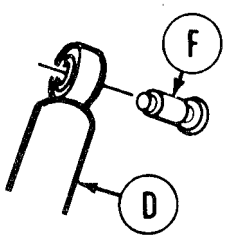
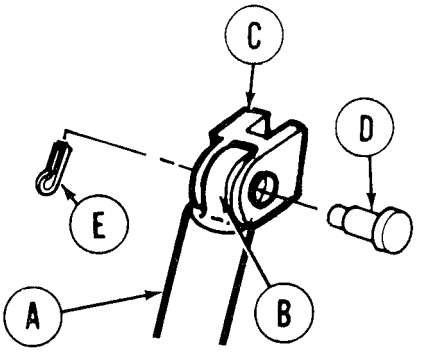
Go on to Sheet 2

SHOCK ABSORBER REPLACEMENT (Sheet 2 of 2)



4. While one person holds shock absorber (D), second person, using hammer, drive out upper grooved pin (F).

5. Remove shock absorber (D).

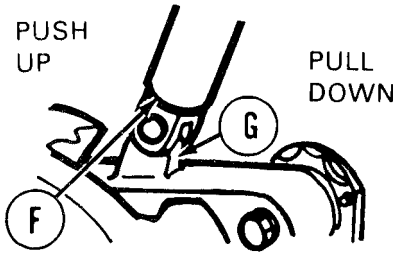


INSTALLATION:

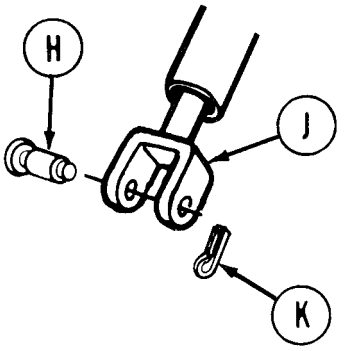
1. With one person holding shock absorber (A), aline upper eye (B) with hull mounting yoke (C) and with keyways.

2. Using fingers, insert upper grooved pin (D) in position through yoke (C) and eye (B).

3. Using pliers, install clip (E).



4. Aline lower shock absorber yoke (F), with roadwheel support arm (G). Aline keyways by pushing up or pulling down on yoke.



5. Using fingers, install lower grooved pin (H) through shock absorber yoke (J), with cotter pin hole facing out.

6. Using pliers, install clip (K).

End of Task

TA249620

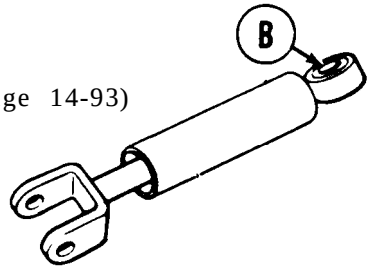
SHOCK ABSORBER BEARING REPAIR (Sheet 1 of 2)

TOOLS: Hammer
Chisel
1-1/2 in. socket with 3/4 in. drive
Ratchet with 3/4 in. drive
Vise
Center punch

SPECIAL TOOLS: Shock absorber bearing replacer (Item 26, Chapter 3, Section I)

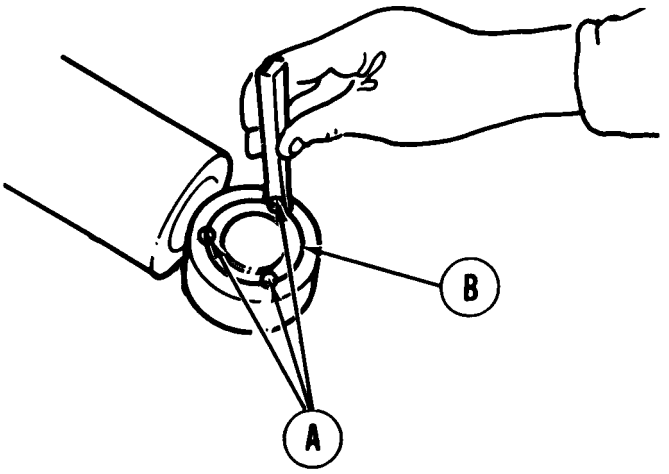
SUPPLIES: Bearing

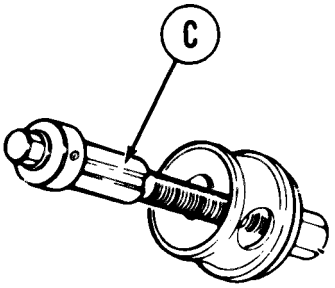
PRELIMINARY PROCEDURE: Remove shock absorber from vehicle (page 14-93)



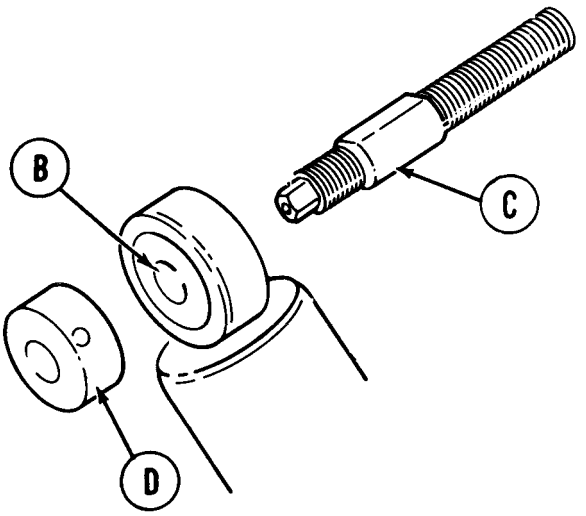
DISASSEMBLY:

1. Using hammer and chisel, cut off stakes (A) (three places, each side).





2. Using bearing replacer, remove bearing (B).



3. Put shorter threaded end of screw (C) through bore of bearing (B).

4. Screw base (D) of special tool onto shorter end. Base should mate to one side of bearing bore.

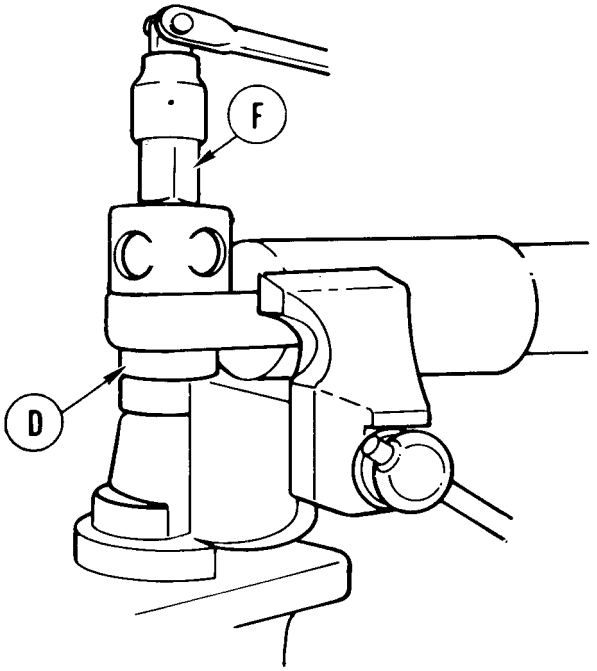
Go on to Sheet 2

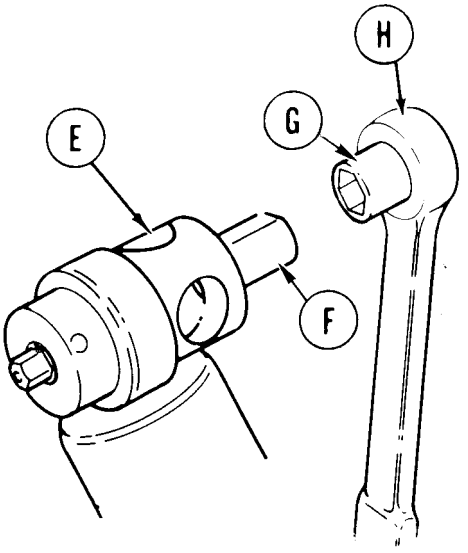
SHOCK ABSORBER BEARING REPAIR (Sheet 2 of 2)

5. Position replacer (E) onto longer threaded end of screw. Replacer (E) should mate to surface of bearing (B) at other side.

6. Screw nut (F) onto longer end until it mates with replacer (E).

7. Put shock absorber in vise.





8. Using socket (G) with ratchet (H), turn nut (F) of special tool to force bearing (B) out of shock absorber.

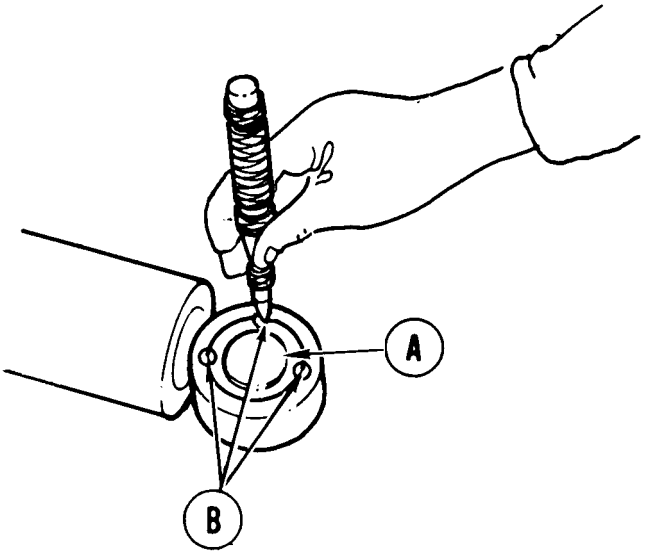
9. Throw bearing away.

ASSEMBLY:

1. Using bearing replacer as shown, install new bearing (A) in shock absorber.

2. Using hammer and center punch, stake (B) bearing (three places, each side) to hold bearing in place.

3. Install shock absorber (page 14-94).

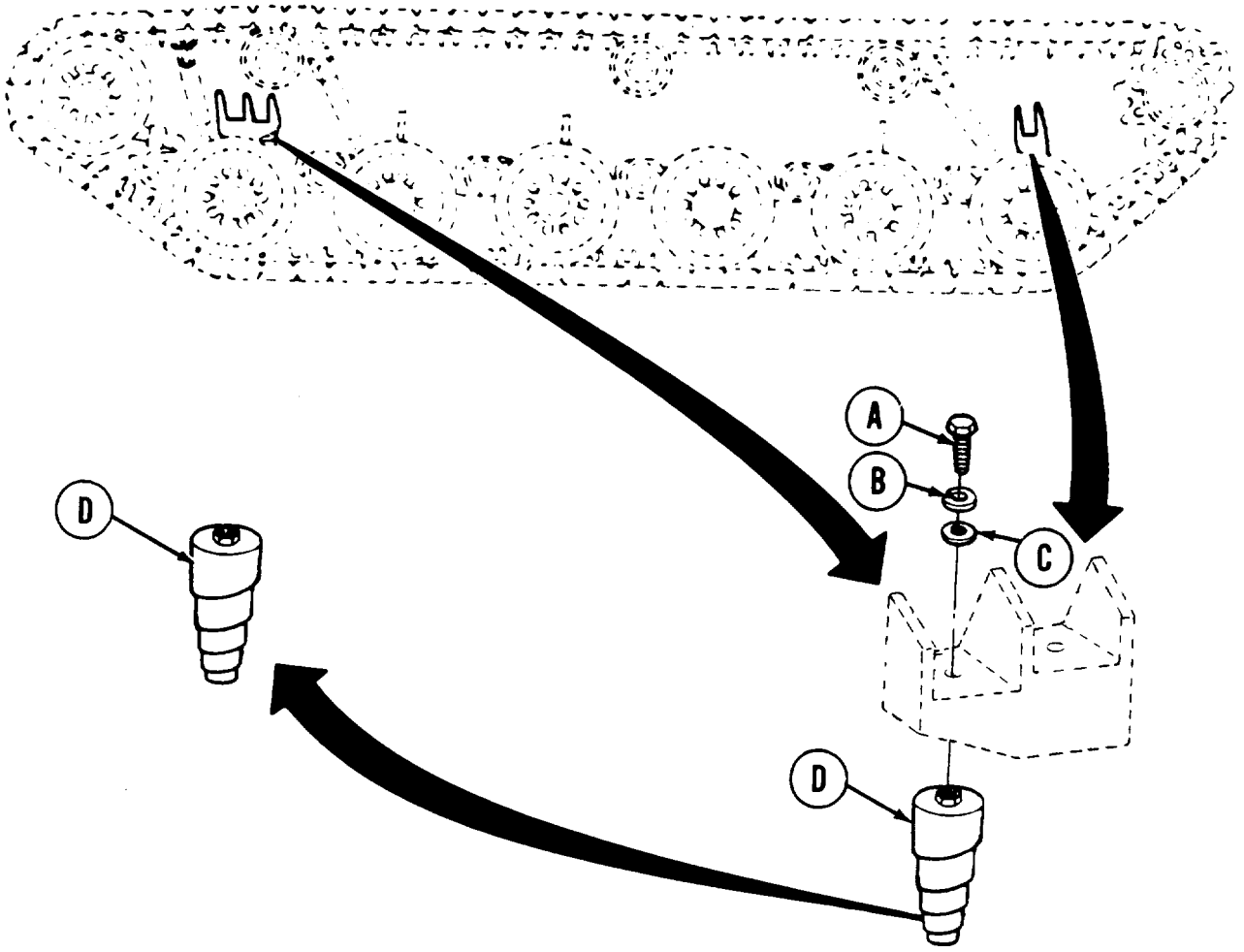


End of Task

VOLUTE SPRING REPLACEMENT (Sheet 1 of 2)

TOOLS: Ratchet with 1/2 in. drive
15/16 in. socket with 1/2 in. drive
Hammer
Hinged handle with 1/2 in. drive

SUPPLIES: Lockwasher



REMOVAL:

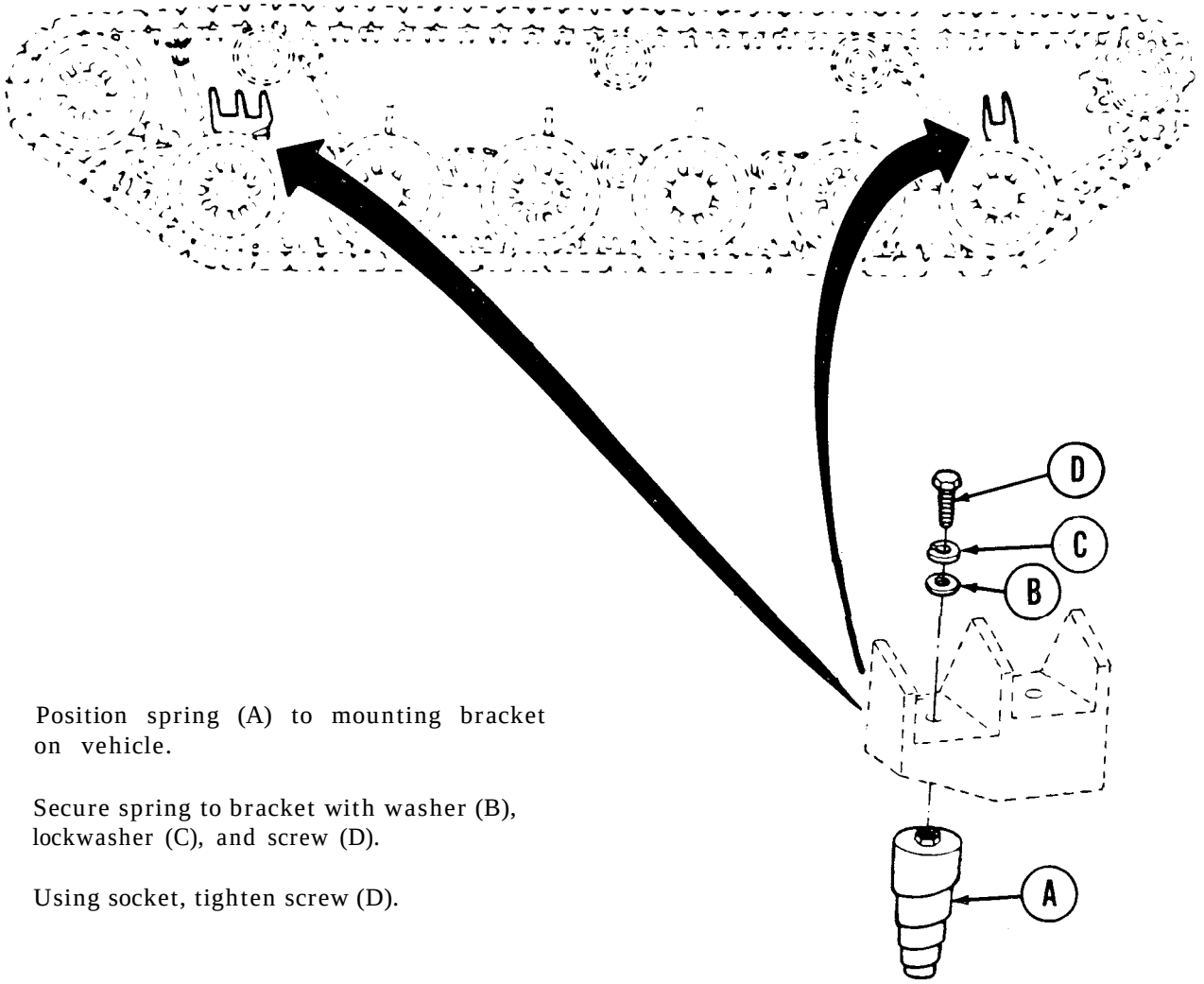
1. Using socket, remove screw (A), lockwasher (B), and washer (C) securing spring (D) to mounting bracket.

2. Remove spring from mounting bracket. Throw spring away.

TA249623

VOLUTE SPRING REPLACEMENT (Sheet 2 of 2)

INSTALLATION:



1. Position spring (A) to mounting bracket on vehicle.
2. Secure spring to bracket with washer (B), lockwasher (C), and screw (D).
3. Using socket, tighten screw (D).

End of Task

TA249624

SHOCK ABSORBER MOUNTING YOKE BUSHING REPLACEMENT (Sheet 1 of 4)

PROCEDURE INDEX

TOOLS: Hammer

SPECIAL TOOLS: Remover and replacer (Item 30.3, Chapter 3, Section I)
Bushing tool handle (Item 14, Chapter 3, Section I)

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Remove shock absorber (page 14-95)

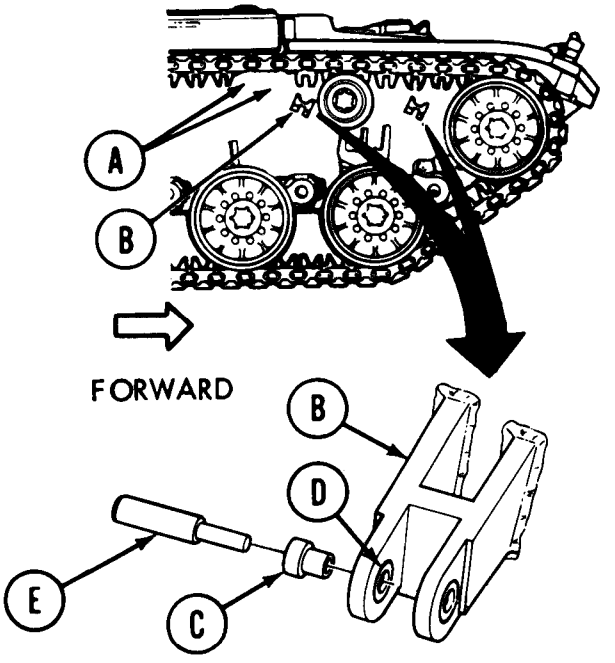
Front and Middle Mounting Yoke Bushings Replacement (Sheet 1 of 2)

REMOVAL:

NOTE

Replacement procedures are the same for the front and middle mounting yoke bushings except where noted.

1. For ease of removal of middle mounting yoke bushings, remove two track center guides at position (A) (to rear of middle mounting yoke (B) (TM 5-5420-202-10).
2. Position remover and replacer (C) on rear bushing (D) of mounting yoke (B).
3. Position handle (E) on remover and replacer (C) and, using hammer, drive rear bushing (D) out of mounting yoke (B).
4. Remove handle (E) and remover and replacer (C).



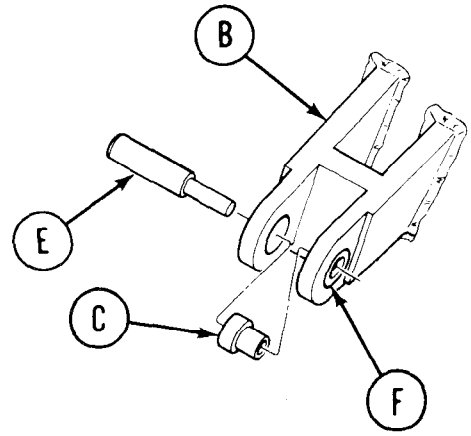
Go on to Sheet 2

SHOCK ABSORBER MOUNTING YOKE BUSHING REPLACEMENT (Sheet 2 of 4)

Front and Middle Mounting Yoke Bushings Replacement (Sheet 2 of 2)

5. Position remover and replacer (C) on forward bushing (F) of mounting yoke (B).

6. Position handle (E) through mounting yoke (B) on remover and replacer (C) and, using hammer, drive bushing (F) out of mounting yoke (B).



INSTALLATION:

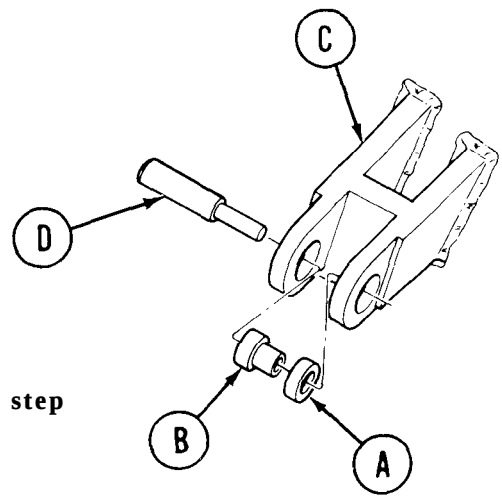
1. Position forward bushing (A) on remover and replacer (B) and aline bushing (A) in mounting yoke (C).

2. Position handle (D) through mounting yoke (C) on remover and replacer (B) and, using hammer, drive bushing (A) into mounting yoke (C) until flush with surface.

3. Remove handle (D) and remover and replacer (B).

4. Position rear bushing (E) on remover and replacer (B) and aline bushing (E) with mounting yoke (C).

5. Position handle (D) on remover and replacer and, using hammer, drive bushing (E) into mounting yoke (C) until flush with surface.

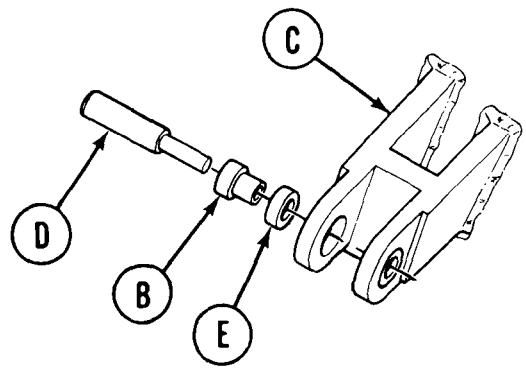


NOTE

If middle mounting yoke bushing was replaced, go to step 6. If not, go to step 7.

6. Install two track center guides (TM 5-5420-202-10).

7. Install shock absorber (page 14-96).



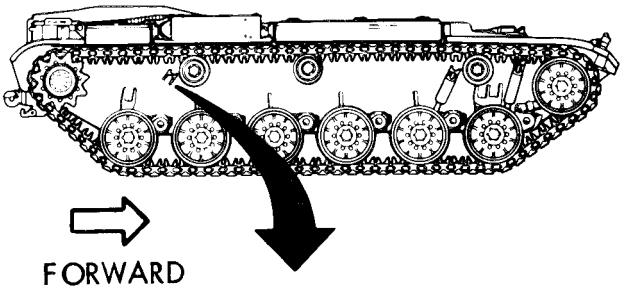
End of Task

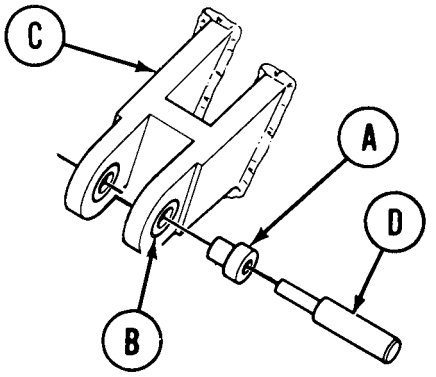
SHOCK ABSORBER MOUNTING YOKE BUSHING REPLACEMENT (sheet 3 of 4)

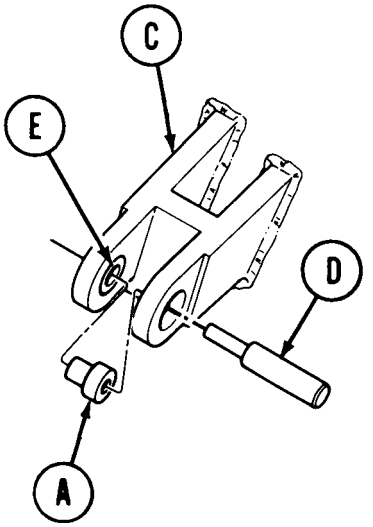
Rear Mounting Yoke Bushing Replacement (sheet 1 of 2)

REMOVAL:

1. Position remover and replacer (A) on foward bushing (B) of rear mounting yoke (C).
2. Position handle (D) on remover and replacer (A) and, using hammer, drive bushing (B) out of mounting yoke (C).
3. Remove handle (D) and remover and replacer (A).
4. Position remover and replacer (A) on rear bushing (E).
5. Position handle (D) through mounting yoke (C) on remover and replacer (A) and, using hammer, drive bushing (E) out of mounting yoke (C).
6. Remove handle (D) and remover and replacer (A).







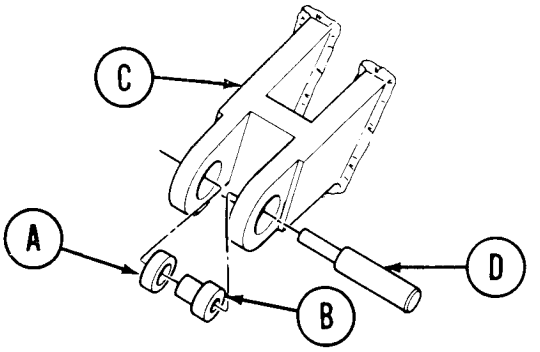
Go on to Sheet 2

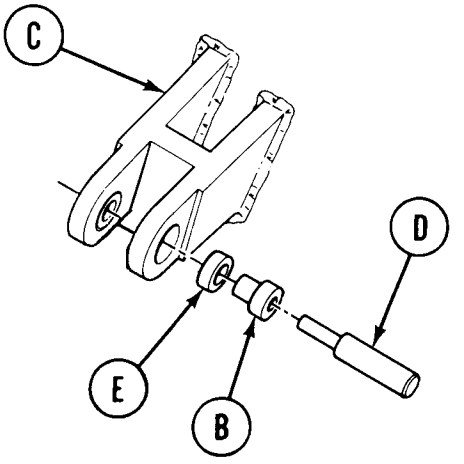
SHOCK ABSORBER MOUNTING YOKE BUSHING REPLACEMENT (Sheet 4 of 4)

Rear Mounting Yoke Bushing Replacement (Sheet 2 of 2)

INSTALLATION:

1. Position rear bushing (A) on remover and replacer (B) and aline bushing (A) in mounting yoke (C).
2. Position handle (D) through mounting yoke (C) or remover and replacer (B) and, using hammer, drive bushing (A) into mounting yoke (C) until flush with surface.
3. Remove handle (D) and remover and replacer (B).
4. Position forward bushing (E) on remover and replacer (B) and aline bushing (E) with mounting yoke (C).
5. Position handle (D) on remover and replacer (B) and, using hammer, drive bushing (E) into mounting yoke (C) until flush with surface.
6. Install shock absorber (page 14-96).





End of Task

GREASE ACTUATED TRACK ADJUSTING LINK REPLACEMENT (Sheet 1 of 7)

PROCEDURE INDEX

TOOLS: 15/16 in. socket with 1/2 in. drive
15/16 in. socket with 3/4 in. drive
1-1/8 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
Ratchet with 3/4 in. drive
5 in. extension with 1/2 in. drive
5 in. extension with 3/4 in. drive
12 in. adjustable wrench
Slide hammer puller (5573615))
Slip joint pliers
3/8 in. combination box and open end wrench
3/4 in. combination box and open end wrench
Torque wrench with 3/4 in. drive (0-600 ft-lb) (0-813 N·
Lifting device (2,000 lbs. capacity)

SPECIAL TOOLS: Removal and replacer tool (Item 20, Chapter 3, Section I)
Wire rope assembly (Item 25, Chapter 3, Section I)

SUPPLIES: Grease (Item 37, Appendix D)
Lockwasher
Pin, cotter

REFERENCE: TM 5-5420-202-10

PERSONNEL: Two

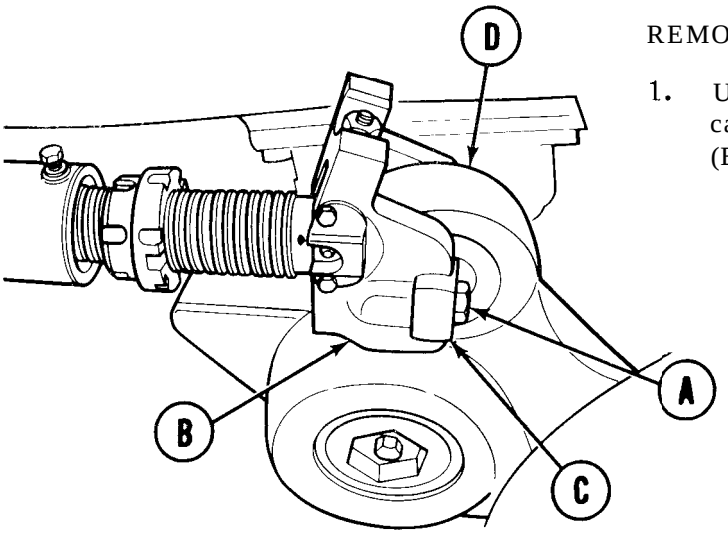
PRELIMINARY PROCEDURES: Loosen track tension (TM 5-5420-202-10)
Disconnect track between compensating idler wheel and number 1 roadwheel (TM 5-5420-202-10)
Remove front fender (page 16-58)
Remove shock absorber (page 14-93)
Remove compensating idler wheel (page 14-50)

NOTE

This adjusting link replacement procedure is for left side of tank. Right side adjusting link procedure is similar.

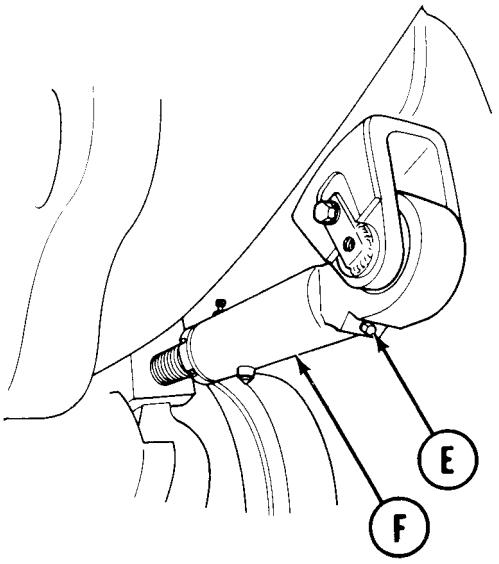
Go on to Sheet 2

GREASE ACTUATED TRACK ADJUSTING LINK REPLACEMENT (Sheet 2 of 7)

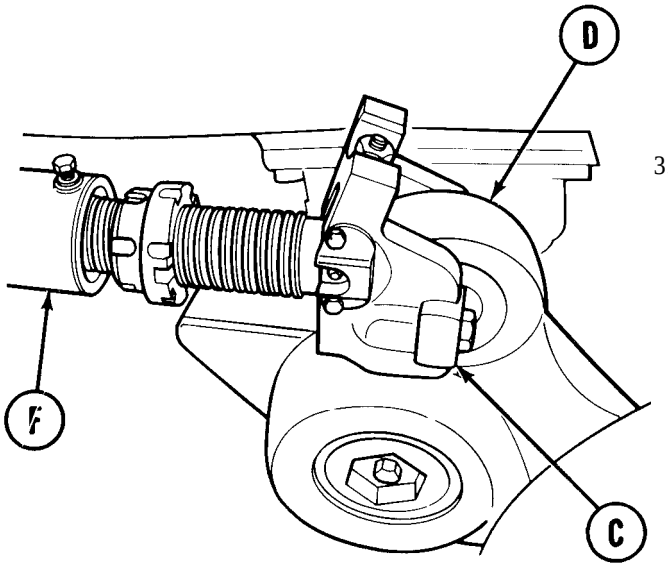


REMOVAL:

1. Using 15/16 inch socket, remove two capscrews (A) that secure shaft yoke (B) to roadwheel bearing (C) In number



2. Using 3/8 inch wrench, remove pipe plug (E) and collapse grease actuated adjusting link (F).



3. Remove adjusting link (F) from bearing (C) in number 1 roadwheel support arm (D).

Go on to Sheet 3

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GREASE ACTUATED TRACK ADJUSTING LINK REPLACEMENT (Sheet 3 of 7)

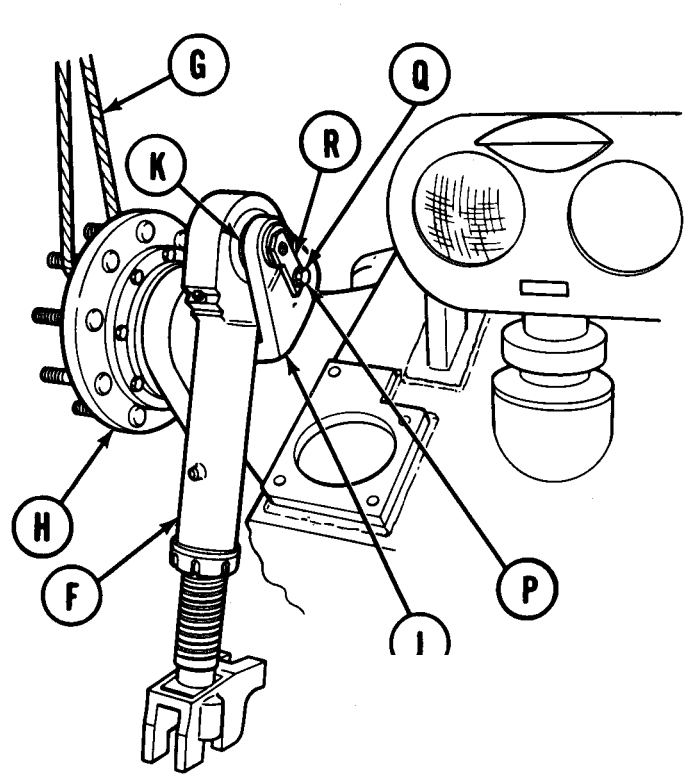
4. Attach wire rope assembly (G) to compensating idler wheel hub (H). Using lifting device, raise compensating idler arm (J) until adjusting link mounting eye (K) is positioned above the front slope of the tank.

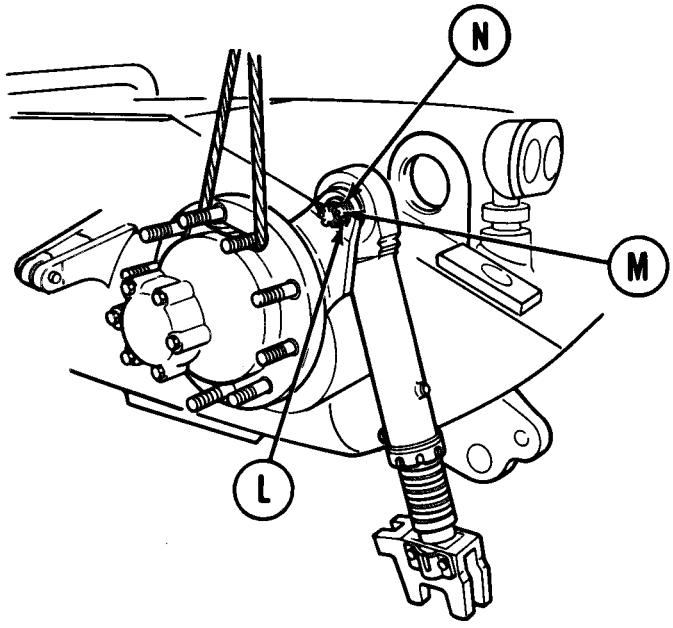
5. Position adjusting link (F) as shown.

6. Using slip joint pliers, straighten and remove cotter pin (L). Throw pin away.

7. Using 1-1/8 inch socket, remove nut (M) and washer (N).

8. Using 3/4 inch wrench, remove capscrew (P) and lockwasher (Q) securing tab on pin assembly (R) to imer face of compensating idler arm (J). Throw lockwasher away.





Go on to Sheet 4

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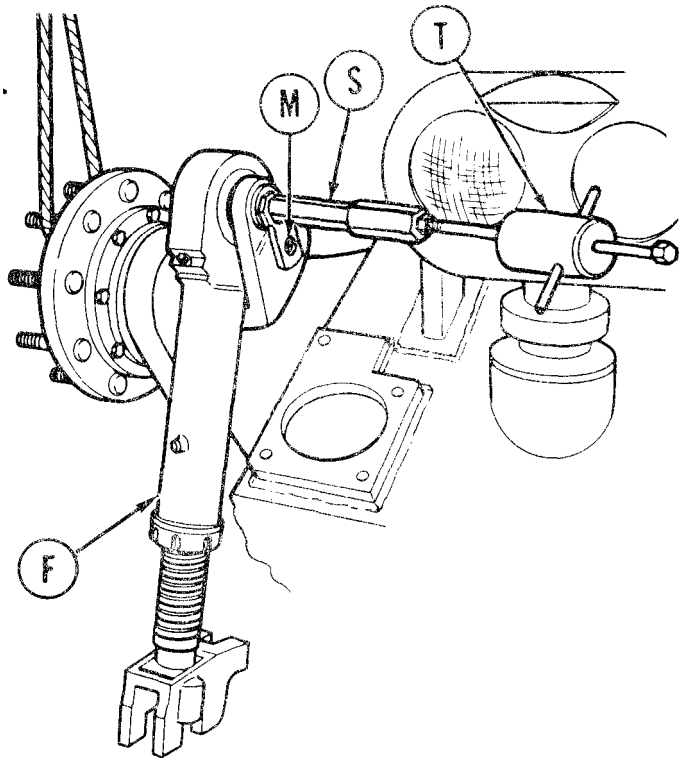
GREASE ACTUATED TRACK ADJUSTING LINK REPLACEMENT (Sheet 4 of 7)

9. Using adjustable wrench, screw remover and replacer tool (S) on pin assembly (M).

10. Secure slide hammer puller (T) on remover and replacer tool (S).

11. Have second person hold and support track adjusting link (F).

12. Using slide hammer puller (T), tap pin assembly (M) from adjusting link (F).



13. Remove slide hammer puller (T) from remover and rcplacer tool (S) using adjustable wrench.

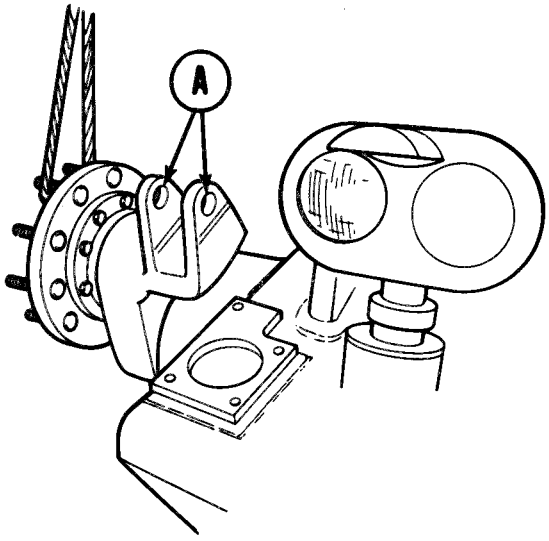
14. Remove pin assembly (M) from remover and replacer tool (S).

15. Remove grease actuated track adjusting link (F) from vehicle.

Go on to Sheet 5

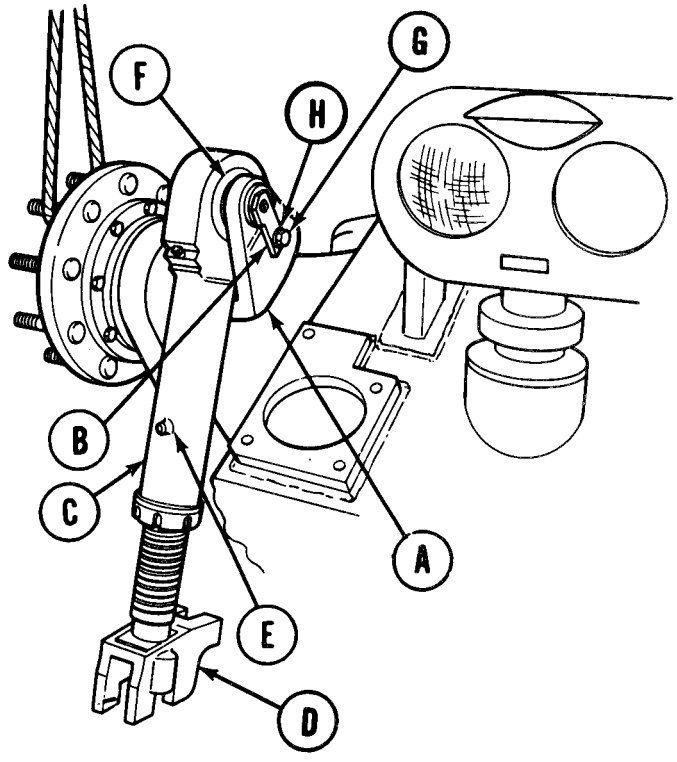
TA250376

GREASE ACTUATED TRACK ADJUSTING LINK REPLACEMENT (Sheet 5 of 7)



INSTALLATION:

1. Put a light coat of grease on two mounting eyes of compensating idler arm (A).



2. Put a light coat of grease on pin assembly (B).

3. Using second person, position grease actuated track adjusting link (C) with yoke (D) facing down and safety relief valve (E) facing up as shown.

4. Using second person, put adjusting link (C) between two eyes of compensating idler arm (A).

5. Align keyways in pin assembly (B) with splines in adjusting link bearing (F) and install pin assembly (B) from hull side to secure adjusting link (C) to compensating idler arm (A).

6. Align tab on pin assembly (B) with threaded hole in compensating idler arm (A) and install capscrew (G) and new lockwasher (H). Using 3/4 inch wrench, tighten capscrew (G).

Go on to Sheet 6

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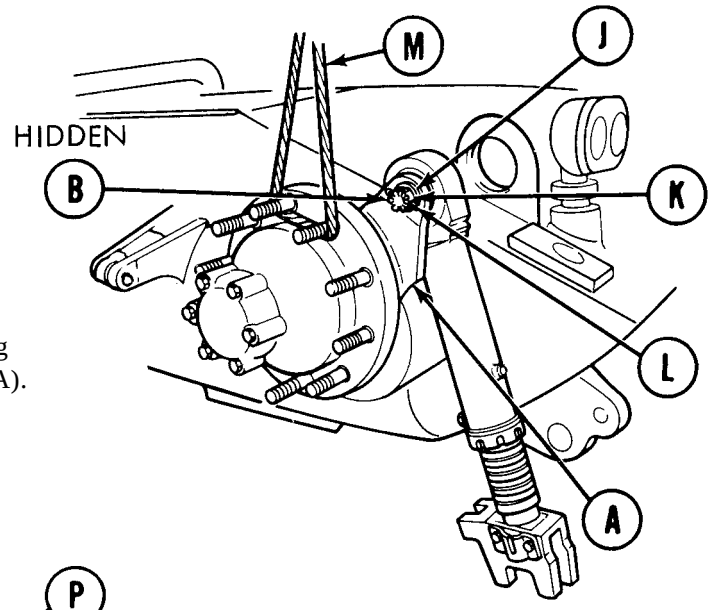
GREASE ACTUATED TRACK ADJUSTING LINK REPLACEMENT (Sheet 6 of 7)

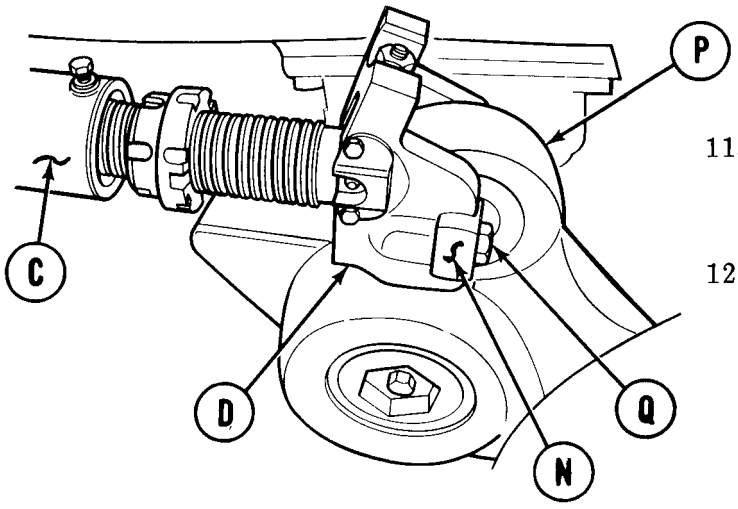
7. Install flat washer (J) and nut (K) on threaded end of pin assembly (B).

8. Using 1-1/8 inch socket, tighten nut (K) and align slot in nut (K) with hole in pin assembly (B).

9. Using pliers, install new cotter pin (L).

10. Using wire rope assembly (M) and lifting device, lower compensating idler arm (A).





11. Aline slots of yoke (D) on adjusting link (C) with bearing (N) on number 1 roadwheel support arm (P).

12. Using 15/16 inch socket and extension, install and tighten two capscrews (Q) to secure adjusting link (C) to bearing (N).

13. Using torque wrench, tighten capscrews (Q) 150-200 lb. ft. (203-271 N<m).

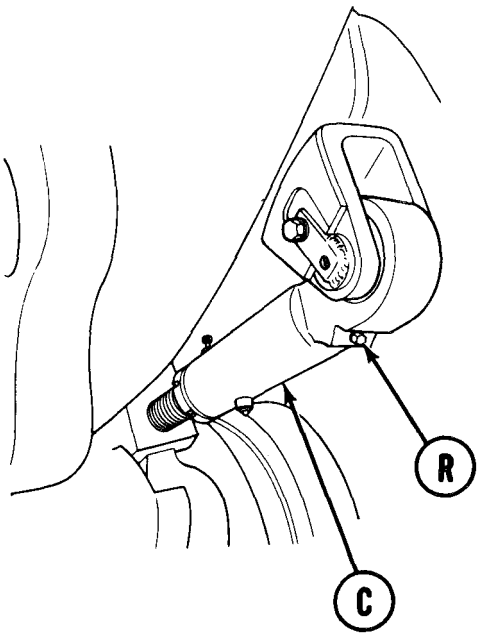
14. Remove wire rope assembly (M) and lifting device.

Go on to Sheet 7

TA250378

GREASE ACTUATED TRACK ADJUSTING LINK REPLACEMENT (Sheet 7 of 7)

15. Using 3/8 inch wrench, install pipe plug (R) in adjusting link (C).
16. Install compensating idler wheel (page 14-53).
17. Instal' shock absorber (page 14-94).
18. Install front fender (page 16-62).
19. Connect track (TM 5-5420-202-10).
20. Adjust track tension (TM 5-5420-202-10).



End of Task

TA250379

GREASE ACTUATED TRACK ADJUSTING LINK REPAIR (Sheet 1 of 4)

PROCEDURE INDEX

TOOLS:
7/16 in. socket with 1/2 in. drive
3/4 in. socket with 1/2 in. drive
15/16 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
Torque wrench with 1/2 in. drive (0-175 lb-ft) (0-236 N.m)
10 in. adjustable wrench
Hammer
Chisel
Center punch
Bench vise with soft jaws

SPECIAL TOOLS: Bearing driver (Item 30.2, Chapter 3, Section I)

SUPPLIES:
Brush (Item 10, Appendix D)
Rag, wiping (Item 65, Appendix D)
Dry cleaning solvent (Item 55, Appendix D)
Packing
Lockwashers (2 required)
Gloves (Item 69, Appendix D)
Goggles (Item 70, Appendix D)

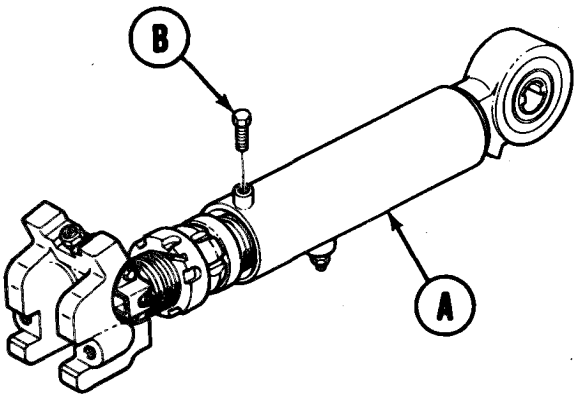
REFERENCES: None

PRELIMINARY PROCEDURE: Remove grease actuated track adjusting link from vehicle (page 14-99)

Go on to Sheet 2

GREASE ACTUATED TRACK ADJUSTING LINK REPAIR (Sheet 2 of 4)

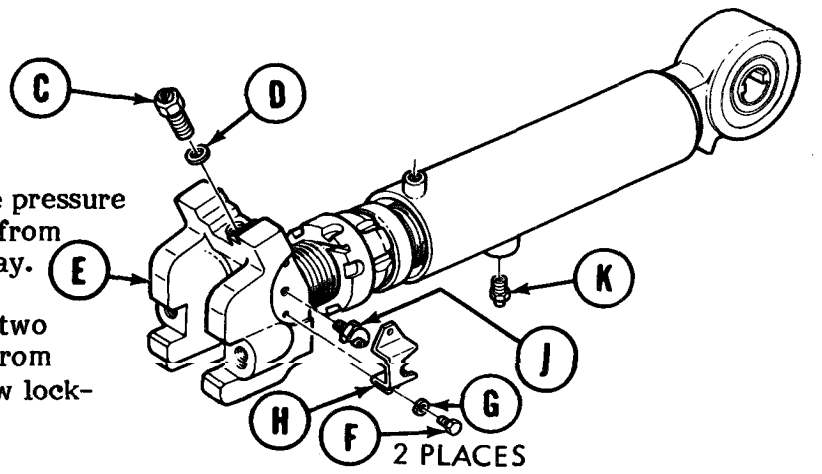
DISASSEMBLY:



WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. Wear protective goggles and gloves and use oniy in a well ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point is 100°F-138°F (38°C-50°C). If you become dizzy while using cleaning solvent, get fresh air immediateiy and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

1. Clean grease actuated adjusting link (A) with solvent, brush, and rag.
2. Using 3/4 inch socket, remove collar locking screw (B).



3. **Using 15/16 inch socket, remove pressure relief valve (C) and packing (D) from yoke (E). Throw packing (D) away.**
4. **Using 7/16 inch socket, remove two screws (F) and lockwashers (G) from support link assembly (H). Throw lockwashers (G) away.**
5. Using 7/16 inch socket, remove grease fitting (J). Throw fitting (J) away.
6. Using 7/16 inch socket, remove safety relief valve (K).

Go on to Sheet 3

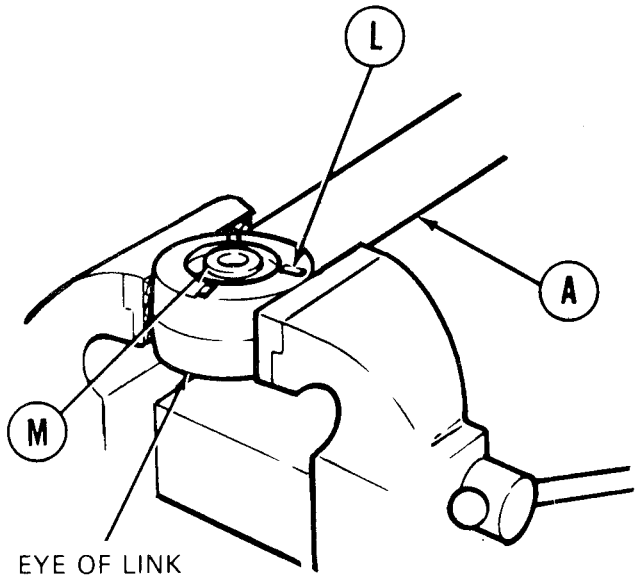
TA250380

GREASE ACTUATED TRACK ADJUSTING LINK REPAIR (Sheet 3 of 4)

7. Position adjusting link (A) in vise.

8. Using hammer and chisel, cut stakes (L) at three places (both sides) that hold bearing (M) in eye end of link.

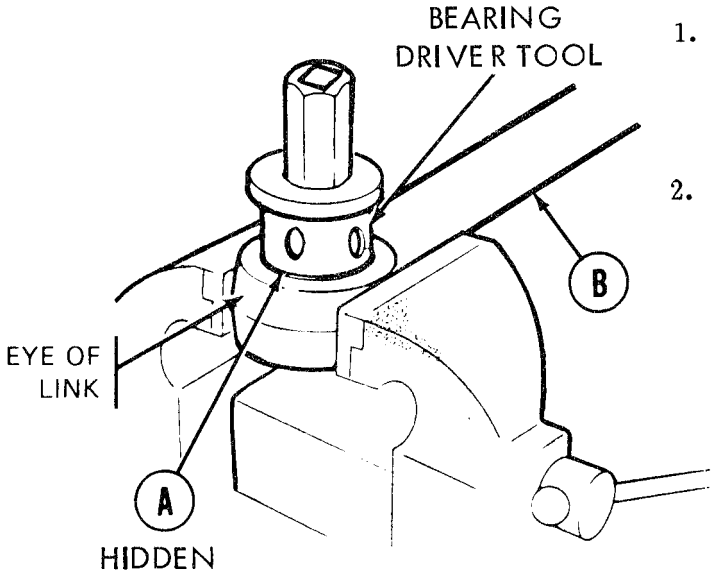
9. Using bearing driver tool and adjustable wrench, remove bearing (M) from adjusting link (A). Throw bearing (M) away.



INSPECTION:

1. Inspect all parts removed for cracks, breaks, crossed or stripped threads, or missing items. Replace damaged or missing parts as necessary.

2. Inspect adjusting link for cracks, mechanical damage, or corrosion. Cracks are not permissible. Turn damaged adjusting link in to next higher level maintenance.



ASSEMBLY:

1. Using bearing driver tool and adjustable wrench, install new bearing (A) in adjusting link (B).

2. Using hammer and center punch, stake bearing (A) in adjusting link (B) in three places (both sides).

TA250381

Go on to Sheet 4

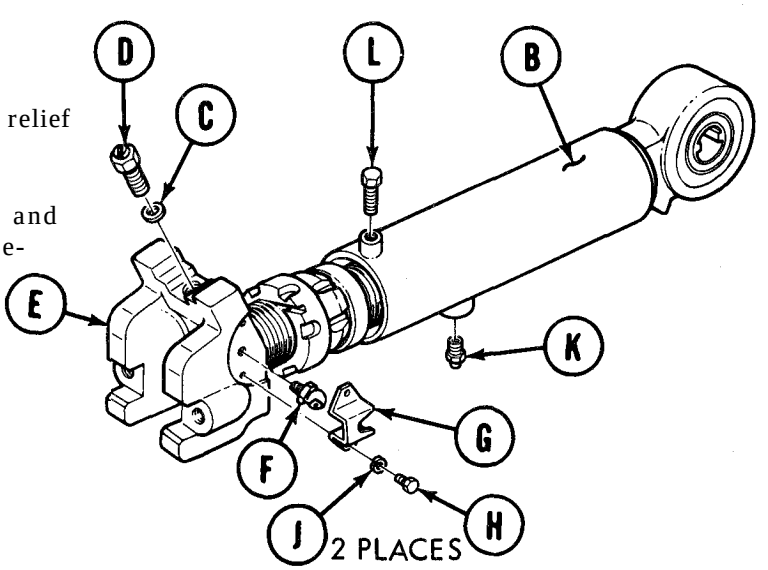
GREASE ACTUATED TRACK ADJUSTING LINK REPAIR (Sheet 4 of 4)

3. Put thin coat of grease on new packing (C).

4. Install new packing (C) and pressure relief valve (D) in yoke (E).

5. Using 0-175 foot-pound torque wrench and 15/16 inch socket, torque valve (D) between 40-60 pound-feet (54-81 N.m)

6. Using 7/16 inch socket, install grease fitting (F) in yoke (E).



7. Position support link assembly (G) on yoke (E). Using 7/16 inch socket, install two screws (H) and new lockwashers (J).

8. Using 7/16 inch socket, install safety relief valve (K) in adjusting link (B).

9. Install locking collar screw (L) in adjusting Iink (B), but do not tighten.

10. Install grease actuated track adjusting link (page 14-103).

End Of Task

TA250382

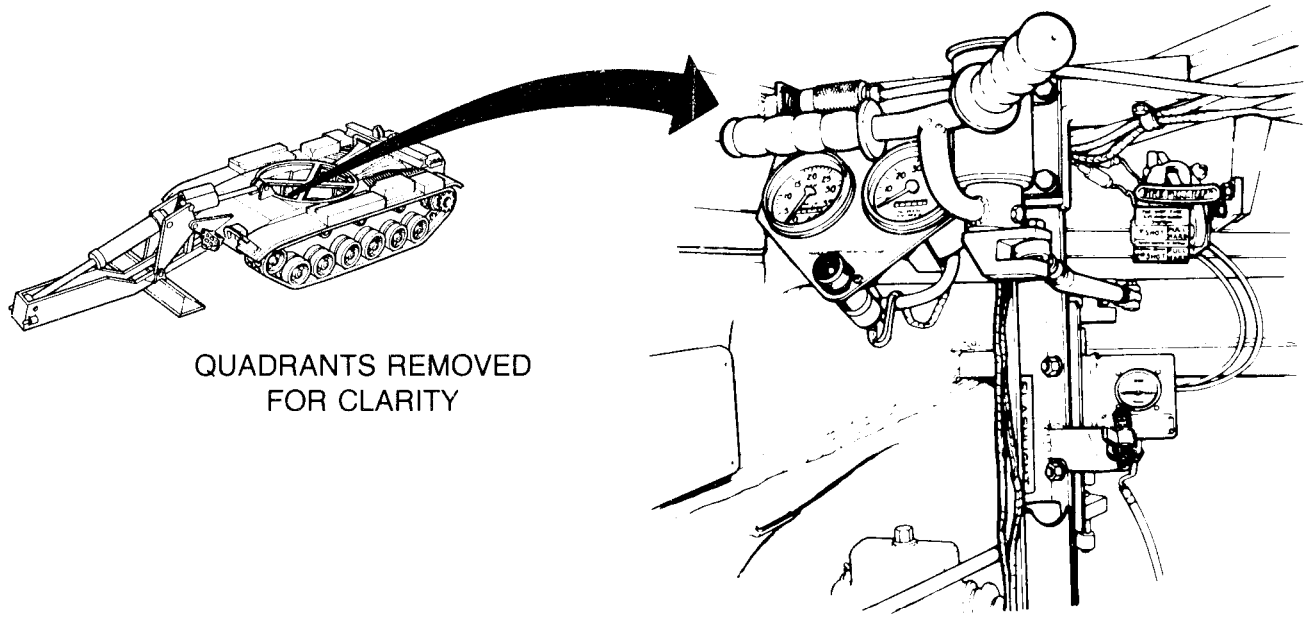
CHAPTER 15
STEERING SYSTEM MAINTENANCE

INDEX

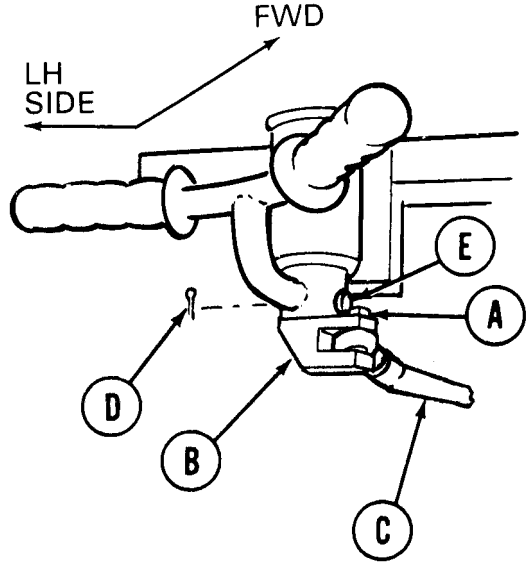
STEERING CONTROL HANDLE ASSEMBLY REPLACEMENT (Sheet 1 of 2)

TOOLS: 9/16 in. combination box and open end wrench
Hammer
Slip joint pliers
1/8 in. drive punch

REFERENCE: TM 5-5420-202-10



1. Using wrench, remove bolt (A) from handle (B).
2. Push rod (C) to one side.
3. Using slip joint pliers, remove cotter pin (D).
4. Using hammer and punch, remove pin (E).
5. Remove handle (B).



Go on to Sheet 2

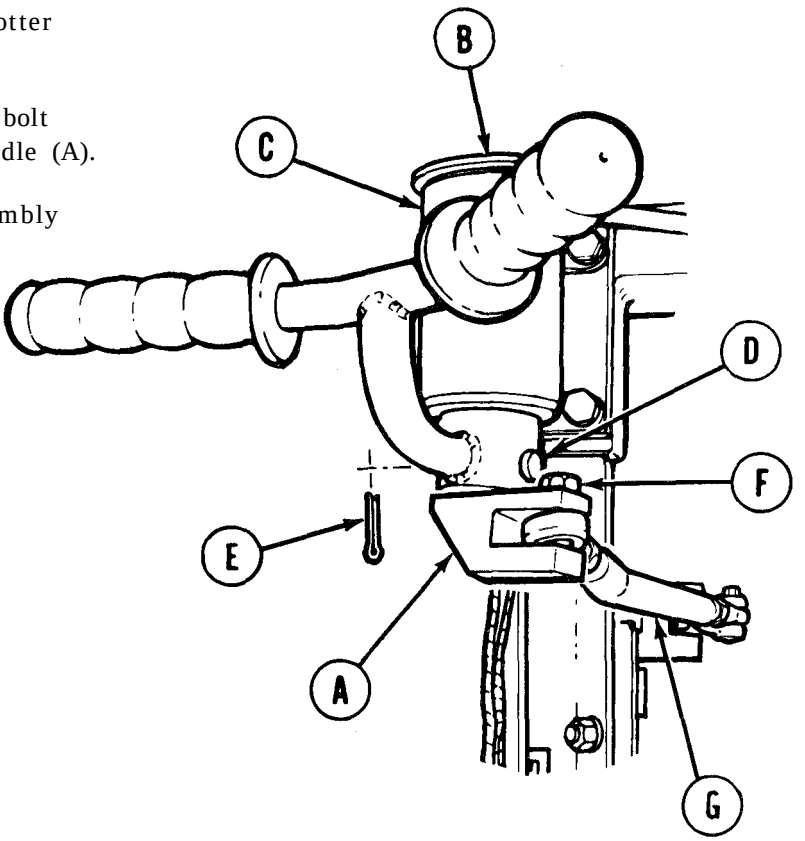
TA249625

STEERING CONTROL HANDLE ASSEMBLY REPLACMEMT (Sheet 2 of 2)

INSTALLATION:

1. Install handle (A) on sleeve (B) of mount (c).
2. Aline holes in sleeve (B) and handle (A).
3. Using hammer and punch, install pin (D).
4. Using slip joint pliers, install cotter pin (E) in pin (D).
5. Using 9/16 inch wrench, install bolt (F) through rod end (G) into handle (A).
6. Check operation of handle assembly (TM 5-5420-202-10).

End of Task



TA249626

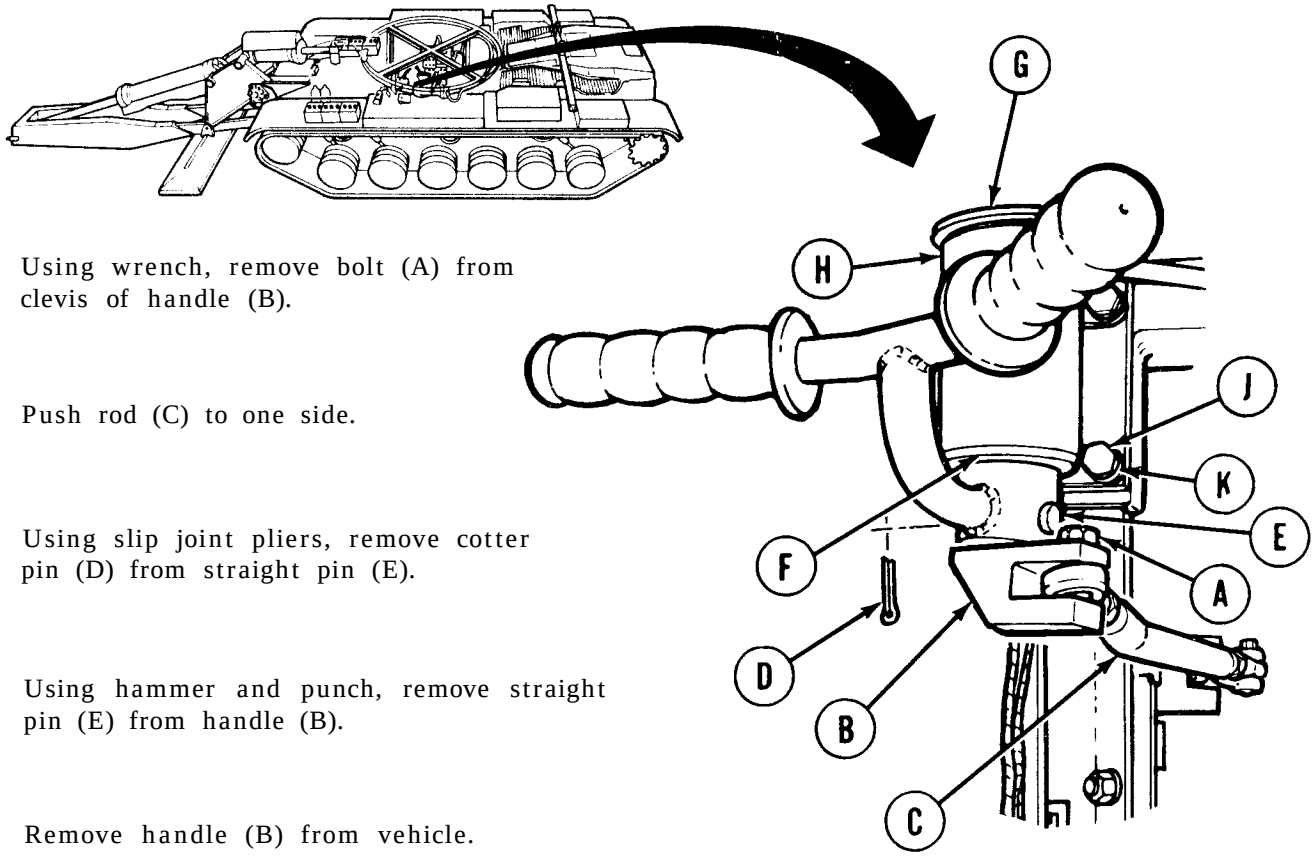
STEERING CONTROL HANDLE, MOUNT AND SLEEVE REPLACEMENT (Sheet 1 of 2)

TOOLS: 9/16 in. open end wrench
Hammer
1/8 in. drive punch
Slip joint pliers
Snapring pliers

SUPPLIES: Lockwashers (4 required)

REMOVAL:

QUADRANTS REMOVED
FOR CLARITY



1. Using wrench, remove bolt (A) from clevis of handle (B).

2. Push rod (C) to one side.

3. Using slip joint pliers, remove cotter pin (D) from straight pin (E).

4. Using hammer and punch, remove straight pin (E) from handle (B).

5. Remove handle (B) from vehicle.

6. Using snapring pliers, remove retaining ring (F). Remove sleeve (G) from mount (H).

7. Using wrench, remove four screws (J) and lockwashers (K). Remove mount (H).

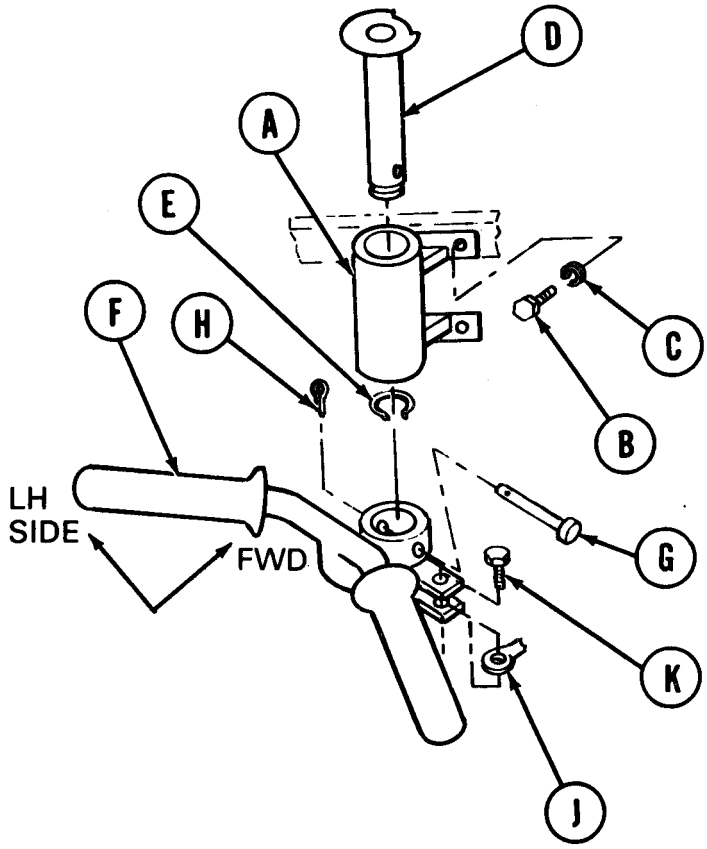
Go on to Sheet 2

TA249627

STEERING CONTROL HANDLE, MOUNT AND SLEEVE REPLACEMENT (Sheet 2 of 2)

INSTALLATION:

1. Using wrench, secure mount (A) to mounting block with four screws (B) and lockwashers (C).
2. Install sleeve (D) in mount (A).
3. Using snapring pliers, install retaining ring (E) on sleeve (D).
4. Install handle (F) over sleeve (D).
5. Line up holes in sleeve (D) and handle (F).
6. Install pin (G) in handle (F) and sleeve (D).
7. Using slip joint pliers, install cotter pin (H) through straight pin (G).
8. Insert rod end (J) into clevis of handle (F).
9. Using wrench, install screw (K) to secure rod end (J) to handle (F).
10. Check operation of handle assembly (TM 5-5420-202-10).



End of Task

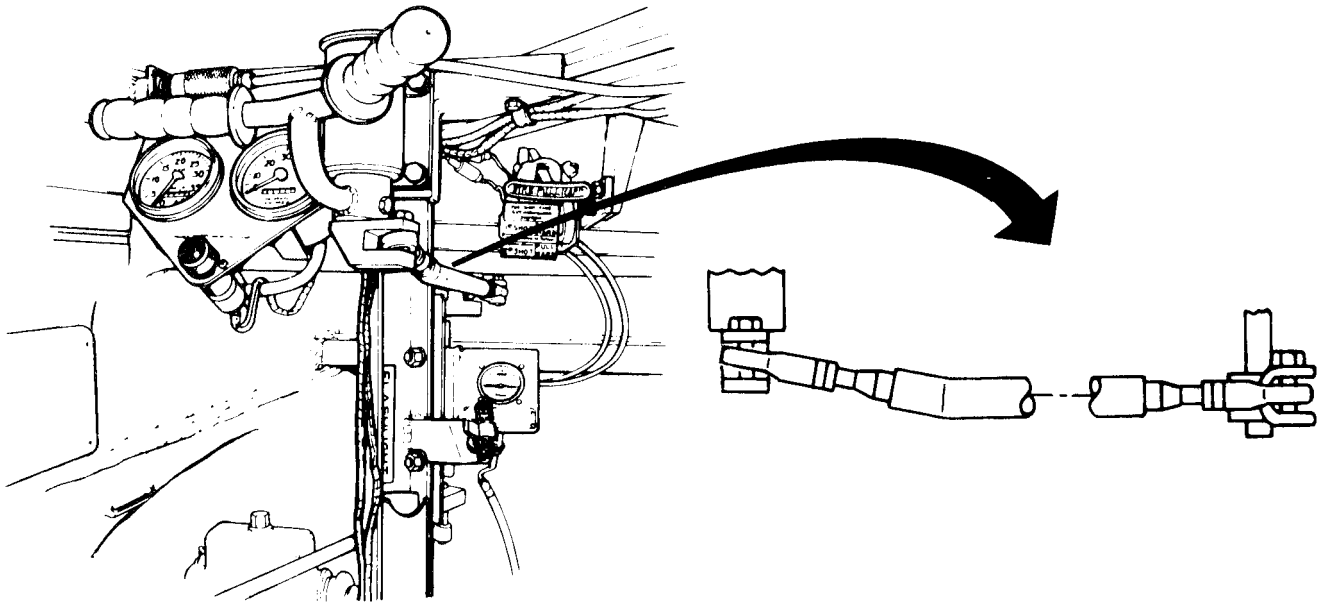
TA249628

STEERING CONTROL ROD REPLACEMENT (Sheet 1 of 3)

TOOLS: 9/16 in. combination box and open end wrench (2 required)
Rule
Torque wrench with 3/8 in. drive (0-200 lb-in.)
9/16 in. crowfoot adapter with 3/8 in. drive

SUPPLIES: Paper (Item 72, Appendix D)
Pencil (Item 71, Appendix D)

REFERENCE: TM 5-5420-202-10



TA249629

Go on to Sheet 2

STEERING CONTROL ROD REPLACEMENT (Sheet 2 of 3)

REMOVAL:

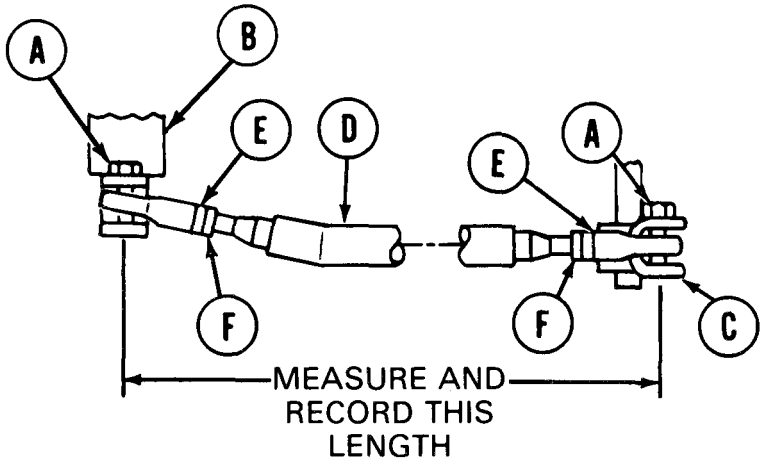
1. Using 9/16 inch wrench, remove bolt (A) from steering control handle (B).

2. Using 9/16 inch wrench, remove bolt (A) from lever (C).

3. Remove rod (D).

4. Using steel tape, measure center-to-center distance of holes in rod ends (E).

5. Using pencil and paper, write down center-to-center distance.



6. Using 9/16 inch wrench to hold rod ends (E), use another 9/16 inch wrench to loosen jamnuts (F).

7. Using 9/16 inch wrench, remove rod ends (E) and jamnuts (F).

Go on to Sheet 3

TA249630

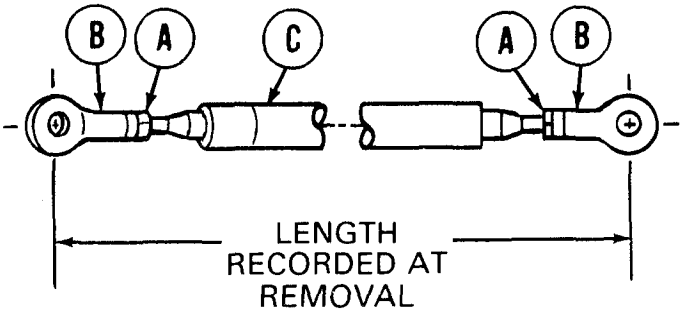
STEERING CONTROL ROD REPLACEMENT (Sheet 3 of 3)

INSTALLATION:

1. Using 9/16 inch wrench, install jamnuts (A) and rod ends (B) on rod (C).

2. Using 9/16 inch wrench and steel tape, obtain measurement between centers of holes in rod ends (B).

3. Using torque wrench and crowfoot adapter, tighten nuts (A) against rod ends (B) to a minimum torque of 192 lb-in. (22 N•m).

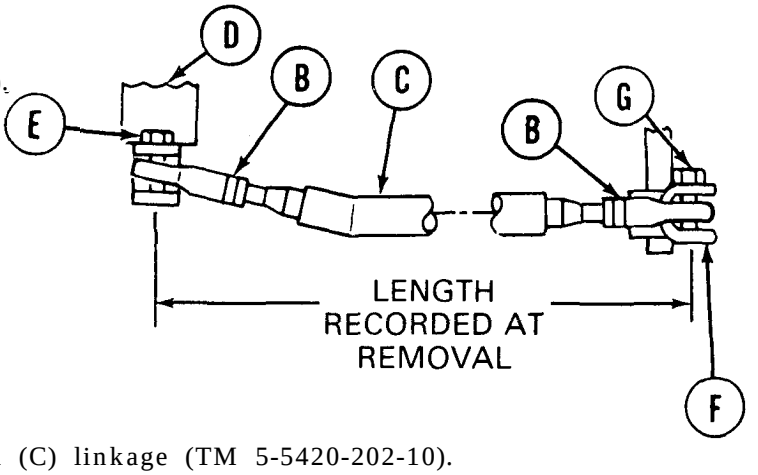


4. Position rod end (B) in steering control handle (D).

5. Using 9/16 inch wrench, install bolt (E) in steering control handle (D).

6. Position other rod end (B) in lever (F).

7. Using 9/16 inch wrench, install bolt (G) in link (F).



8. Test operation of steering control rod (C) linkage (TM 5-5420-202-10).

End of Task

TA249631

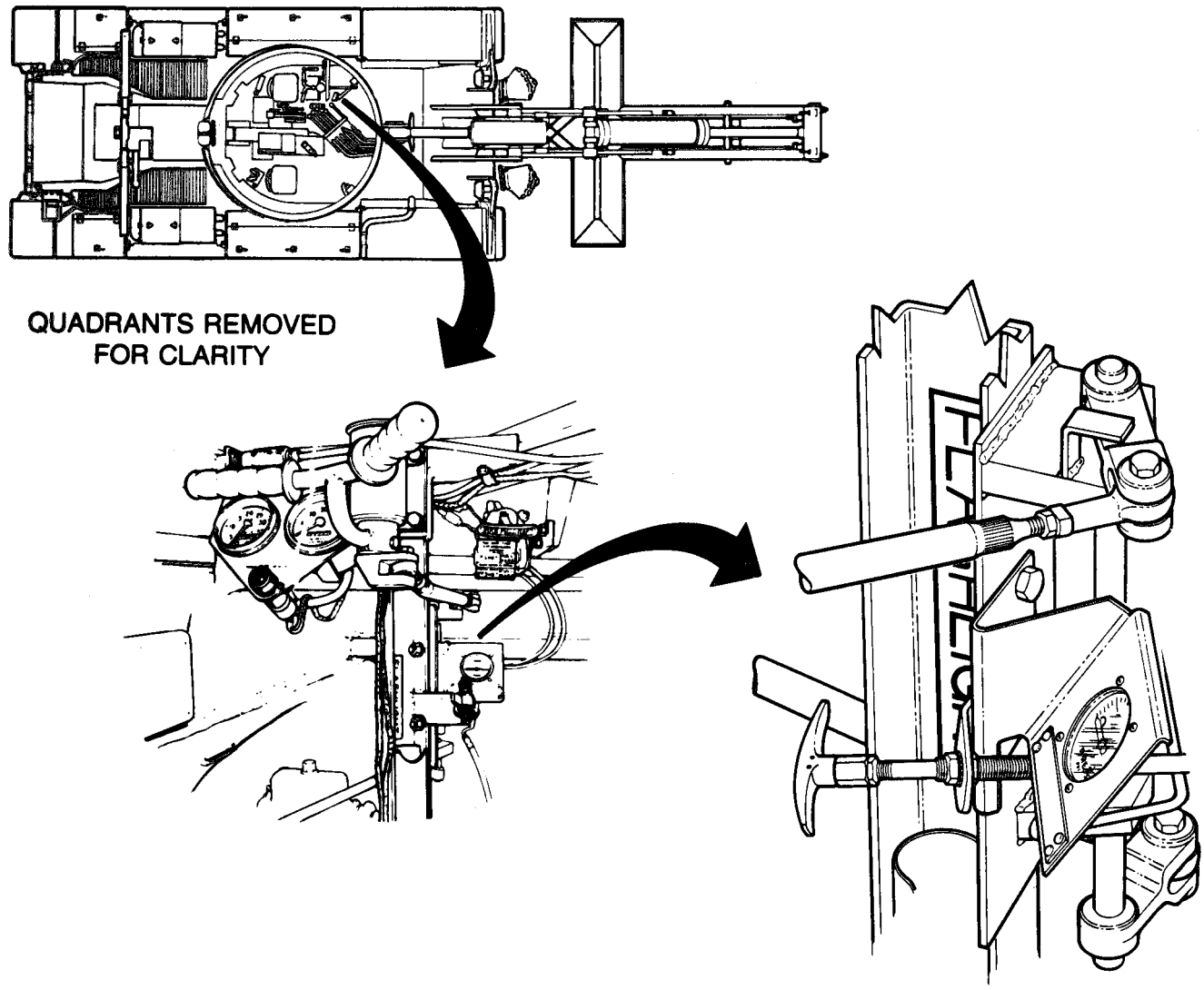
STEERING CONTROL LEVER ASSEMBLY REPLACEMENT (Sheet 1 of 4)

PROCEDURES INDEX

TOOLS: 3/4 in. combination box and open end wrench (two required)
9/16 in. combination box and open end wrench

SUPPLIES: Lockwashers (2 required)

REFERENCE: TM 5-5420-202-10

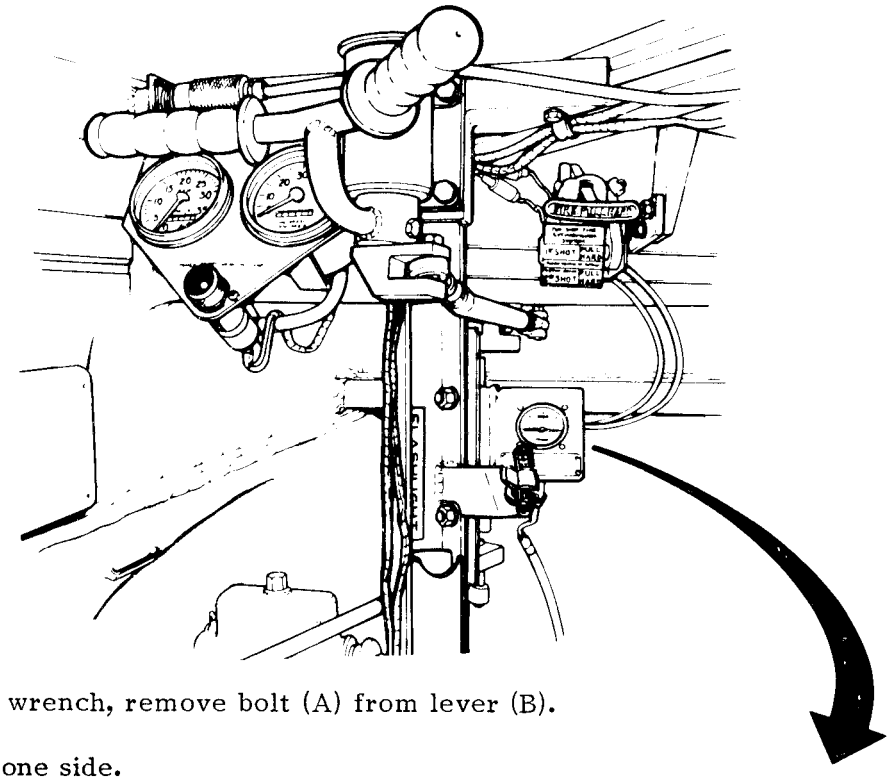


Go on to Sheet 2

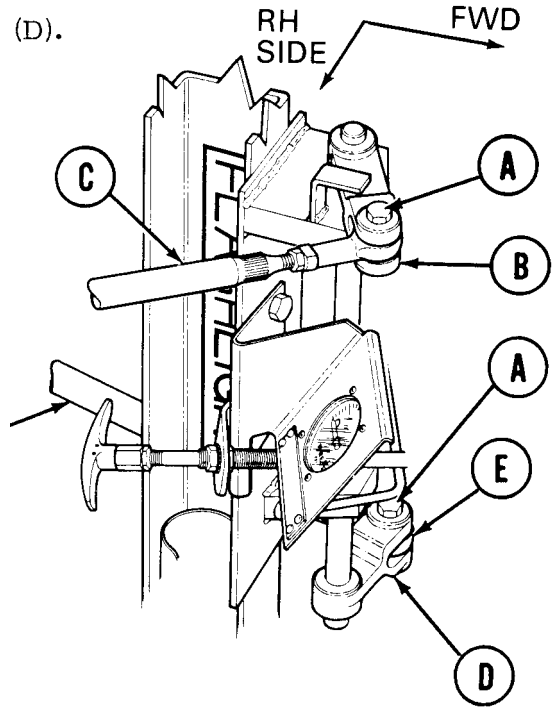
TA249632

STEERING CONTROL LEVER ASSEMBLY REPLACEMENT (Sheet 20 of 4)

REMOVAL:



1. Using 9/16 inch wrench, remove bolt (A) from lever (B).
2. Push rod (C) to one side.
3. Using 9/16 inch wrench, remove bolt (A) from (D).
4. Push rod (E) to one side.

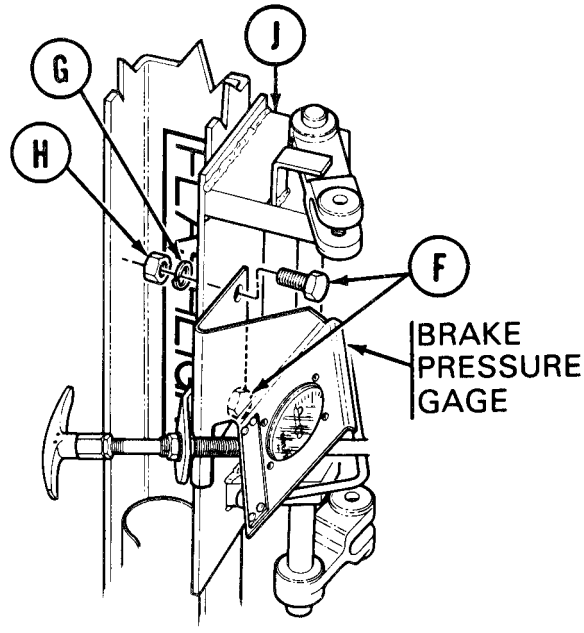


Go on to Sheet 3

TA249633

STEERING CONTROL LEVER ASSEMBLY REPLACEMENT (Sheet 30 of 4)

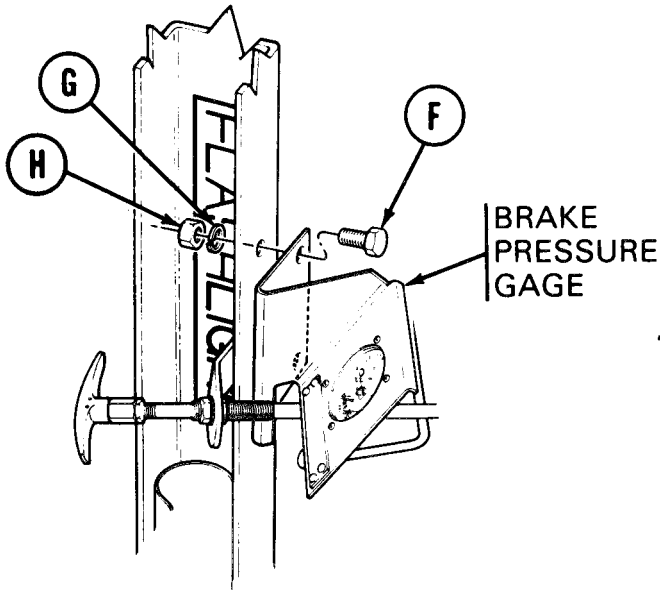
5. Using two 3/4 inch wrenches, remove two bolts (F), lockwashers (G), and nuts (H).



NOTE

Brake pressure gage is mounted in bracket and held by bolts (F). Support bracket when removing lever assembly (J).

6. Remove lever assembly (J).



7. Install one bolt (F), washer (G), and nut (H) finger tight to support gage bracket.

Go on to Sheet 4

TA249634

STEERING CONTROL LEVER ASSEMBLY REPLACEMENT (Sheet 4 of 4)

INSTALLATION:

1. Remove bolt (A), lockwasher (B), and nut (C) which support gage bracket.

NOTE

Tie up bracket to support it while lever assembly is being installed.

2. Aline holes in lever assembly (D) with holes in vertical support.

3. Using two 3/4 inch wrenches, install two bolts (A), lockwashers (B), and nuts (C) through gage bracket, lever assembly (D), and vertical support.

4. Aline end of rod (E) in lever (F).

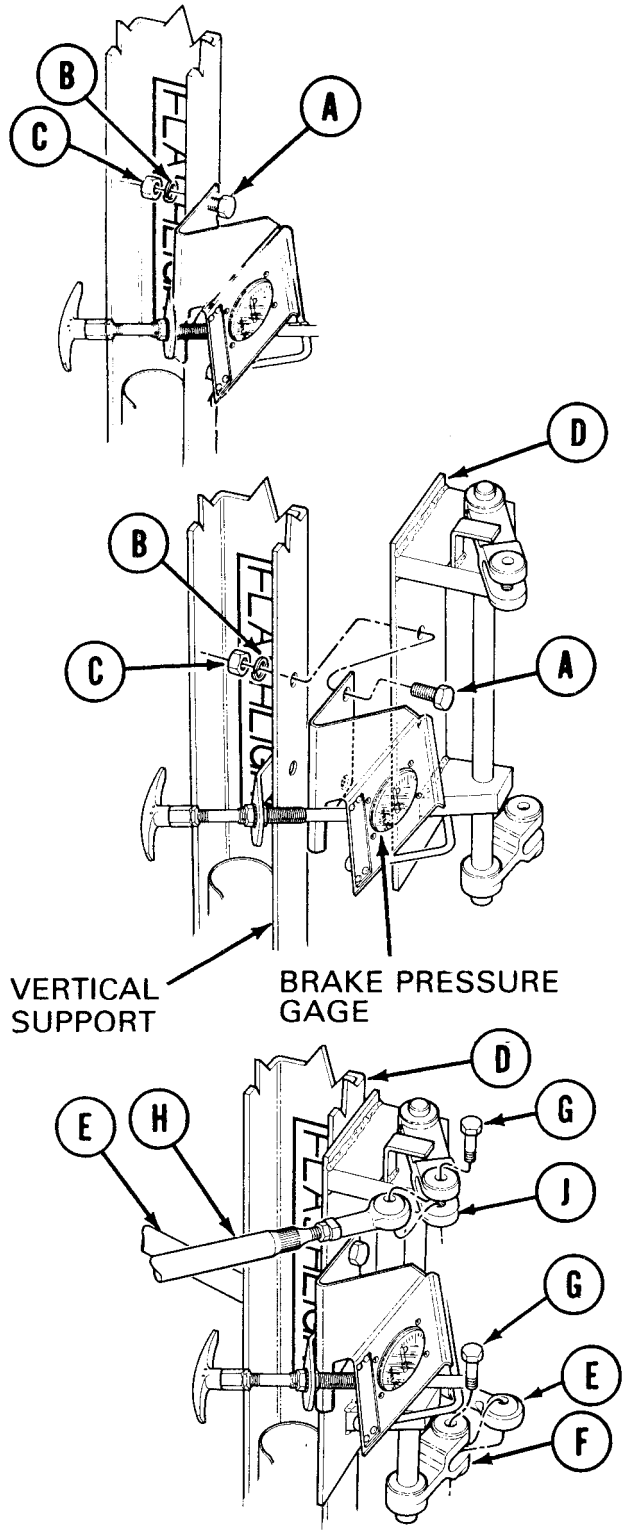
5. Using 9/16 inch wrench, install bolt (G) in lever (F).

6. Aline end of rod (H) in lever (J).

7. Using 9/16 inch wrench, install bolt (G) in lever (J).

8. Test operation of lever assembly (D) linkage (TM 5-5420-202-10).

End of Task



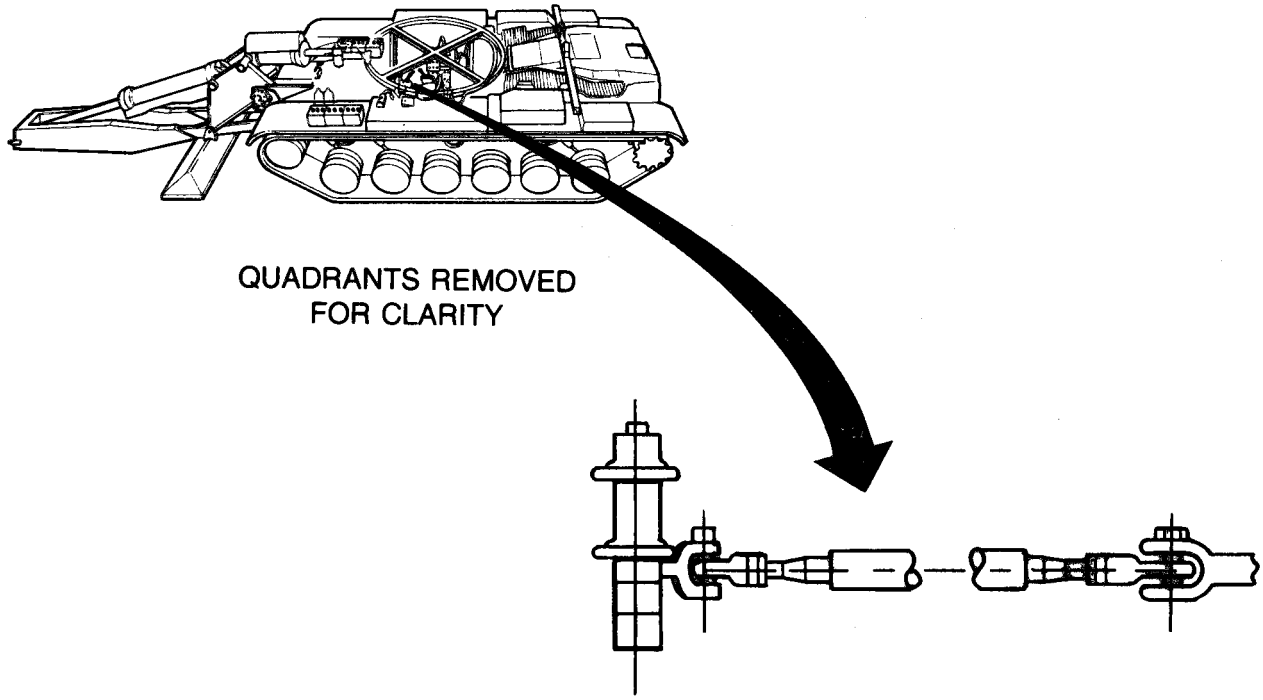
TA249635

FRONT STEERING CONTROL TUBE REPLACEMENT (Sheet 1 of 3)

TOOLS: 9/16 in. combination box open end wrench (2 required)
Steel tape
Torque wrench with 3/8 in. drive (0-200 lb-in)
9/16 in. crowfoot adapter with 3/8 in. drive

SUPPLIES: Paper (Item 72, Appendix D)
Pencil (Item 71, Appendix D)

REFERENCE: TM 5-5420-202-10

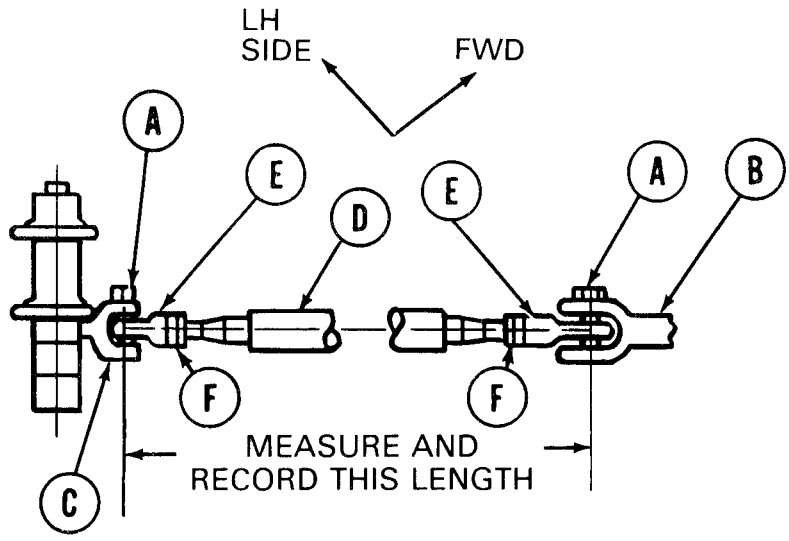


Go on to Sheet 2

TA249636

FRONT STEERING CONTROL TUBE REPLACEMENT (Sheet 2 of 3)

REMOVAL:



1. Using 9/16 inch wrench, remove bolt (A) from link (B).

2. Using 9/16 inch wrench, remove bolt (A) from lever (C).

3. Remove tube (D).

4. Using steel rule, measure center-to-center distance of holes in rod ends (E).

5. Using pencil and paper, write down center-to-center distance.

6. Using 9/16 inch wrench to hold rod ends (E), use 9/16 inch wrench to loosen jamnuts (F).

7. Using 9/16 inch wrench, remove rod ends (E) and jamnuts (F).

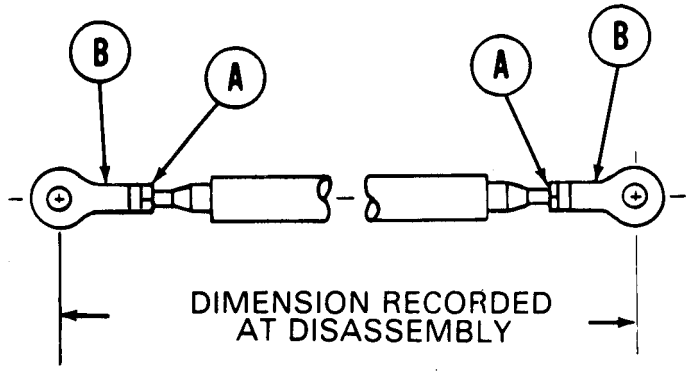
Go on to Sheet 3

TA249637

FRONT STEERING CONTROL TUBE REPLACEMENT (Sheet 3 of 3)

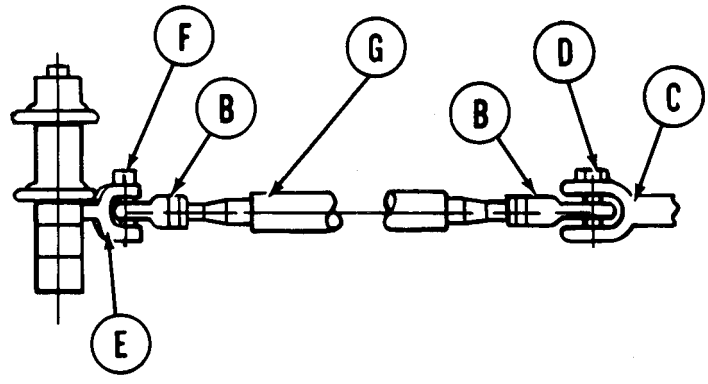
INSTALLATION:

1. Using 9/16 inch wrench, install jamnuts (A) and rod ends (B) on rod.
2. Using steel tape, measure between centers of holes in rod ends (B).
3. Using 9/16 inch wench, turn rod ends (B) until recorded measurement is obtained.
4. Using torque wrench and crowfoot adapter, tighten jamnut (A) against rod ends (B) to a minimum torque of 192 lb-in. (22 N.m).



5. Aline rod end (B) in link (C).
6. Using 9/16 inch wrench, install bolt (D) in link (C).
7. Aline other rod end (B) in lever (E).
8. Using 9/16 inch wrench, install bolt (F) in lever (E).
9. Test operation of front steering control tube (G) in linkage (TM 5-5420-202-10).

End of Task



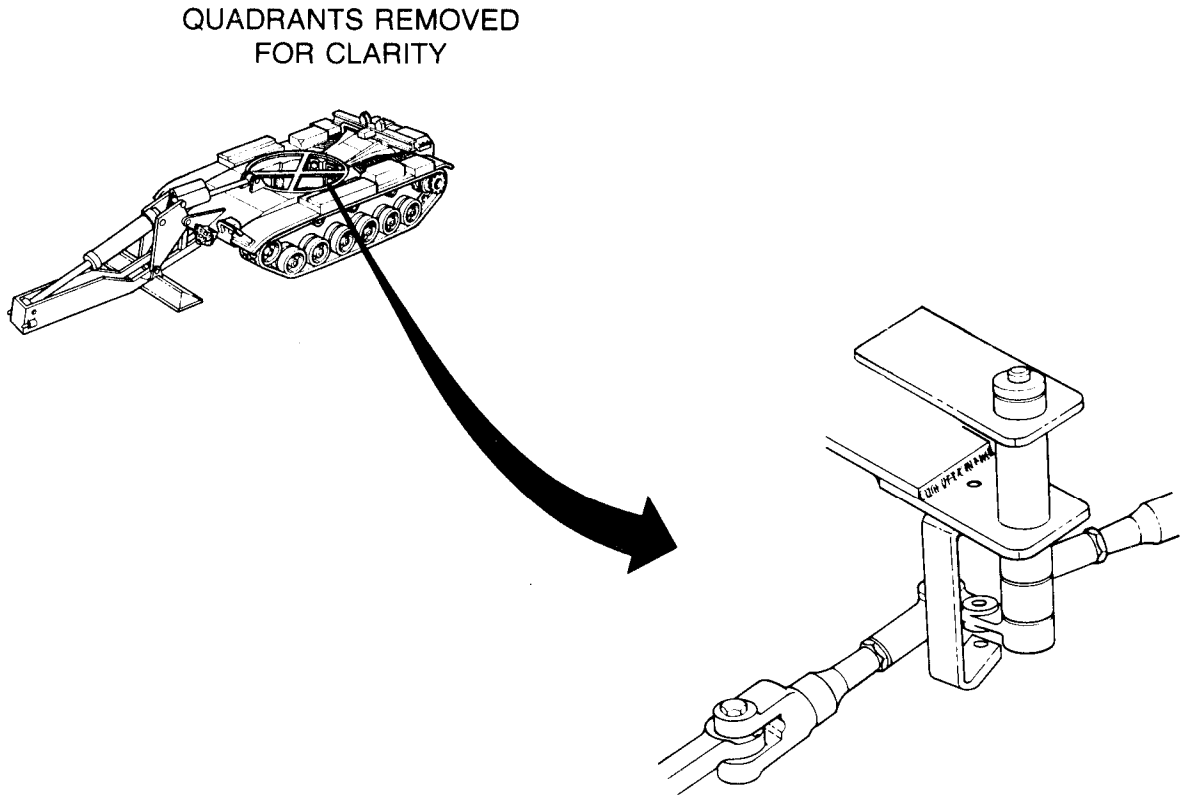
TA249638

STEERING CONTROL CLEVIS AND STUD REPLACEMENT (Sheet 1 of 3)

TOOLS: 9/16 in. combination box open end wrench (2 required)
Rule
Torque wrench with 3/8 in. drive (0-200 lb. in.)
9/16 in. crowfoot adapter with 3/8 in. drive

SUPPLIES: Paper (Item 72, Appendix D)
Pencil (Item 71, Appendix D)

REFERENCE: TM 5-5420-202-10

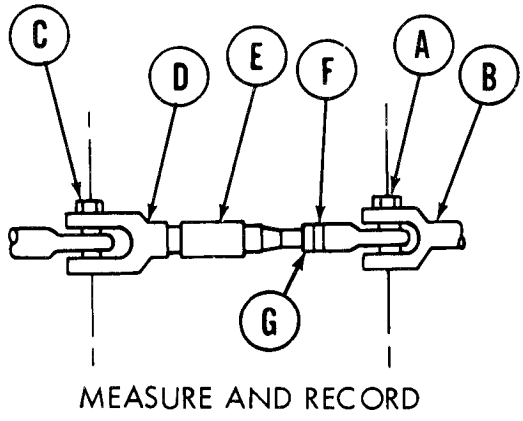


Go on to Sheet 2

TA249639

STEERING CONTROL CLEVIS AND STUD REPLACEMENT (Sheet 2 of 3)

REMOVAL:



1. Using 9/16 inch wrench, remove bolt (A) from link (B).
2. Using 9/16 inch wrench, remove bolt (C) from clevis (D).
3. Remove rod (E).
4. Using rule, measure center to center distance of holes in rod end (F) and clevis (D).
5. Using pencil and paper, write down center to center distance.
6. Using 9/16 inch wrench to hold rod end (F), use another 9/16 inch wrench to loosen jamnut (G).

   Using 9/16 inch wrench, remove rod end (F) and jamnut (G).

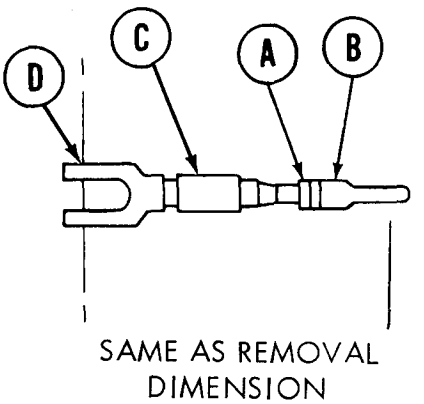
Go on to Sheet 3

TA249640

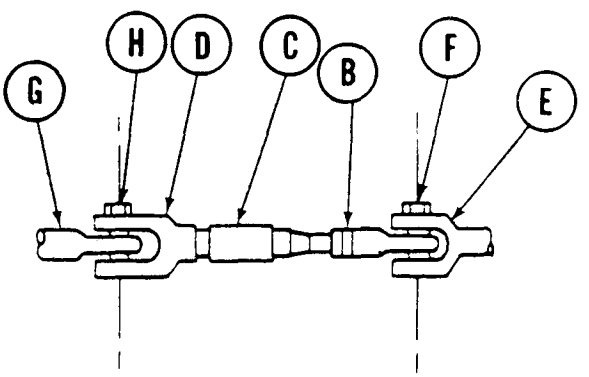
STEERING CONTROL CLEVIS AND STUD REPLACEMENT (Sheet 3 of 3)

INSTALLATION:

1. Using 9/16 inch wrench, install jamnut (A) and rod end (B) on rod (C).
2. Using steel tape, measure between center of hole in rod end (B) and center of hole in clevis (D).
3. Using 9/16 inch wrench, turn rod end (B) to obtain same dimension recorded at removal.
4. Using torque wrench and crowfoot adapter, tighten jamnut (A) against rod end (B) to a minimum torque of 16-18 lb-in. (21.7-24.4 N.m).



5. Aline rod end (B) in link (E).
6. Using 9/16 inch wrench, install bolt (F) in link (E).
7. Aline rod end (G) in clevis (D).
8. Using 9/16 inch wrench, install bolt (H) in clevis (D).
9. Test operation of clevis (D) and rod (C) linkage (TM 5-5420-202-10).



End of Task

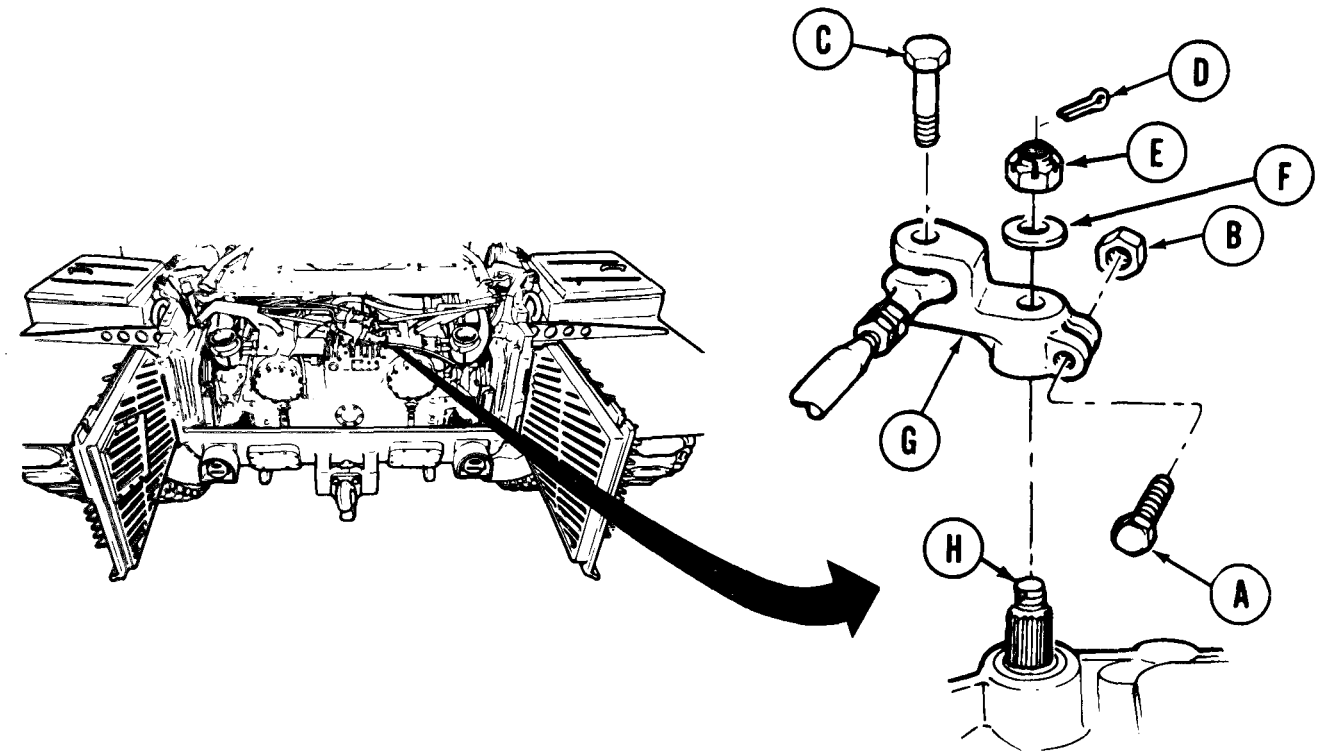
TA249641

STEERING CONTROL TO TRANSMISSION SHAFT CONNECTING LINK REPLACEMENT (Sheet 1 of 2)

TOOLS: Torque wrench with l/2in. drive (0-175 lb-ft)
Slip joint pliers
9/16 in. socket with 1/2 in. drive
9/16 in. open end wrench (2 required)

SUPPLIES: Cotter pin

PRELIMINARY PROCEDURES: Remove transmission shroud (page 9-2)
Remove top deck (page 16-21)



REMOVAL:

1. Using wrenches on bolt (A) and nut (B), remove nut (B) and bolt (A).
2. Using wrench on screw (C), remove screw (C).
3. Using pliers, remove cotter pin (D).
4. Using wrench on nut (E), remove nut (E) and washer (F).
5. Remove link (G) from transmission stud (H).

Go on to Sheet 2

TA249642

STEERING CONTROL TO TRANSMISSION SHAFT CONNECTING LINK REPLACEMENT (Sheet 2 of 2)

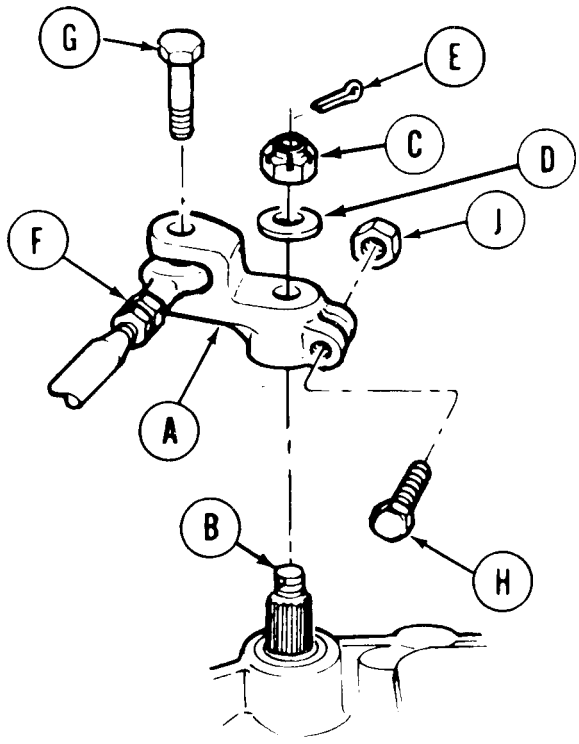
INSTALLATION:

1. Position link (A) over stud (B) with blind splines alined.
2. Using wrench, install nut (C) and washer (D) on stud (B). Using socket and torque wrench, tighten nut (C) to 15-20 lb-ft (20-27 N.m).

   Using pliers, install cotter pin (E) through nut (C) and stud (B).

4. Position rod end (F) in link (A).
5. Using wrench, install screw (G). Using socket and torque wrench, tighten screw (G) to 15-20 lb-ft (20-27 N.m).
6. Using socket and wrench on bolt (H) and nut (J), install bolt (H) and nut (J) on link (A).
7. Install transmission shroud (page 9-6).

   Install top deck (page 16-23).



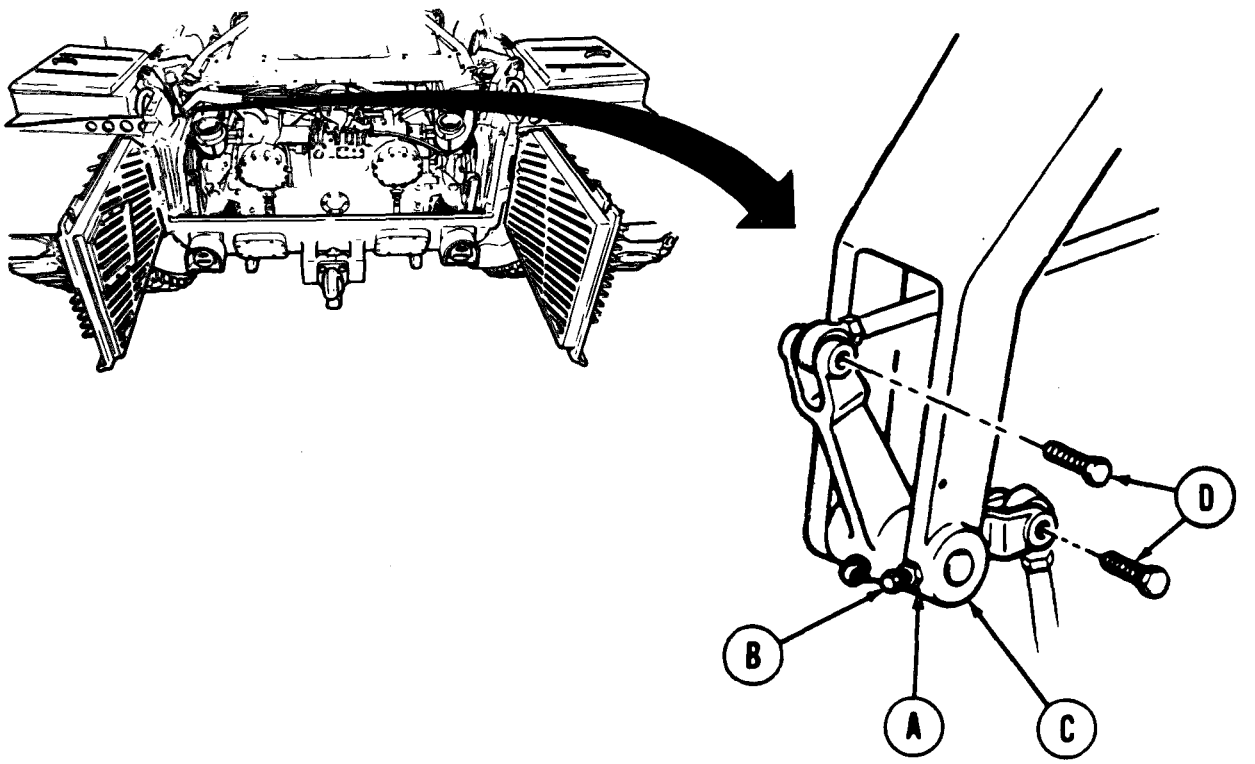
End of Task

TA249643

LINK ASSEMBLY REPLACEMENT (Sheet 1 of 3)

TOOLS: 1/4 in. pin punch
9/16 in. socket with 1/2 in. drive
7/16 in. open end wrench
Hammer
Ratchet with 1/2 in. drive
Torque wrench with 1/2 in. drive (0-175 lb-ft)
3/8 in. open end wrench
1/8 in. allen wrench

PRELIMINARY PROCEDURES: Remove transmission shroud (page 9-2)
Remove top deck (page 16-21)



REMOVAL:

1. Using 7/16 inch wrench, loosen locknut (A).
2. Using allen wrench, remove setscrew (B) and nut (A) from connecting bracket (C).
3. Using 9/16 inch socket, remove two bolts (D).

Go on to Sheet 2

TA249644

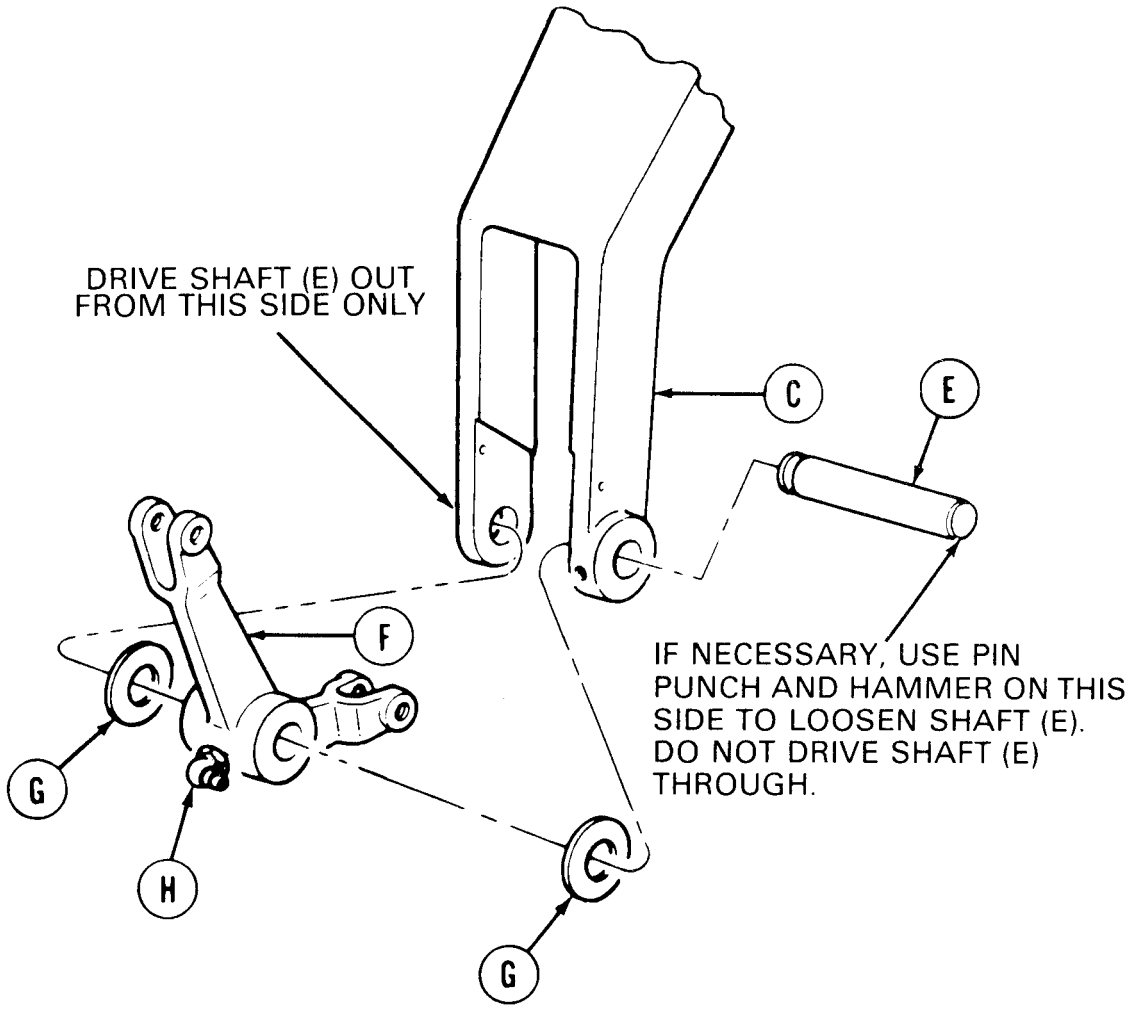
LINK ASSEMBLY REPLACEMENT (Sheet 2 of 3)

4. Using hammer and pin punch, remove shaft (E) from bracket (C) and link (F).

CAUTION

Support link (F) with free hand to prevent link (F) from falling under transmission.

5. Remove link (F) and washers (G) from bracket (C).



6. Using 3/8 inch open end wrench, remove grease fitting (H) from link (F).

Go on to Sheet 3

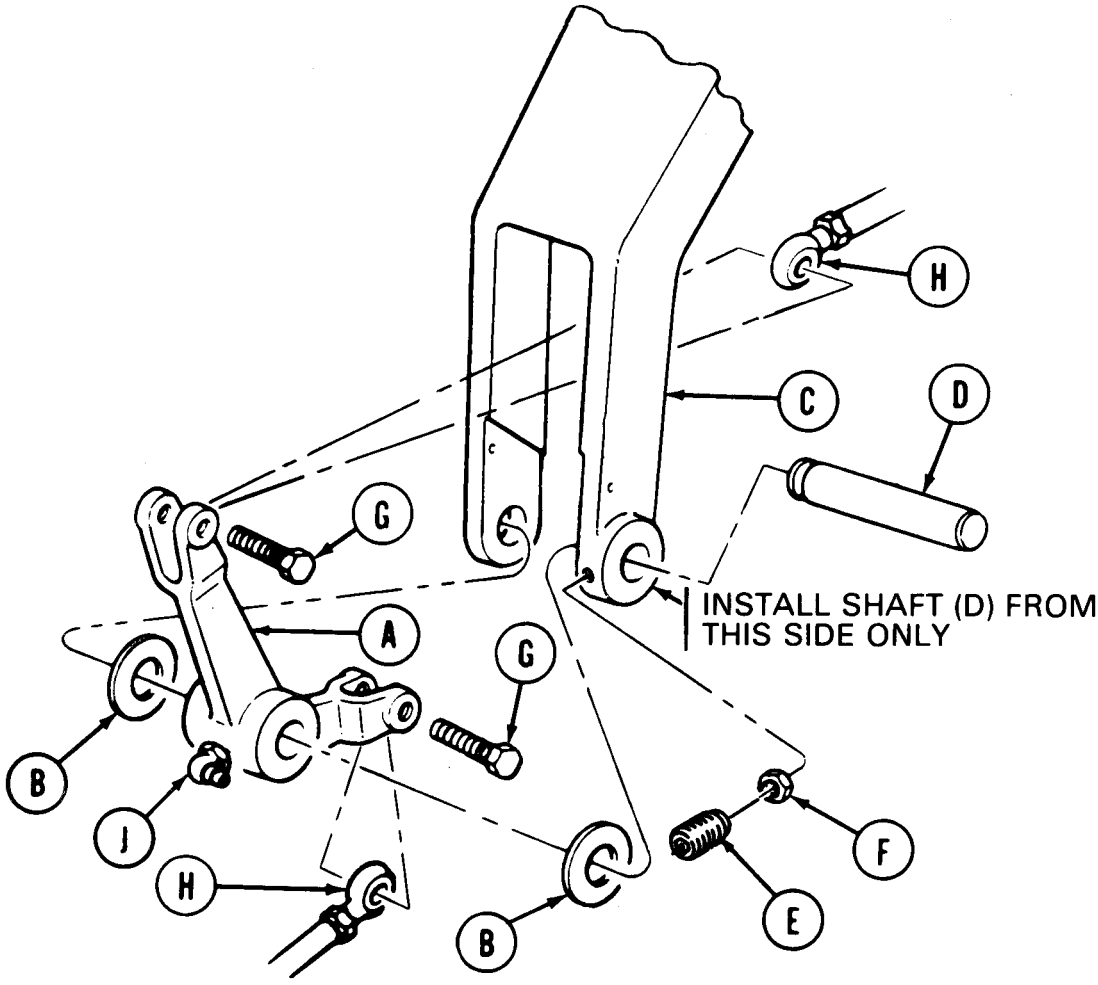
TA249645

LINK ASSEMBLY REPLACEMENT (Sheet 3 of 3)

INSTALLATION:

1. Position link (A) and two washers (B) mounting bracket (C).

2. Using hammer, drive shaft (D) through bracket (C), washers (B), and link (A) until shaft (D) is flush with bracket (C).



3. Using allen wrench, install setscrew (E) and nut (F) into bracket (C). Using 7/16 inch wrench to hold nut (F), tighten setscrew (E) into groove of shaft (D). Tighten nut (F) against bracket (C).

4. Using 9/16 inch socket, install two bolts (G) through link (A) and rod end bearings (H). Using torque wrench, tighten bolts (G) to 15-30 lb-ft (22-27 N.m).

5. Using 3/8 inch wrench, install grease fitting (J) into link (A).

6. Install transmission shroud (page 9-6).

7. Install top deck (page 16-23).

End of Task

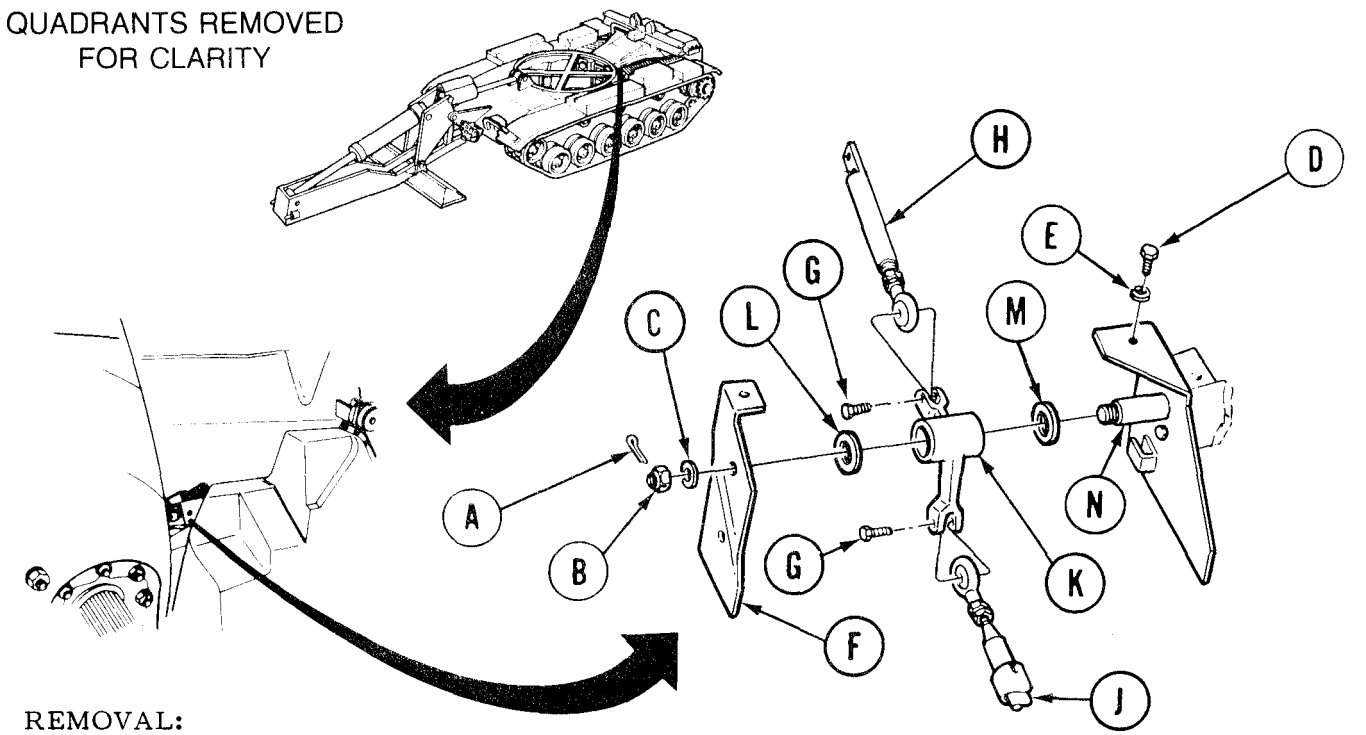
TA249646

CONNECTING LINK REPLACEMENT (Sheet 1 of 2)

TOOLS: Pliers, slip joint
7/16 in. box wrench
3/4 in. box wrench
9/16 in. box wrench

SUPPLIES: Cotter pin

PRELIMINARY PROCEDURE: Remove powerplant (page 5-2)



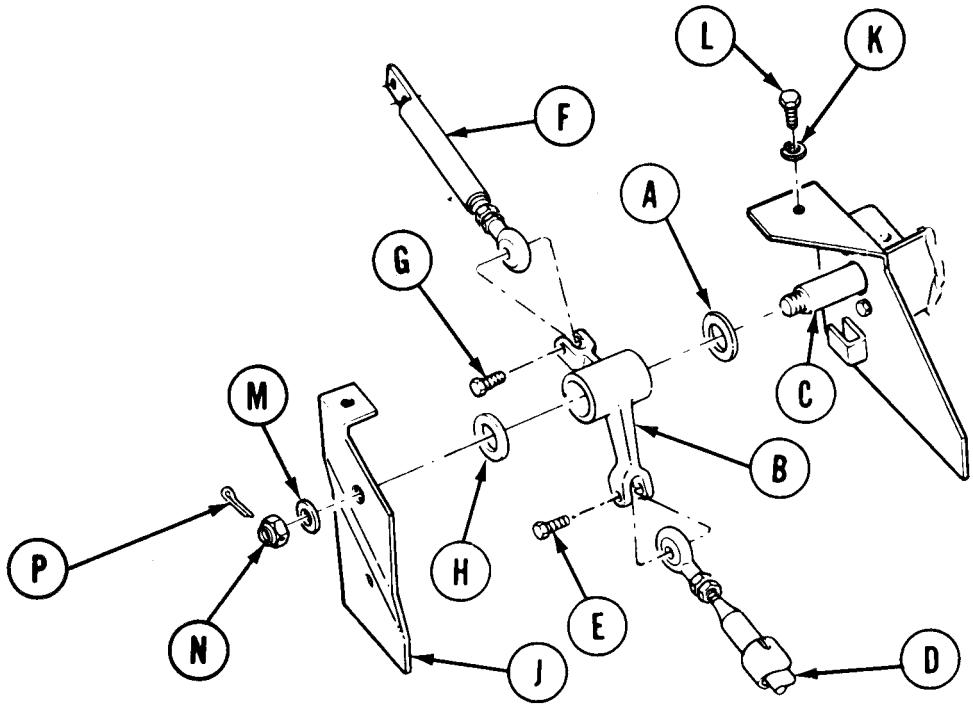
REMOVAL:

1. Using pliers, remove cotter pin (A).
2. Using 3/4 inch wrench, remove nut (B) and washer (C).
3. Using 7/16 inch wrench, remove screw (D) and washer (E).
4. Remove shield (F).
5. Using 9/16 inch wrench, remove two bolts (G) from connecting rods (H) and (J).
6. Remove connecting rods (H) and (J) from link (K).
7. Using hands, remove washer (L), connecting link (K), and washer (M) from shaft (N).

Go on to Sheet 2

TA249647

CONNECTING LINK REPLACEMENT (Sheet 2 of 2)



INSTALLATION:

1. Position washer (A) and connecting link (B) onto shaft (C).
2. Position connecting rod (D) onto clevis of connecting link (B) and secure with bolt (E).
3. Install connecting rod (F) onto connecting link (B) and secure with bolt (G).
4. Using 9/16 inch wrench, tighten bolts (E and G).
5. Install washer (H) and shield (J) onto shaft (C) and, using 7/16 inch wrench, install and secure washer (K) and screw (L) into shield (J).
6. Using 3/4 inch wrench, install and secure washer (M) and nut (N).
7. Using pliers, install cotter pin (P).
8. Install powerplant (page 5-14).

End of Task

TA249648

ROD END REPLACEMENT (Sheet 1 of 1)

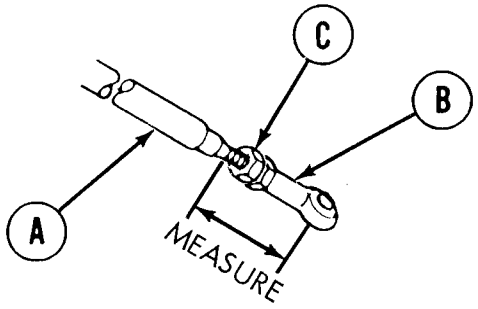
TOOLS: 9/16 in. open end wrench (2 required)
Ruler

SUPPLIES: Pencil (Item 71, Appendix D)
Paper (Item 72, Appendix D)

REFERENCE: TM 5-5420-202-10

REMOVAL:

1. Using ruler, measure from beginning of threads on rod (A) to center of hole in rod end (B). Write down this measurement.
2. Using pencil and paper, note whether rod end (B) is parallel or perpendicular to hull floor.
3. Holding rod end (B) with 9/16 inch wrench, use 9/16 inch wrench to loosen nut (C).
4. Using 9/16 inch wrench, remove rod end (B).



INSTALLATION:

1. Using 9/16 inch wrench, install rod end (B) on rod (A) in original position, either parallel or perpendicular to hull floor. Turn rod end (B) onto rod (A) until the measurement taken during removal is obtained.
2. Using two 9/16 inch wrenches, tighten nut (C) to rod end (B).
3. Check steering operation (TM 5-5420-202-10).

End of Task

TA249649

STEERING CONTROL BRACKET REPLACEMENT (Sheet 1 of 2)

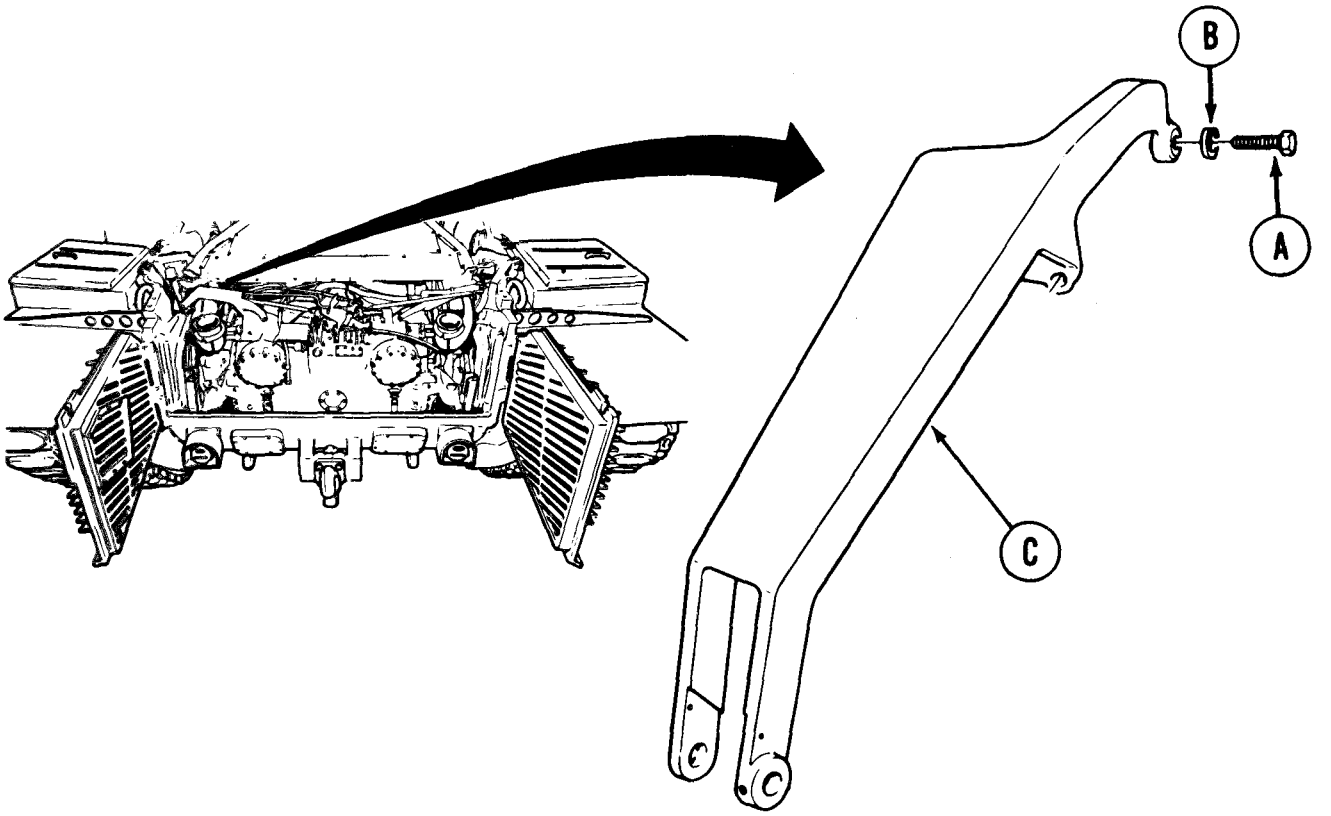
TOOLS: 3/4 in. socket with 1/2 in. drive
1/2 in. drive ratchet
3/4 in. open end wrench
1/2 in. drive hinged handle

SUPPLIES: Lockwashers (2 required)

PRELIMINARY PROCEDURES: Remove link assembly (15-24).

REMOVAL:

1. Using 3/4 inch open end wrench, remove one screw (A) and washer (B) holding bracket (C) to transmission.



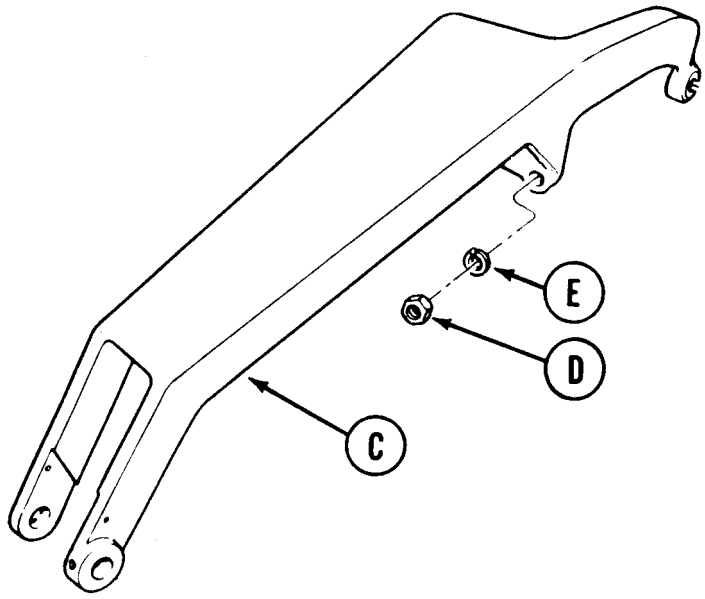
Go on to Sheet 2

TA249650

STEERING CONTROL BRACKET REPLACEMENT (Sheet 2 of 2)

2. Using 3/4 inch socket, remove two nuts (D) and lockwashers (E) holding bracket (C) to transmission.

3. Remove bracket (C) from transmission.



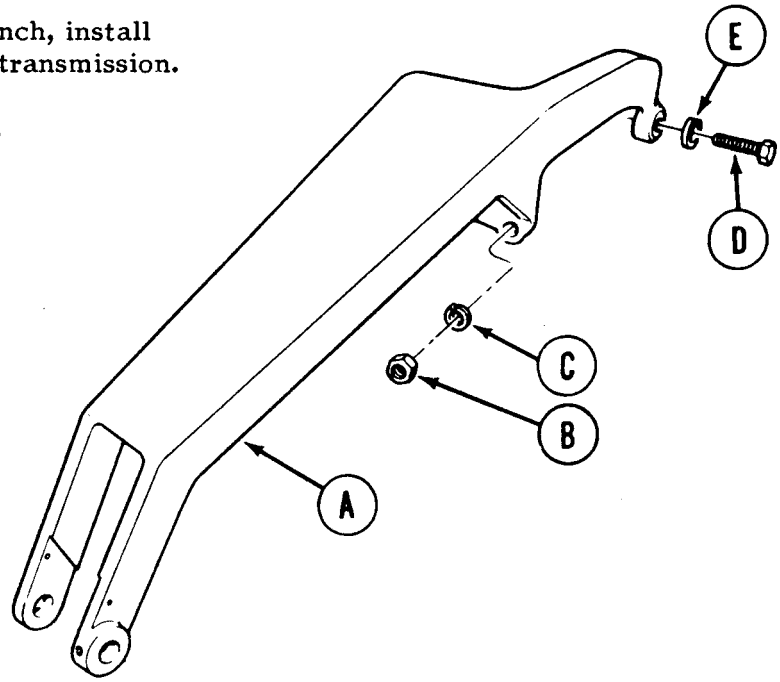
INSTALLATION:

1. Using 3/4 inch socket, install bracket (A) to transmission with two nuts (B) and lockwashers (C).

2. **Using 3/4 inch open end wrench, install screw (D) and washer (E) to transmission.**

3. Install link assembly (15-25).

End of Task

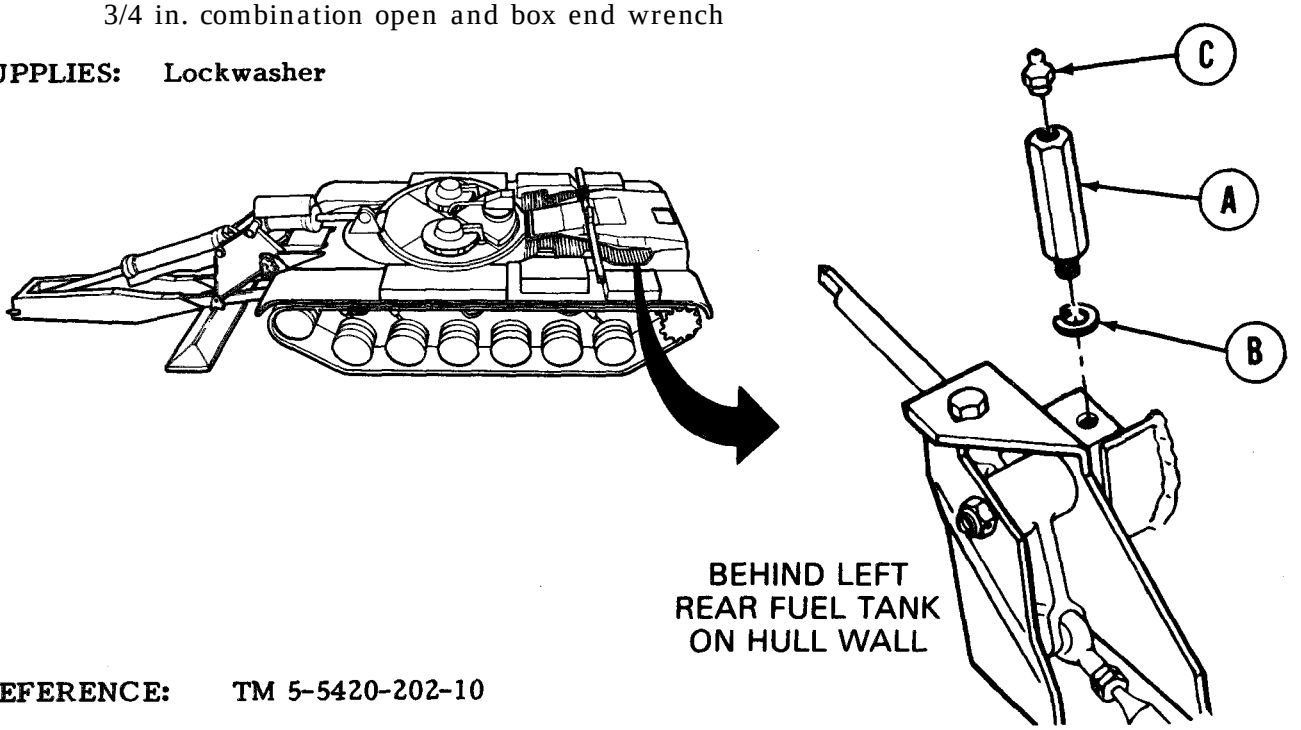


TA249651

STEER ING CONTROL EXTENSION STUD REPLACEMENT (Sheet 1of 2)

TOOLS: 3/4 in. socket with 1/2 in. drive (deep well)
5/16 in. combination open and box end wrench
Ratchet with 1/2 in. drive
10 in. extension with 1/2 in. drive
3/4 in. combination open and box end wrench

SUPPLIES: Lockwasher



REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURE: Open top left grille door (TM 5-5420-202-10)

REMOVAL:

1. Using 3/4 inch socket and extension, remove stud (A) and lockwasher (B).
2. Using 3/4 inch wrench to hold stud (A), use 5/16 inch wrench and remove fitting (C) from stud (A).

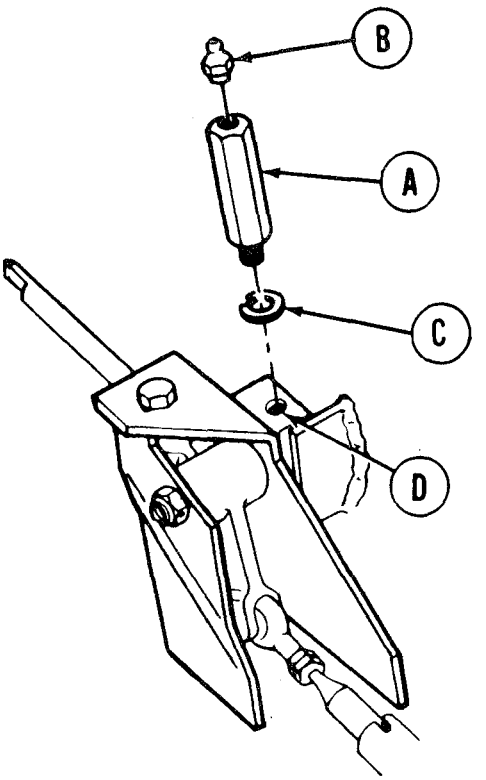
Go on to Sheet 2

TA249652

STEERING CONTROL EXTENSION STUD REPLACEMENT (Sheet 2 of 2)

INSTALLATION:

1. Using 3/4 inch wrench to hold stud (A), use 5/16 inch wrench and install fitting (B) into stud (A).
2. Position lockwasher (C) onto bracket (D) and, using 3/4 inch socket and extension, install stud (A) into bracket (D).
3. Close top left rear grille door (TM 5-5420-202-10).



End of Task

TA249653

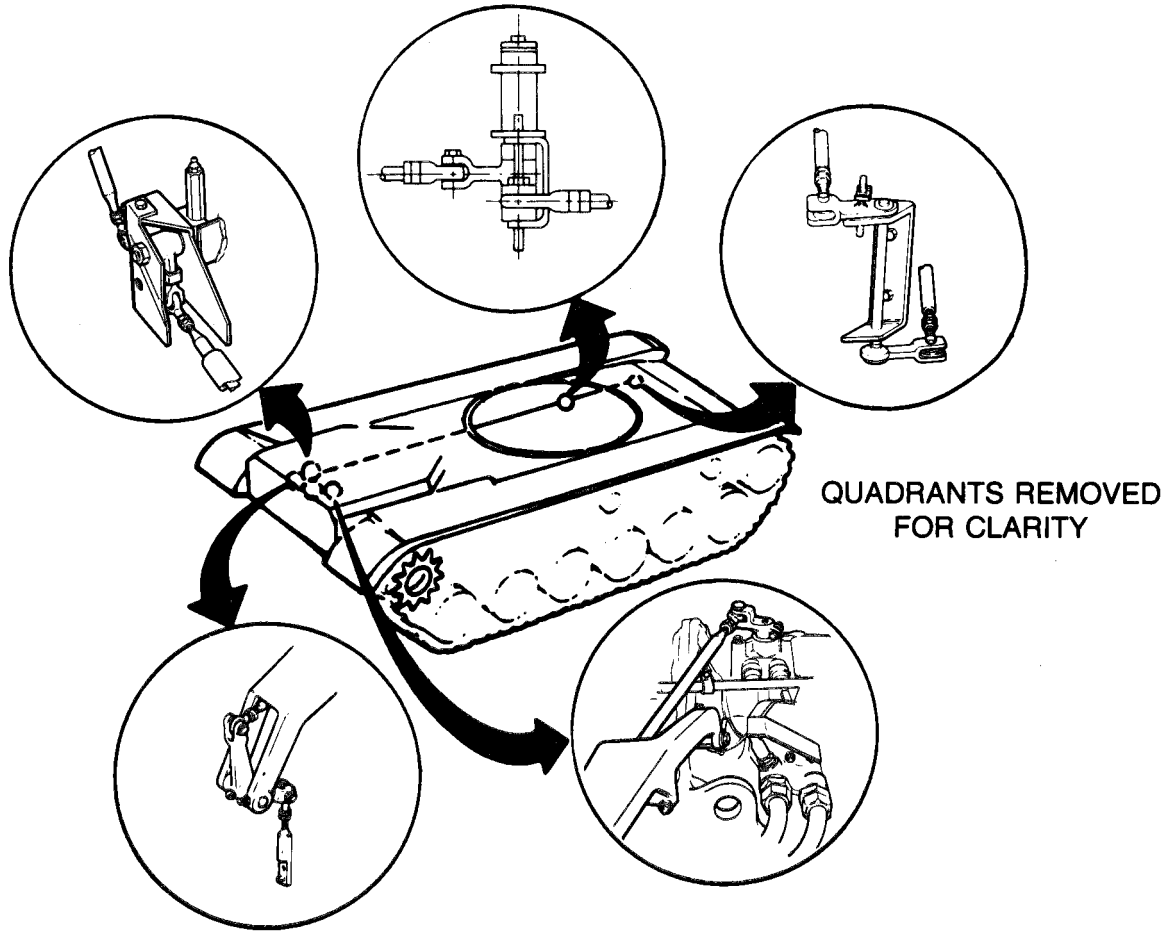
STEERING CONTROL LINKAGE ADJUSTMENT (Sheet 1 of 22)

TOOLS: 7/16 in. combination box and open end wrench
9/16 in. combination box and open end wrench (2 required)
3/4 in. combination box and open end wrench
Torque wrench with 1/2 in. drive (0-175 lb-ft)
9/16 in. socket with 1/2 in. drive
Needle nose pliers
9/16 in. crowfoot with 1/2 in. drive

SUPPLIES: Metal locating pins (4 required-1/8 in. by 2-1/2 in. long)
Metal pin (1/16 in. by 2 in. long)
Cotter pin
Small gage wire

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Adjust track tension (TM 5-5420-202-10)
Block tracks (TM 5-5420-202-10)
Remove transmission shroud (page 9-2)



Go on to Sheet 2

TA249654

STEERING CONTROL LINKAGE ADJUSTMENT (Sheet 2 of 22)

ADJUSTMENT:

NOTE

When the engine, transmission, or entire powerplant is exchanged in a vehicle, driver's steering control must be checked for centering and adjustment. If the vehicle centering and linkage adjustment was satisfactory before the new powerplant was installed, go to step 119.

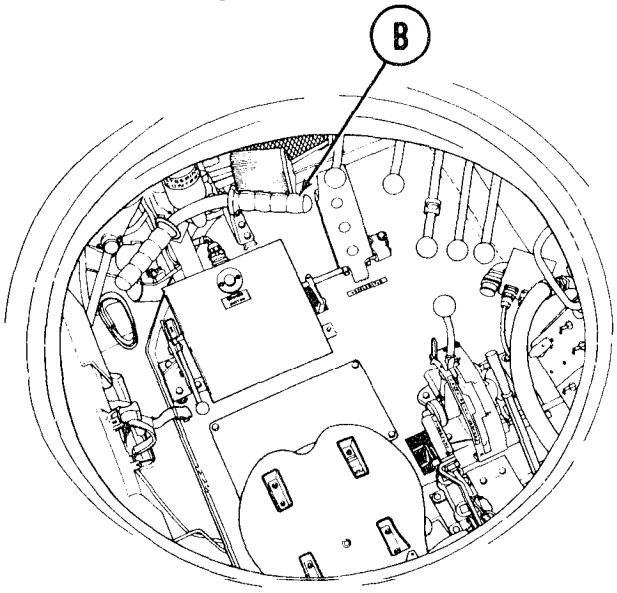
NOTE

Check to make sure rod end bearings are serviceable before proceeding with any linkage adjustments.

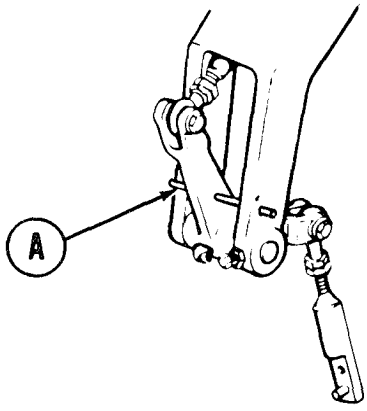
NOTE

It may be necessary to manually move link assembly before locating pin (P) can be inserted.

1. Insert locating pin (A).



DRIVER'S STATION



ENGINE COMPARTMENT

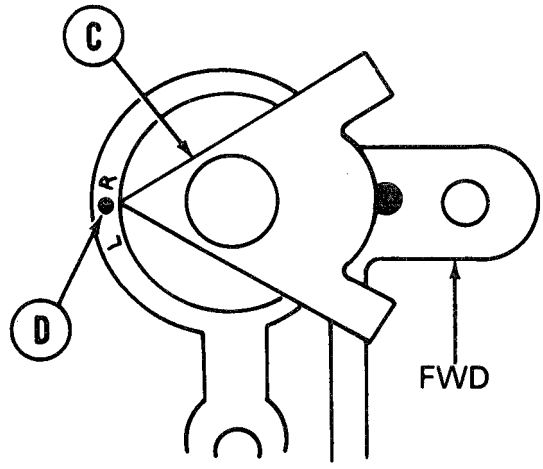
2. Check to see if driver's steering control (B) centers. If steering control (B) is centered, go on to step 3. If steering control (B) is not centered, go on to step

Go on to Sheet 3

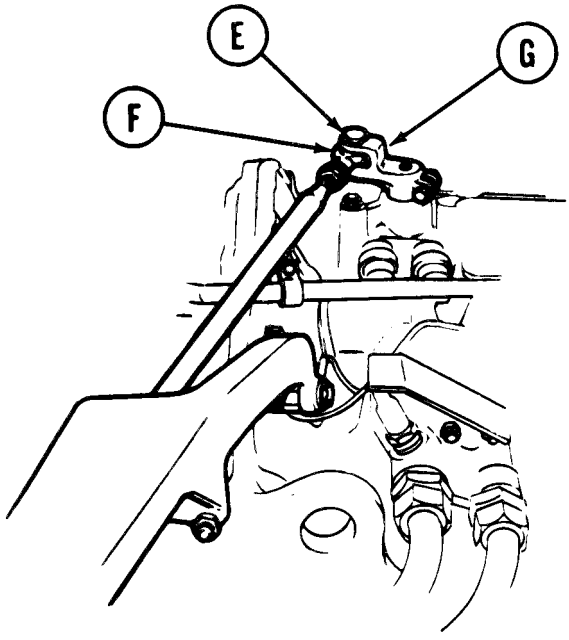
TA249655

STEERING CONTROL LINKAGE ADJUSTMENT (Sheet 3 of 22)

3. Check to make sure indicator (C) on top of transmission is pointing to index mark (D). If indicator (C) is pointing to index mark (D), notify support maintenance personnel If indicator (C) is not pointing to index mark (D), go on to step 4.



TOP OF TRANSMISSION



TOP OF TRANSMISSION

4. Using 9/16 inch wrench, remove screw (E).

5. Remove steering rod end (F) from clevis (G).

6. Make sure indicator (C) points to index mark (D). If indicator still does not point to index mark, notify support maintenance. If indicator does point to index mark, go on to step 7.

Go on to Sheet 4

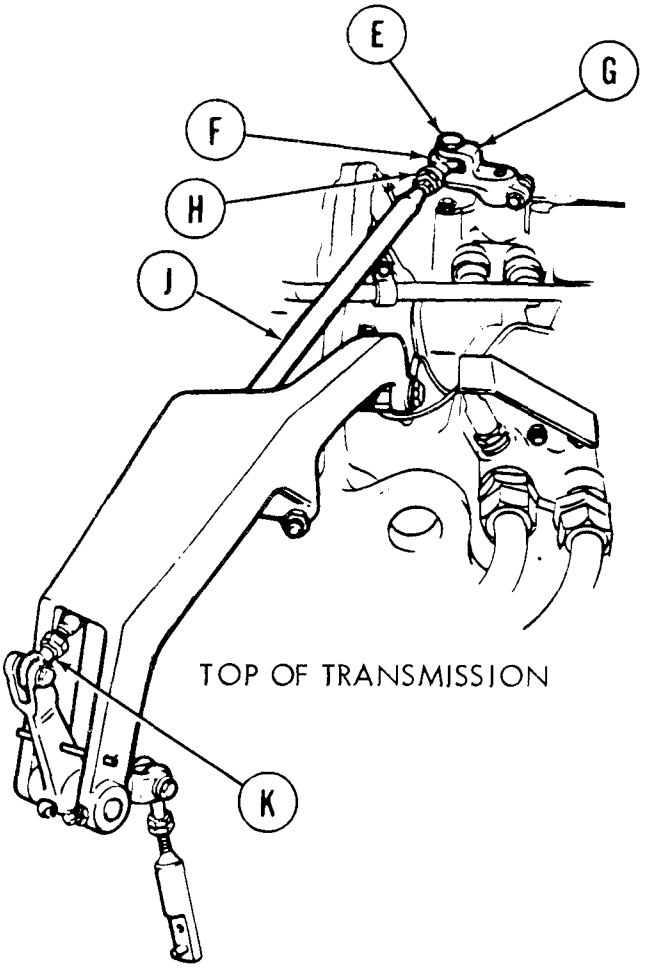
TA249656

STEERING CONTROL LINKAGE ADJUSTMENT (Sheet 4 of 22)

7. Using 9/16 inch wrench to hold steering rod end (F), use 9/16 inch wrench to loosen jamnut (H).

8. Using 9/16 inch wrench, adjust length of control rod (J) by turning steering rod end (F) clockwise or counterclockwise until screw (E) drops freely through clevis (G) and steering rod end (F).

9. Using small gage wire, check to see if control rod (J) is into steering rod ends (F) and (K) past witness holes. If control rod (J) is past witness holes in both steering rod ends (F) and (K), go on to step 24. I; control rod (J) is not past witness hole in steering rod end (K), go on to step 20. If control rod (J) is not past witness hole in steering rod end (F'), go on to step 10.



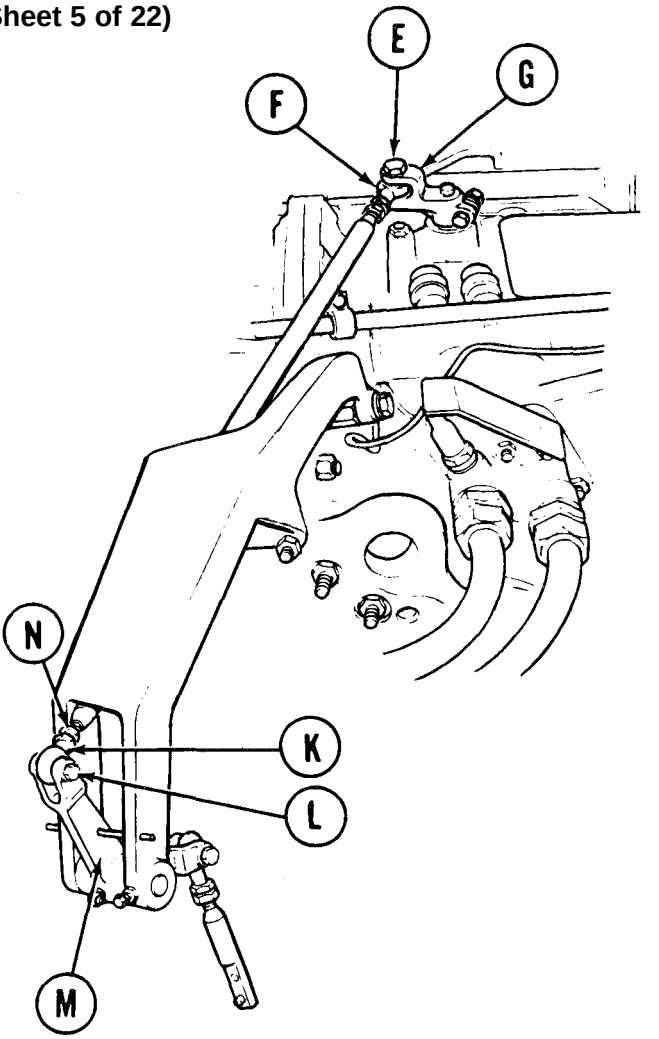
10. Using 9/16 inch wrench, turn steering rod end (F) clockwise until control rod (J) is just past witness hole in steering rod end (F).

11. Using 9/16 inch wrench to hold steering rod end (F), use 9/16 inch wrench to tighten jamnut (H).

Go on to Sheet 5

TA249657

STEERING CONTROL LINKAGE ADJUSTMENT (Sheet 5 of 22)



12. Using 9/16 inch wrench, remove screw (L).

13. Remove steering rod end (K) from link assembly (M).

14. Position steering rod end (F) in clevis (G) and using 9/16 inch wrench, install screw (E).

15. Using 9/16 inch socket and torque wrench, tighten screw (E) to 16 lb-ft (22 N.m).

16. Using 9/16 inch wrench to hold steering rod end (K), use 9/16 inch wrench to loosen jamnut (N).

17. Using 9/16 inch wrench, turn steering rod end (K) counterclockwise until screw (L) will pass freely through link assembly (M) and steering rod end (K).

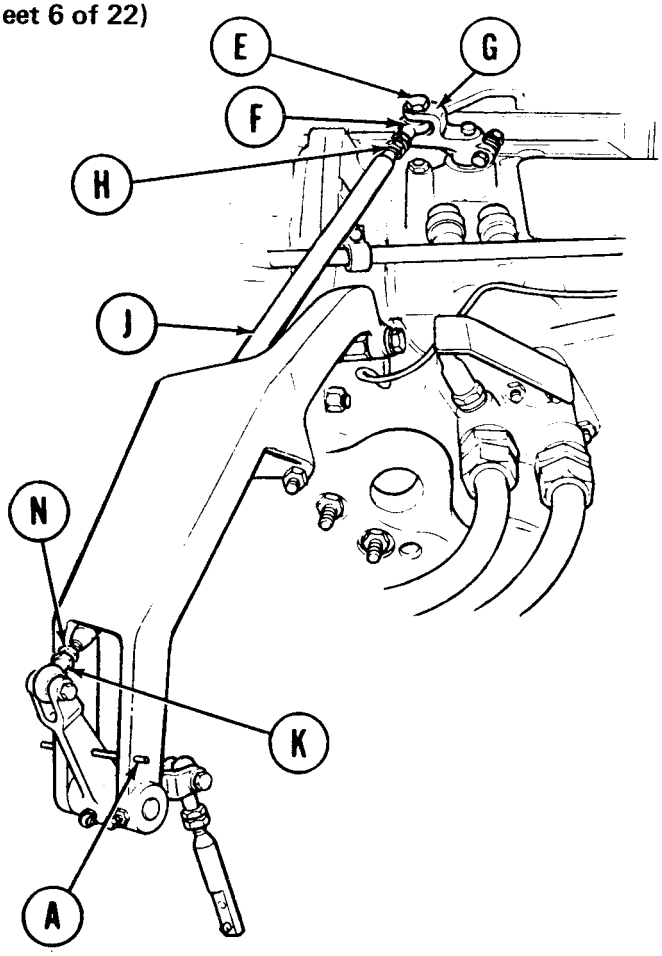
18. Using 9/16 inch wrench, install screw (L) through link assembly (M) and steering rod end (K). Using torque wrench, tighten screw (L) to 16 lb-ft (22 N.m).

19. Using 9/16 inch wrench to hold steering rod end (K), use 9/16 inch wrench to tighten jamnut (N) and go on to step 27.

Go on to Sheet 6

TA249658

STEERING CONTROL LINKAGE ADJUSTMENT (Sheet 6 of 22)



20. Using 9/16 inch wrench to hold steering rod end (K), use 9/16 inch wrench to loosen jarnnut (N).

21. Using hands, turn control rod (J) clockwise until control rod (J) is just past witness hole in steering rod end (K).

22. Using 9/16 inch wrench, to hold steering rod end (K), use 9/16 inch wrench to tighten jamnut (N).

23. Using 9/16 inch wrench, turn steering rod end (F) counterclockwise until screw (E) will drop freely through clevis (G) and steering rod end (F).

24. Using 9/16 inch wrench, install screw (E) through clevis (G) and steering rod end (F).

25. Using socket and torque wrench, tighten screw (E) to 16 lb-ft (22 N.m).

26. Using 9/16 inch wrench to hold steering rod end (F), use 9/16 inch wrench to tighten jamnut (H).

27. Remove locating pin (A).

Go on to Sheet 7

TA249659

STEERING CONTROL LINKAGE ADJUSTMENT (Sheet 7 of 22)

NOTE

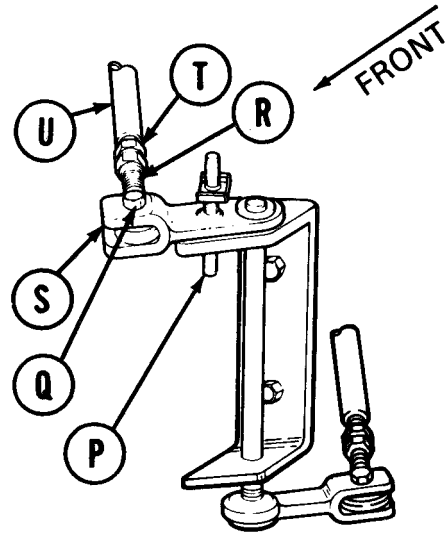
It may be necessary to manually move link assembly before locating pin (P) can be inserted.

28. Insert locating pin (P).

29. Check to see if driver's steering control is centered. If steering control is centered, go on to step 52. If steering control is not centered, go on to step 30.

30. Using 9/16 inch wrench, remove screw (Q).

31. Remove steering rod end (R) from clevis (S).



DRIVER'S STATION

32. Using 9/16 inch wrench to hold steering rod end (R), use 9/16 inch wrench to loosen jamnut (T).

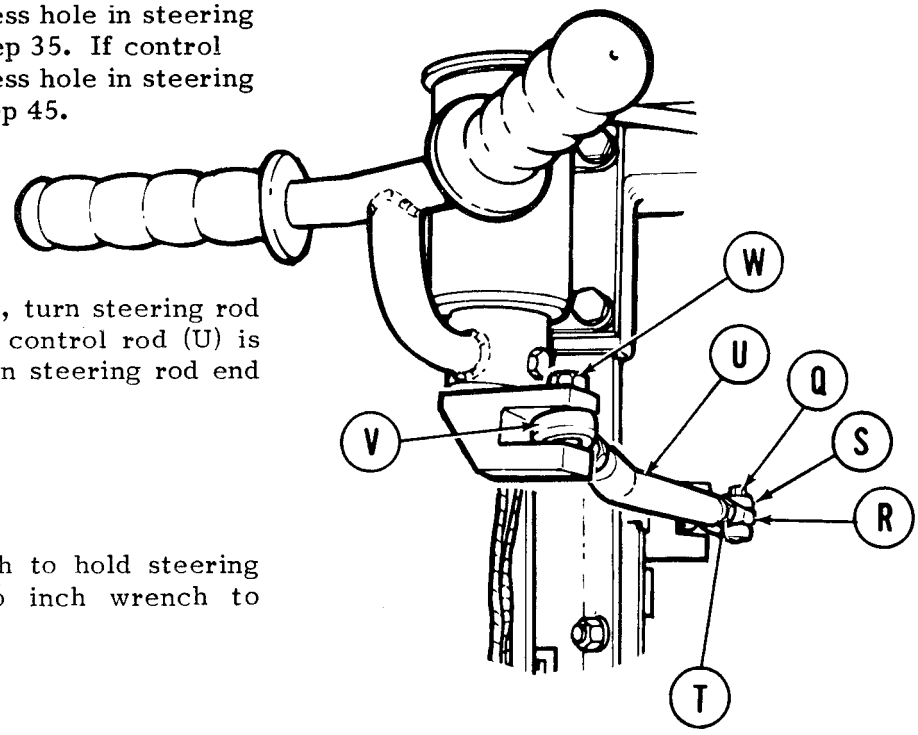
33. Using 9/16 inch wrench, adjust length of control rod (U) by turning steering rod end (R) clockwise or counterclockwise until screw (Q) will drop freely through clevis (S) and steering rod end (R) when steering control is centered.

Go on to step 8.

TA249660

STEERING CONTROL LINKAGE ADJUSTMENT (Sheet 8 of 22)

34. Using small gage wire, check to see if control rod (U) is into steering rod ends (R) and (V) past witness holes. If control rod (U) is past witness holes in both steering rod ends (R) and (V), go on to step 49. If control rod (U) is not past witness hole in steering rod end (R), go on to step 35. If control rod (U) is not past witness hole in steering rod end (V), go on to step 45.



35. Using 9/16 inch wrench, turn steering rod end (R) clockwise until control rod (U) is just past witness hole in steering rod end (R).

36. Using 9/16 inch wrench to hold steering rod end (R), use 9/16 inch wrench to tighten jamnut (T).

37. Using 9/16 inch wrench, remove screw (W).

38. Position steering rod end (R) in clevis (S) and using 9/16 inch wrench, install screw (Q).

39. Using socket and torque wrench, tighten screw (Q) to 16 lb-ft (22 N.m).

Go on to Sheet 9

TA249661

STEERING CONTROL LINKAGE ADJUSTMENT (Sheet 9 of 22)

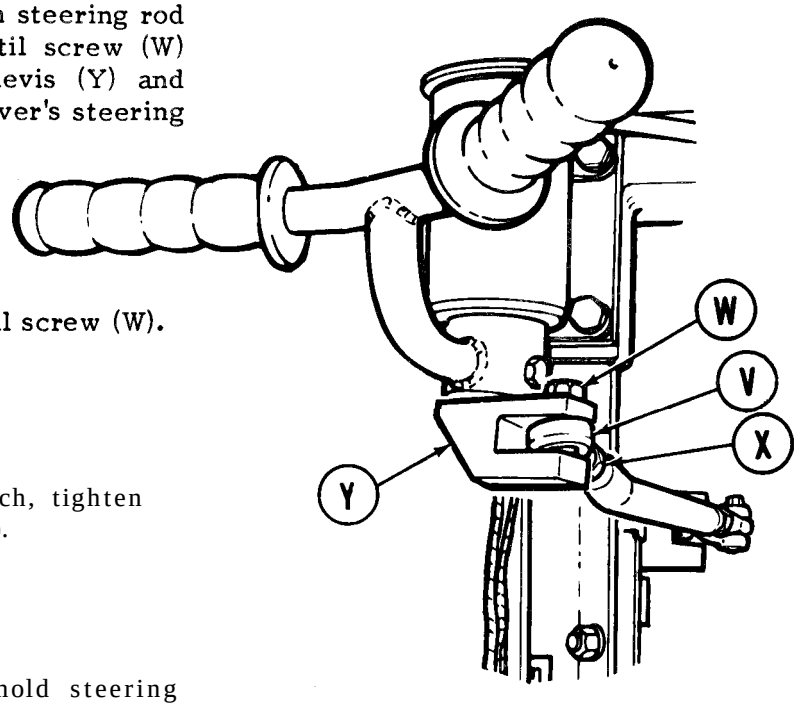
40. Using 9/16 inch wrench to hold steering rod end (V), use 9/16 inch wrench to loosen jamnut (X).

41. Using 9/16 inch wrench, turn steering rod end (V) counterclockwise until screw (W) will drop freely through clevis (Y) and steering rod end (V) when driver's steering control is centered.

42. Using 9/16 inch wrench install screw (W).

43. Using socket and torque wrench, tighten screw (W) to 16 lb-ft (22 N.m).

44. Using 9/16 inch wrench to hold steering rod end (V), use 9/16 inch wrench to tighten jamnut (X). Go on to step 52.



DRIVER'S STATION

45. Using 9/16 inch wrench to hold steering rod end (V), use 9/16 inch wrench to loosen jamnut (X).

Go on to Sheet 10

TA249662

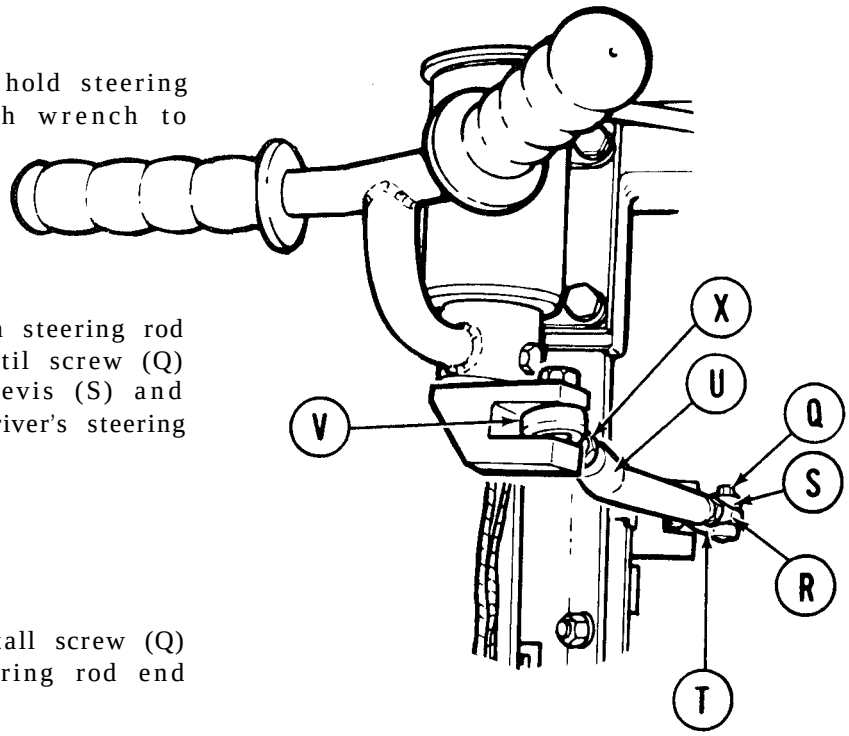
STEERING CONTROL LINKAGE ADJUSTMENT (Sheet 10 of 22)

46. Using hands, turn control rod (U) clockwise until control rod (U) is just past witness hole in steering rod end (V).

47. Using 9/16 inch wrench to hold steering rod end (V), use 9/16 inch wrench to tighten jamnut (X).

48. Using 9/16 inch wrench, turn steering rod end (R) counterclockwise until screw (Q) will drop freely through clevis (S) and steering rod end (R) when driver's steering control is centered.

49. Using 9/16 inch wrench, install screw (Q) through clevis (S) and steering rod end (R).



DRIVER'S STATION

50. Using socket and torque wrench, tighten screw (Q) to 16 lb-ft (22 N.m).

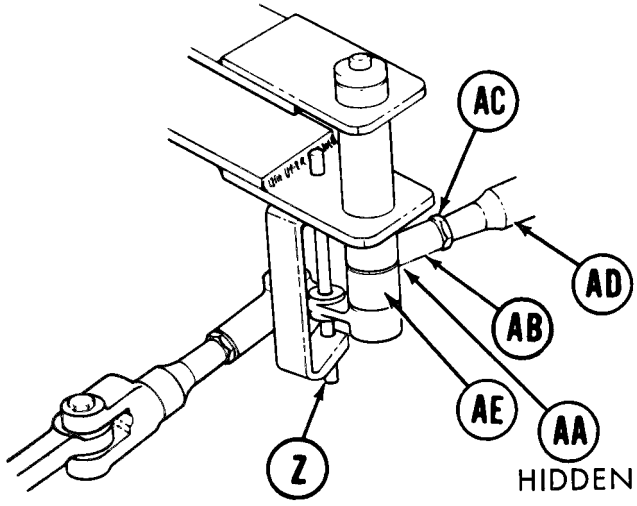
51. Using 9/16 inch wrench to hold steering rod end (R), use 9/16 inch wrench to tighten jamnut (T).

Go on to Sheet 11

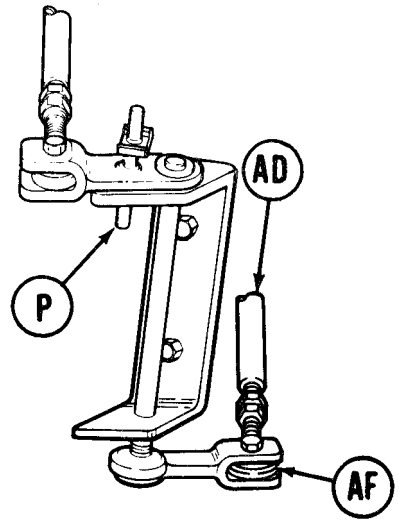
TA249663

STEERING CONTROL LINKAGE ADJUSTMENT (Sheet 11 of 22)

52. With locating pin (P) still installed, try to insert locating pin (Z). If locating pin (Z) can be inserted, go on to step 75. If locating pin (Z) cannot be inserted, go on to step 53.



LEFT OF DRIVER'S STATION



DRIVER'S STATION

53. Using 9/16 inch wrench, remove screw (AA).

54. Move link assembly and insert locating pin (Z).

55. Using 9/16 inch wrench to hold steering rod end (AB), use 9/16 inch wrench to loosen jamnut (AC).

56. Using 9/16 inch wrench, adjust length of control rod (AD) by turning steering rod end (AB) clockwise or counterclockwise until screw (AA) will drop freely through clevis (AE) and steering rod end (AB).

57. Using small gage wire, check to see if control rod (AD) is into steering rod ends (AB) and (AF) past witness holes. If control rod (AD) is past witness holes in both steering rod ends (AB) and (AF), go on to step 72. If control rod (AD) is not past witness holes in steering rod end (AB), go to step 58. If control rod (AD) is not past witness hole in steering rod end (AF) go on to step 68.

Go on to Sheet 12

TA249664

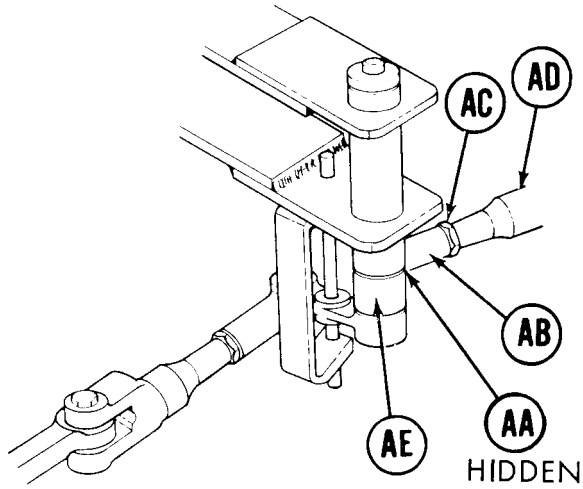
STEERING CONTROL LINKAGE ADJUSTMENT (Sheet 12 of 22)

58. Using 9/16 inch wrench, turn steering rod end (AB) clockwise until control rod (AD) is just past witness hole in steering rod end (AB).

59. Using 9/16 inch wrench to hold steering rod end (AB), use 9/16 inch wrench to tighten jamnut (AC).

60. Using 9/16 inch wrench, remove screw (AG).

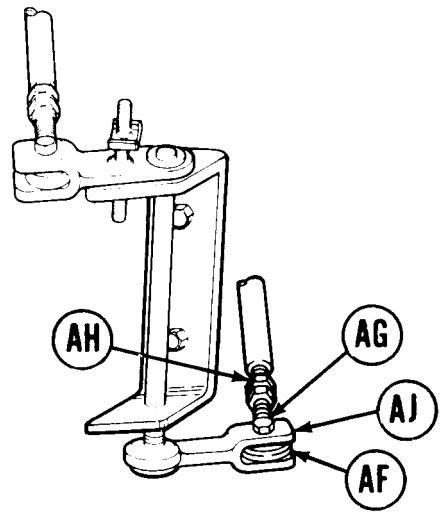
61. Position steering rod end (AB) in clevis (AE) and using 9/16 inch wrench, install screw (AA).



62. Using torque wrench and crowfoot, tighten screw (AA) to 16 lb-ft (22 N.m).

63. Using 9/16 inch wrench to hold steering rod end (AF), use 9/16 inch wrench to loosen jamnut (AH).

64. Using 9/16 inch wrench, turn steering rod end (AF) counterclockwise until screw (AG) will drop freely through clevis (AJ) and steering rod end (AF).



DRIVERS STATION

Go on to Sheet 13

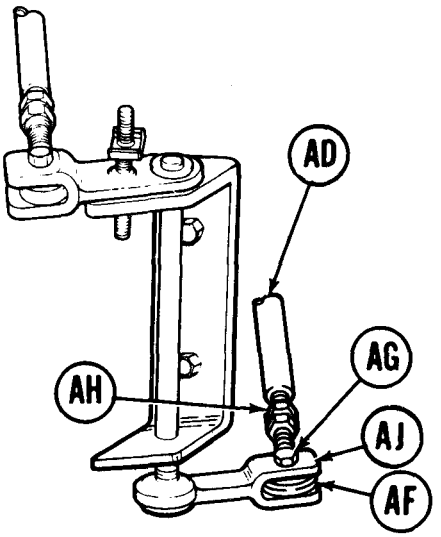
TA249665

STEERING CONTROL LINKAGE ADJUSTMENT (Sheet 13 of 22)

65. Using 9/16 inch wrench, install screw (AG) through clevis (AJ) and steering rod end (AF).

66. Using socket and torque wrench, tighten screw (AG) to 16 lb-ft (22 N.m).

67. Using 9/16 inch wrench to hold steering rod end (AF), use 9/16 inch wrench to tighten jamnut (AH) and go on to step 75.



68. Using 9/16 inch wrench to hold steering rod end (AF), use 9/16 inch wrench to loosen jamnut (AH).

69. Using hands, turn control rod AD) clockwise until control rod (AD) is past witness hole in steering rod end (AF).

70. Using 9/16 inch wrench to hold steering rod end (AF), use 9/16 inch wrench to tighten jamnut (AH).

Go on to Sheet 14

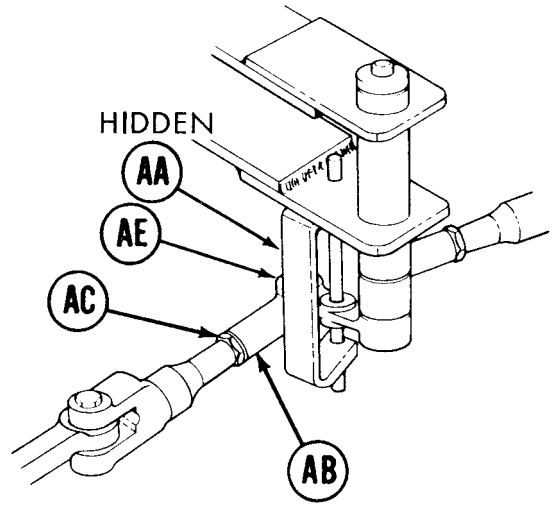
TA249666

STEERING CONTROL LINKAGE ADJUSTMENT (Sheet 14 of 22)

71. Using 9/16 inch wrench, turn steering rod end (AB) counterclockwise until screw (AA) will drop freely through clevis (AE) and steering rod end (AB).

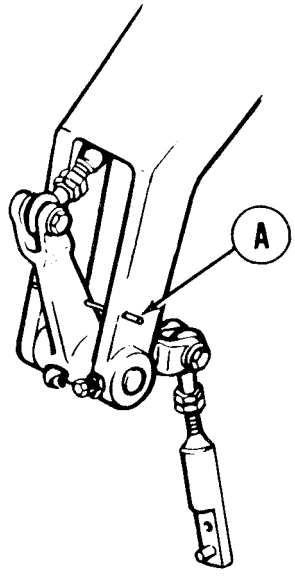
72. Using 9/16 inch wrench, install screw (AA).

73. Using torque wrench and crowfoot, tighten screw (AA) to 16 lb-ft (22 N.m).



LEFT OF DRIVER'S STATION

74. Using 9/16 inch wrench to hold steering rod end (AB), use 9/16 inch wrench to tighten jamnut (AC).



LEFT SIDE OF TRANSMISSION

NOTE

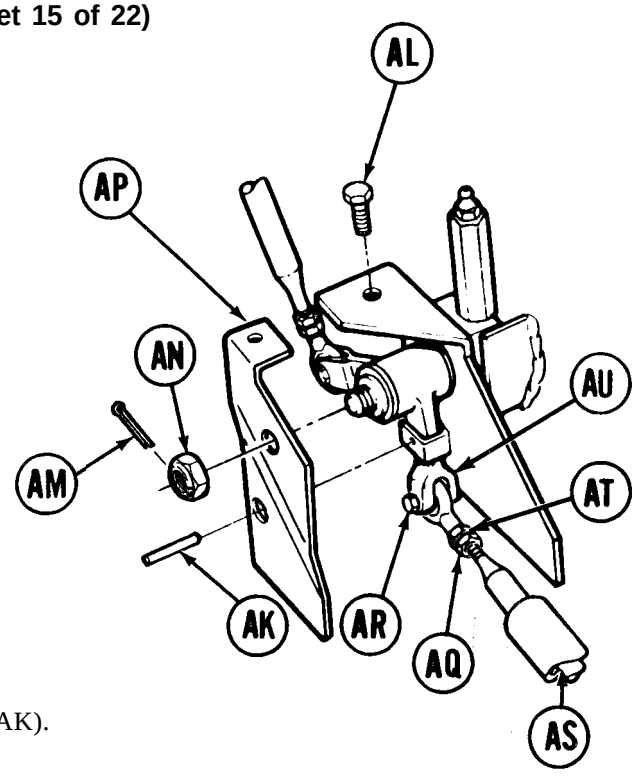
Do not remove locater pins already installed.

75. Try to insert locating pin (A). If locating pin (A) can be inserted, linkage is in adjustment. Go on to step 128. If locating pin (A) cannot be inserted, remove powerplant (page 5-2) and go on to step 76.

Go on to Sheet 15

TA249667

STEERING CONTROL LINKAGE ADJUSTMENT (Sheet 15 of 22)



76. Try to insert locating pin (AK). If locating pin (AK) can be inserted, go on to step 109. If locating pin (AK) cannot be inserted, go to step 77.

77. Using 7/16 inch wrench, remove screw (AL).

78. Using pliers, remove cotter pin (AM).

79. Using 3/4 inch wrench, remove nut (AN) and remove plate (AP).

80. Using 9/16 inch wrench, loosen jamnut (AQ).

81. Using 9/16 inch wrench, remove screw (AR).

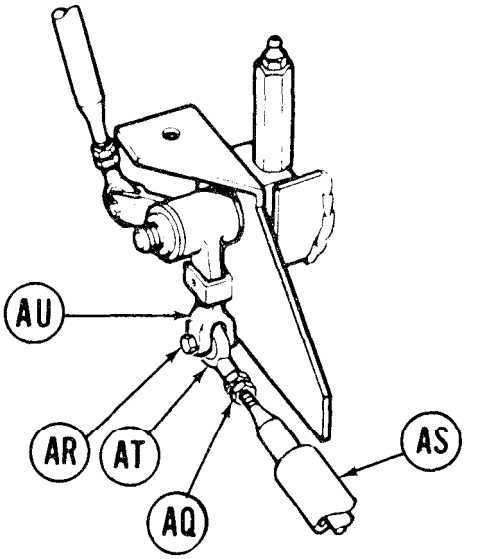
82. Move link assembly and insert locating pin (AK).

83. Using 9/16 inch wrench, ad-just length of control rod (AS) by turning steering rod end (AT) clockwise or counterclockwise until screw (AR) can be freely inserted through clevis (AU) and steering rod end (AT).

Go on to Sheet 16

TA249668

STEERING CONTROL LINKAGE ADJUSTMENT (Sheet 16 of 22)



LEFT SIDE OF HULL
(TO REAR OF FUEL TANK)

84. Using small gage wire, check if control rod. (AS) is past witness hole in steering rod end (AT). If control rod (AS) is past witness hole, go on to step 85. If control rod (AS) is not past witness hole, go on to step 88.

85. Using 9/16 inch wrench to hold steering rod end (AT), use 9/16 inlch wrench to tighten jamnut (AQ),

86. Position steering rod end (AT) in clevis (AU) and using 9/16 inch wrench, install screw (AR.).

87. Using socket and torque wrench, tighten screw (AR) to 16 lb-ft (22 N.m). Go on to step 109.

88. Using 9/16 inch wrench, turn steering rod end (AT) clockwise until control rod (AS) is just past witness hole in steering rod end (AT).

Using 9/16 inch wrench to hold steering rod end (AT), use 9/16 inch wrench to tighten jamnut (AQ).

Go on to Sheet 17

TA249669

STEERING CONTROL LINKAGE ADJUSTMENT (Sheet 17 of 22)

90. Using 9/16 inch wrench, remove screw (AV).

90. Position steering rod end (AT) in clevis (AU) and using 9/1 6 inch wrench, install screw (AR).

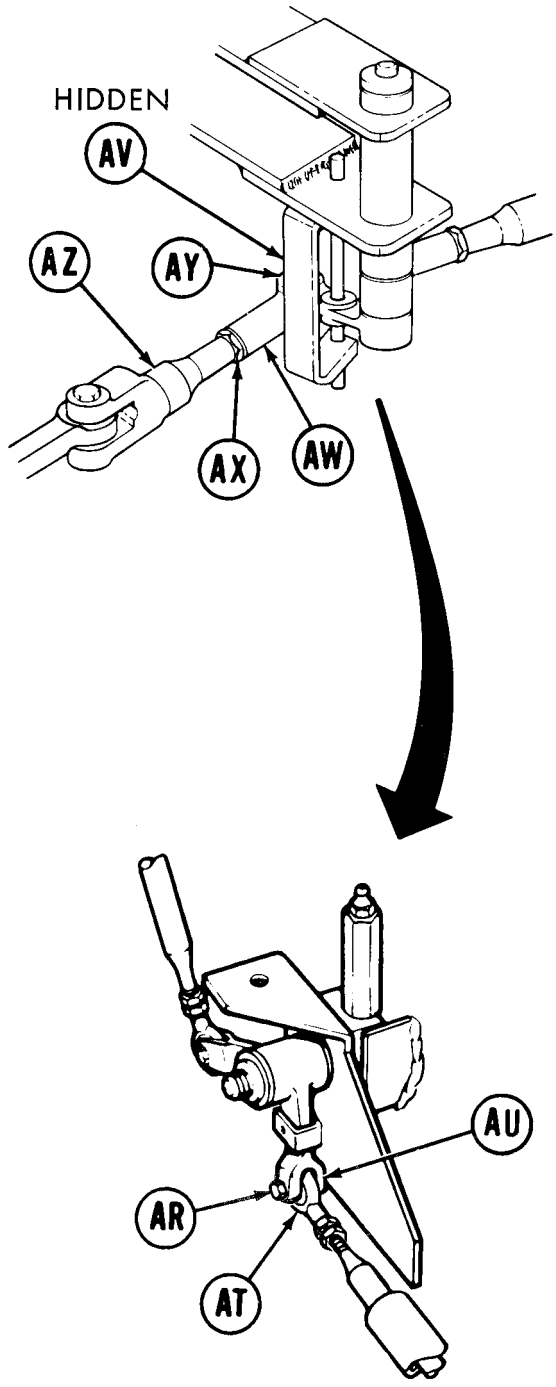
92. Using torque wrench tighten screw (AR) to 16 lb-ft (22 N.m).

93. Using 9/16 inch wrench to hold steering rod end (AW), use 9/16 inch wrench to loosen jamnut (AX).

94. Using 9/16 inch wrench, turn steering rod end (AW) counterclockwise until screw (AV) will drop freely through clevis (AY) and steering rod end (AW).

95. Using small gage wire, check if control rod (AZ) is past witness hole in steering rod end (AW). If control rod (AZ) is past witness hole, go to step 96. If control rod (AZ) is not past witness hole, go on to step 99.

96. Using 9/16 inch wrench to hold steering rod end (AW), use 9/16 inch wrench to tighten jamnut (AX).



Go on to Sheet 18

TA249670

STEERING CONTROL LINKAGE ADJUSTMENT (Sheet 18 of 22)

97. Using 9/16 inch wrench, install screw (AV).

98. Using torque wrench and crow foot, tighten screw (AV) to 16 lb-ft (22 N.m) and go on to step 109.

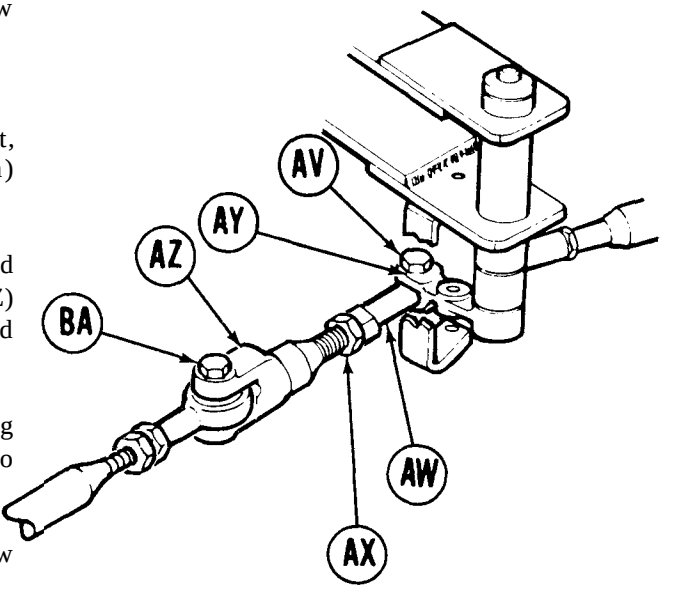
99. Using 9/16 inch wrench, turn steering rod end (AW) clockwise until control rod (AZ) is just past witness hole in steering rod end (AW).

100. Using 9/16 inch wrench to hold steering rod end (AW), use 9/16 inch wrench to tighten jamnut (AX).

101, Using 9/16 inch wrench, remove screw (BA).

102. Position steering rod end (AW) in clevis (AY) and using 9/16 inch wrench, install screw (AV).

103. Using torque wrench and crow foot, tighten screw (AV) to 16 lb-ft (22 N.m).



LEFT OF DRIVER'S STATION

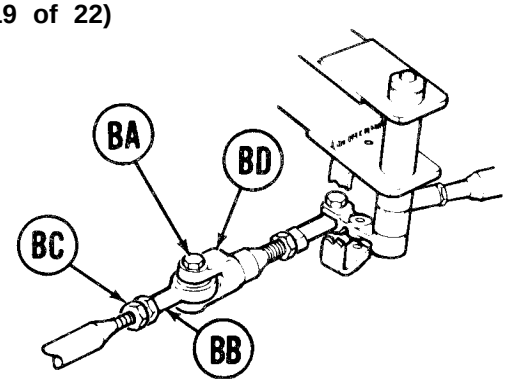
Go on to Sheet 19

TA249671

STEERING CONTROL LINKAGE ADJUSTMENT (Sheet 19 of 22)

104. Using 9/16 inch wrench to hold steering rod end (BB), use 9/16 inch wrench to loosen jamnut (BC).

105. Using 9/16 inch wrench, turn steering rod end (BB) counterclockwise until screw (BA) will drop freely through clevis (BD) and steering rod end (BB).



LEFT OF DRIVER, S STATION

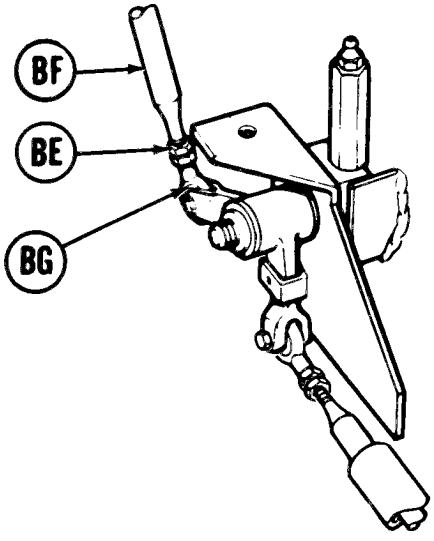
106. Using 9/16 inch wrench to hold steering rod end (BB), use 9/16 inch wrench to tighten jamnut (BC).

107. Using 9/16 inch wrench, install screw (BA) through clevis (BD) and steering rod end (BB).

108. Using socket and torque wrench, tighten screw (BA) to 16 lb-ft (22 N.m).

109. Using 9/16 inch wrench, loosen jamnut (BE).

110. Using hands, turn control rod (BF) counterclockwise until control rod (BF) is not past witness hole in steering rod end (BG).



LEFT SIDE OF HULL
(TO REAR OF FUEL TANK)

Go on to sheet 20

TA249672

STEERING CONTROL LINKAGE ADJUSTMENT (Sheet 20 of 22)

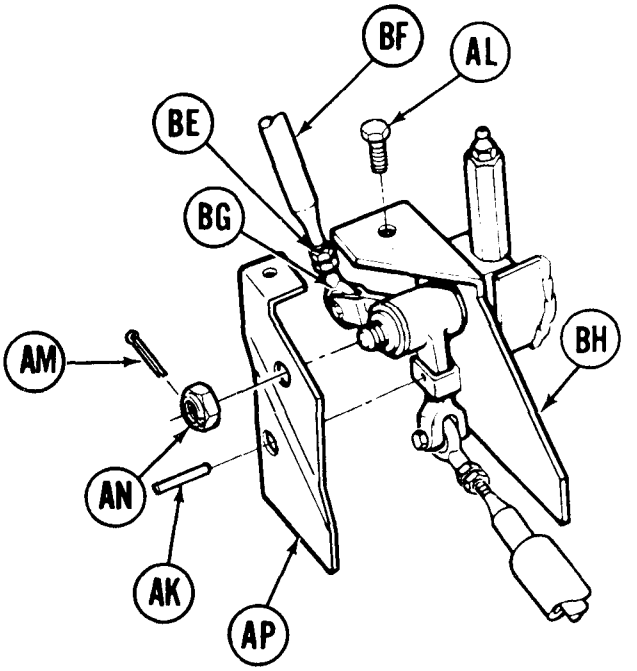
111. Using hands, turn control rod (BF) clockwise until control rod (BF) is just past witness hole in steering rod end (BG).

112. Using 9/16 inch wrench to hold steering rod end (BG), use 9/16 inch wrench to tighten jamnut (BE).

113. Remove locating pin (AK).

114. Position plate (AP) on plate (BH).

115. Using 9/16 inch wrench, install screw (AL).



LEFT SIDE OF HULL
(TO REAR OF FUEL TANK)

116. Using 3/4 inch wrench, install nut (AN).

117. Using pliers, install cotter pin (AM) through nut (AN).

118. Install powerplant (page 5-2).

Go on to Sheet 21

TA249673

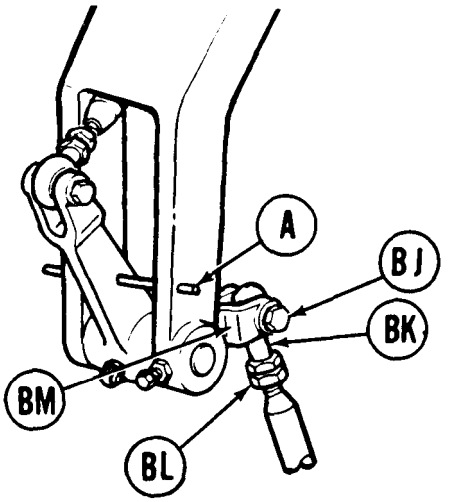
STEERING CONTROL LINKAGE ADJUSTMENT (Sheet 21 of 22)

119. Try to insert locating pin (A). If locating pin (A) can be inserted, go on to step 128. If locating pin (A) cannot be inserted, go to step 120.

120. Using 9/16 inch wrench, remove screw (BJ).

121. Insert locating pin (A).

122. Using 9/16 inch wrench to hold steering rod end (BK), use 9/16 inch wrench to loosen jamnut (BL).



LEFT SIDE OF TRANSMISSION

123. Using 9/16 inch wrench, turn steering rod end (BK) clockwise or counterclockwise until screw (BJ) can be inserted freely through clevis (BM) and steering rod end (BK).

124. Using 9/16 inch wrench to hold steering rod end (BK), use 9/16 inch wrench to tighten jamnut (BL).

125. Position steering rod end (BK) in clevis (BM) and using 9/16 inch wrench install screw (BJ).

126. Remove locating pin (A).

127. Using socket and torque wrench, tighten screw (BJ) to 16 lb-ft (22 N.m).

Go on to Sheet 22

TA249674

STEERING CONTROL LINKAGE ADJUSTMENT (Sheet 22 of 22)

128. Remove all locating pins.

129. Check steering controls with vehicle operating (TM 5-5420-202-10). If steering is unacceptable, notify support maintenance personnel.

130. Install transmission shroud (page 9-6).

131. Unblock tracks (TM 5-5420-202-10).

End of Task

CHAPTER 16

HULL EXTERIOR MAINTENANCE

INDEX

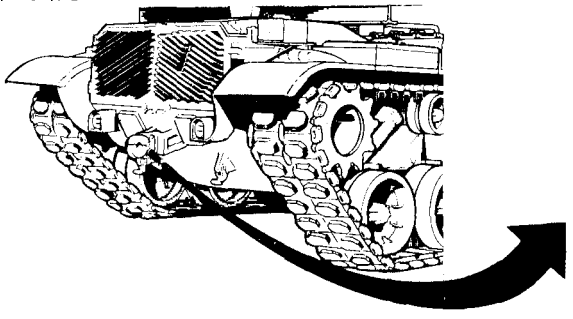
TOWING PINTLE REPAIR (Sheet 1 of 5)

PROCEDURE INDEX

TOOLS: 1-5/16 in. open end wrench
Hammer
Flat-tip screwdriver
Center punch
3/8 in. drive punch
60 in. pinchpoint crowbar
5/16 in. socket with 3/8 in. drive
Slip joint pliers
Grease gun, hand
Ratchet with 3/8 in. drive
3-1/4 in. socket with 1 in. drive
Ratchet with 1 in. drive
1-1/2 in. socket with 3/4 in. drive
1-5/16 in. socket with 3/4 in. drive
8 in. extension with 3/4 in. drive
Ratchet with 3/4 in. drive
1-1/2 in. open end wrench

SUPPLIES: Dry cleaning solvent (Item 55, Appendix D)
Cotter pins
Low-pressure air supply (30 psi maximum)
Lockwashers (4 required)
Gloves (Item 69, Appendix D)
Goggles (Item 70, Appendix D)

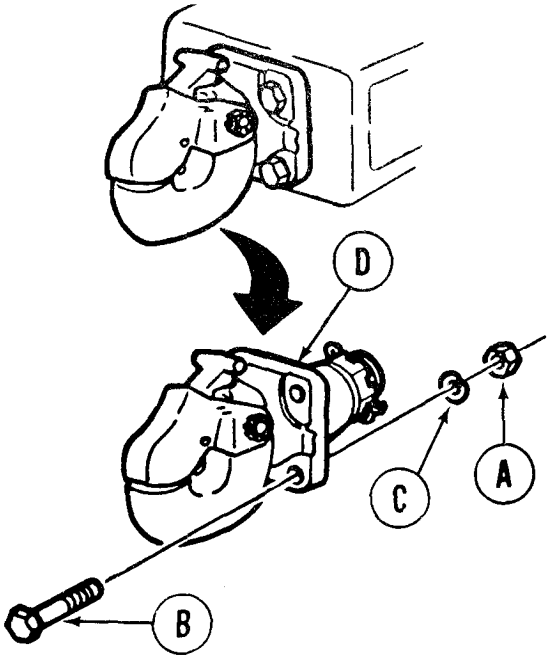
PERSONNEL : Two



REAR OF VEHICLE

REMOVAL:

1. Place 1-5/16 inch wrench on each of the four nuts (A).
2. Holding nut (A) with 1-5/16 inch wrench and using 1–5/16 inch socket, remove four bolts (B), lockwashers (C), and nuts (A).
3. Remove towing pintle (D) from vehicle.



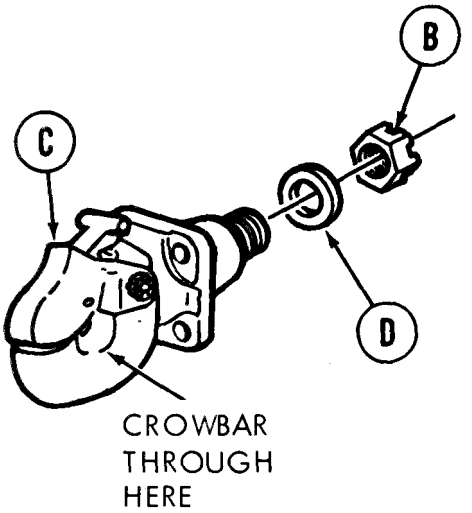
TA249675

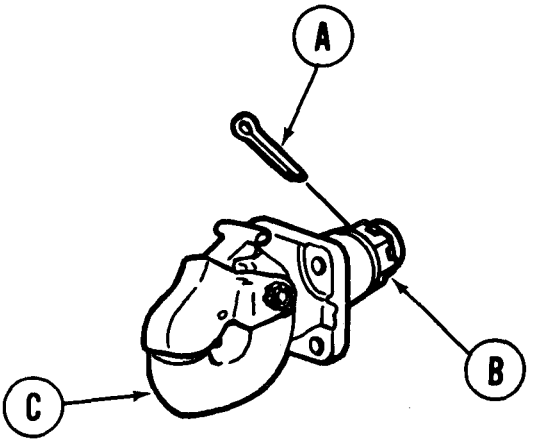
Go on to Sheet 2

TOWING PINTLE REPAIR (Sheet 2 of 5)

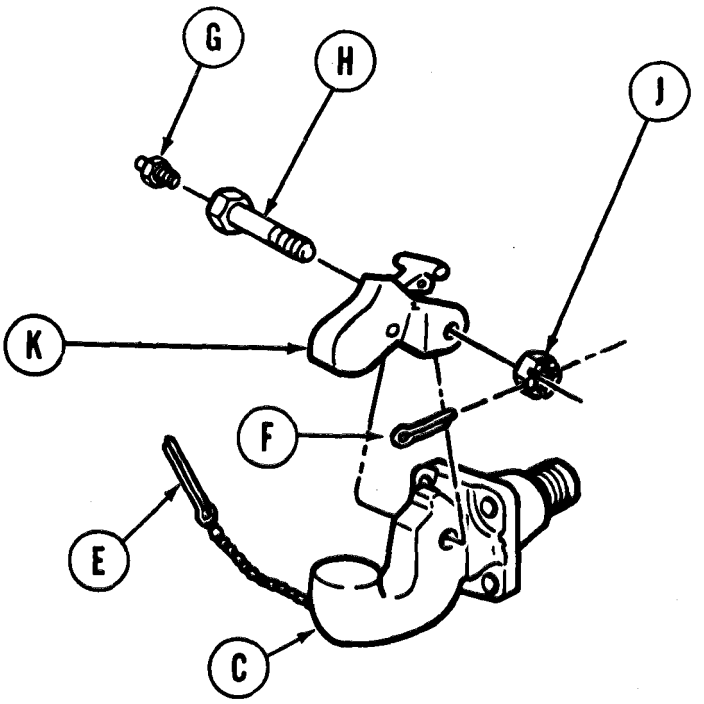
DISASSEMBLY:

1. Using pliers and hammer, remove cotter pin (A) from nut (B) at rear of towing pintle (C).
2. Place crowbar through hole of towing pintle (C).





3. With one technician holding crowbar, and another technician using 3-1 /4 inch socket, remove nut (B) and flat washer (D).
4. Pull cotter pin (E) that is hooked to chain out of towing pintle (C).



5. Using pliers, remove cotter pin (F).
6. Using 5/16 inch socket, remove fitting (G).
7. Place 1-1/2 inch wrench on bolt (H).
8. Using 1-1/2 inch socket, remove nut (J) and bolt (H) securing latch (K) to towing pintle (C).
9. Remove latch (K).

Go on to sheet 3

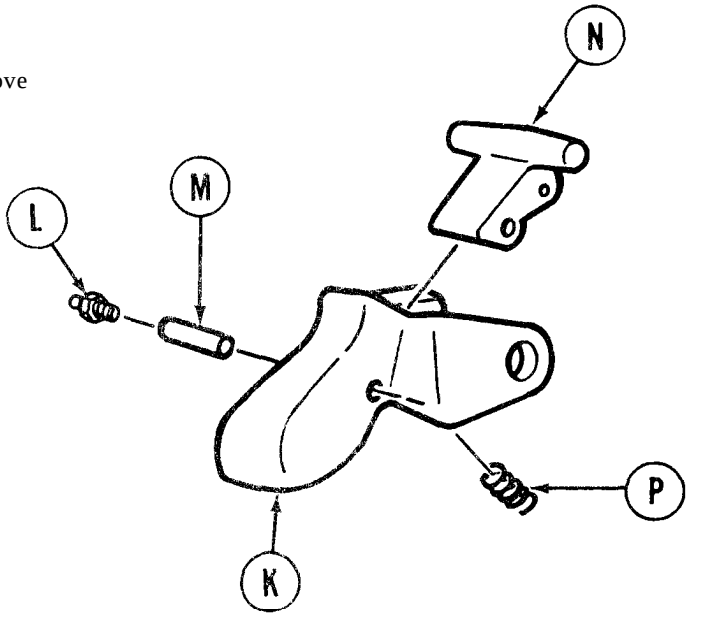
TA249676

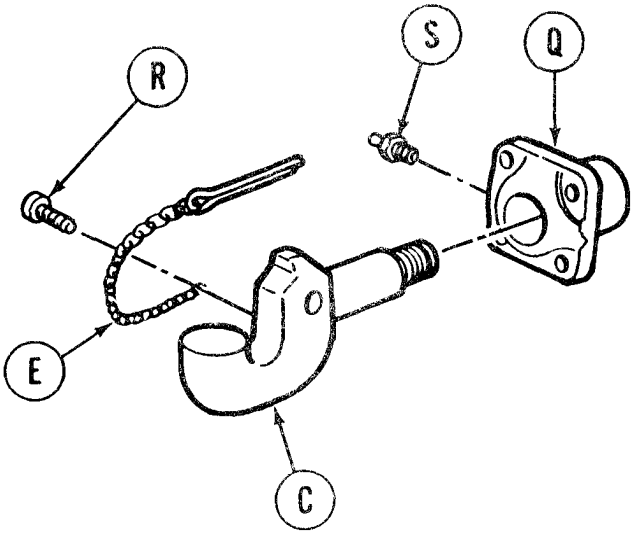
TOWING PINTLE REPAIR (Sheet 3 of 5)

10. Using 5/16 inch socket, remove fitting (L).

11. Using hammer and 3/8 inch punch, remove staked pin (M) securing latch (N) to latch (K).

12. Remove latch (N) and spring (P) from latch (K) housing.





13. Slide sleeve assembly (Q) off towing pintle (C).

14. Using screwdriver, remove screw (R) and chain and cotter pin (E) from towing pintle (C).

15. Using 5/16 inch socket, remove fitting (S).

CLEANING AND INSPECTION:

1. Inspect nuts and pintle for excessive wear or stripping of threads. Replace as required.
2. Remove any deformed metal from around cavity from which pin was removed.

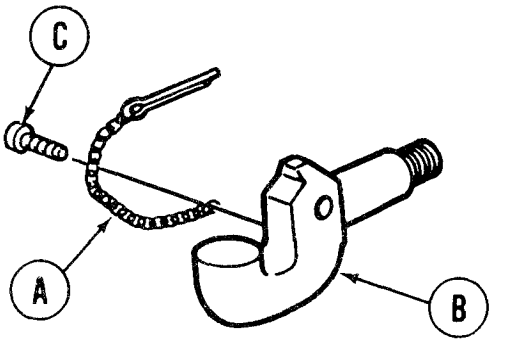
WARNING

Cleaning agent specified is flammable. Use only in well ventilated areas. Keep away from flames, sparks, or heat. Do not smoke while using. Prevent contact with eyes, mouth and/or skin. Wear rubber gloves when performing cleaning procedures.

3. Wash lock cavity with dry cleaning solvent and dry with low pressure compressed air.

ASSEMBLY:

1. Place chain ancl cotter pin (A) in installation position on towing pintle (B).
2. Using screwdriver, install screw (C) securing chain and cotter pin (A) to pintle (B).



TA249677

Go on to Sheet 4

TOWING PINTLE REPAIR (Sheet 4 of 5)

3. Place spring (D) in installation position in latch (E).

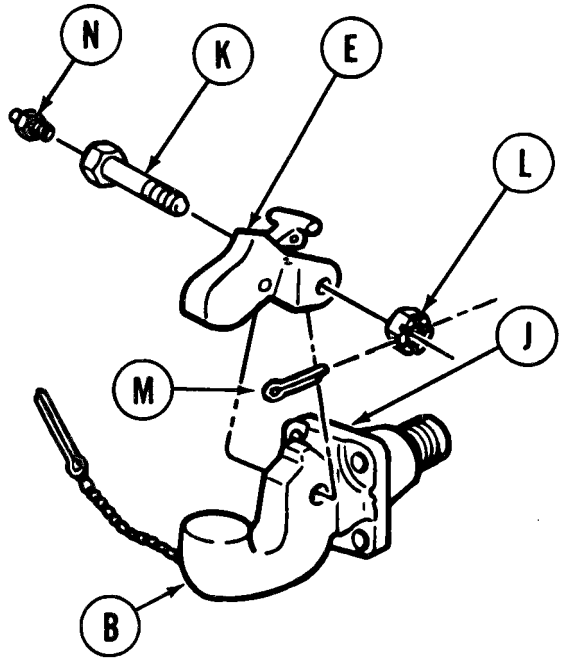
4. Place latch (F) in installation position in latch (E).

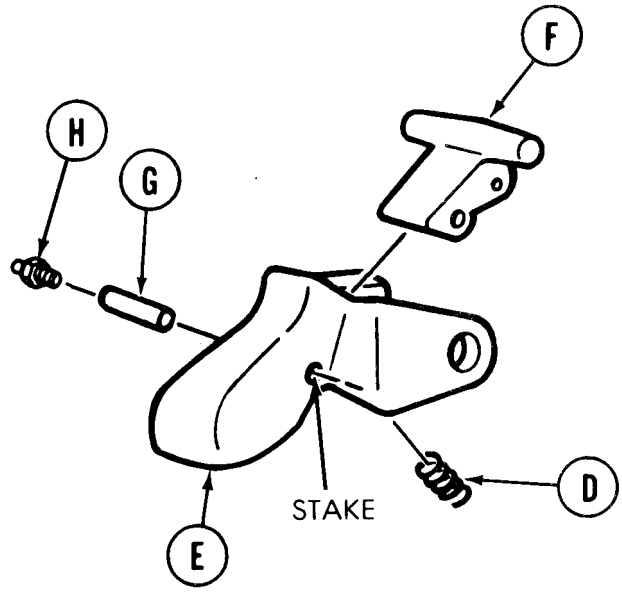
5. Using hammer, install pin (G) securing latch (F) to latch (E).

6. Using hammer and center punch, stake pin (G) in four places to latch (E).

7. Using 5/16 inch socket, install fitting (H) in pin (G).

8. Slide sleeve (J) onto pintle (B).





9. Place latch (E) in installation position on pintle (B).

10. Install bolt (K) through latch (E) and pintle (B). Install nut (L) on bolt (K).

11. Using 1-1/2 inch socket and 1-1/2 inch wrench, tighten bolt (K) and nut (L).

12. Aline hole in bolt (K) with slot in nut (L).

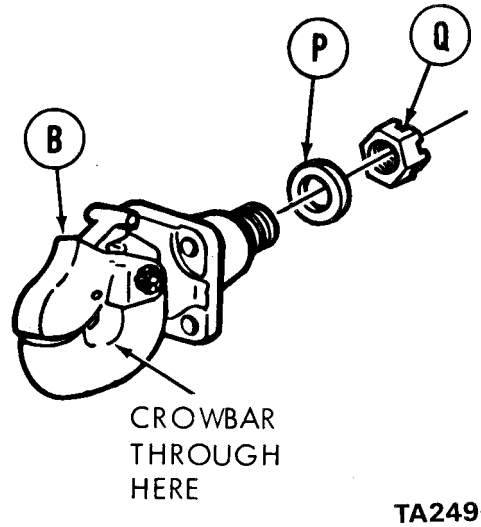
13. Using pliers, install cotter pin (M) through nut (L) and bolt (K).

14. Using 5/16 inch socket, install fitting (N) in bolt (K).

15. Place flat washer (P) and nut (Q) on towing pintle (B).

16. Place crowbar through hole in towing pintle (B).

17. Using 3-1/4 inch socket, tighten nut (Q), while other technician holds crowbar.



Go on to Sheet 5

TA249678

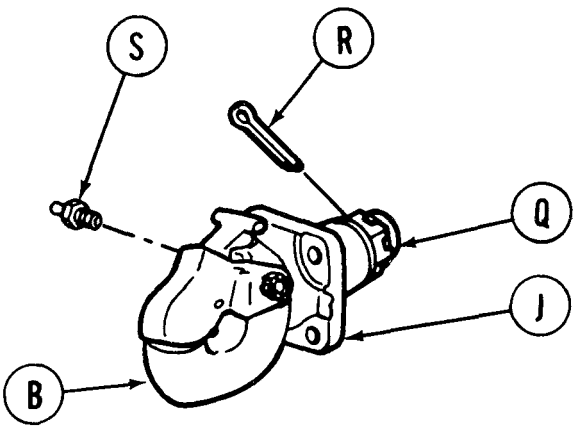
TOWING PINTLE REPAIR (Sheet 5 of 5)

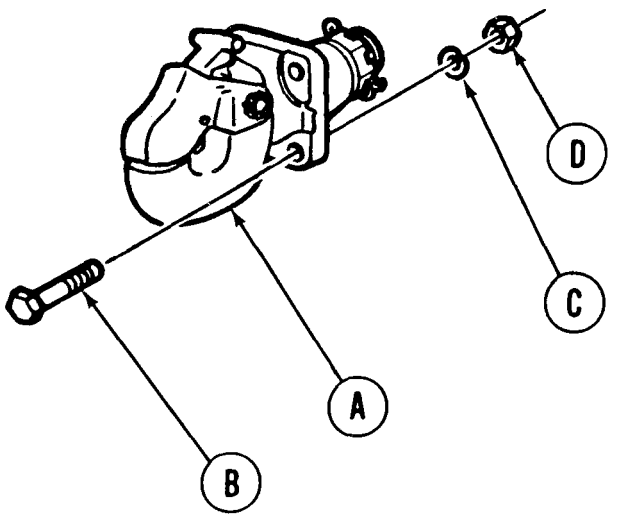
18. Aline hole in pintle (B) with slot on nut (Q).

19. Using pliers, install cotter pin (R) through nut (Q) and pintle (B).

20. Using pliers, bend ends of cotter pin (R) to secure cotter pin in place.

21. Using 5/16 inch socket, install fitting (S) in sleeve (J) and position as shown.





INSTALLATION:

1. Install towing pintle (A) in vehicle mounting brackets.

2. Install four bolts (B), lockwashers (C), and nuts (D).

3. Place 1-5/16 inch wrench on four nuts (D).

4. Using 1-5/16 inch socket, tighten four bolts (B).

5. Lubricate pintle (LO 5-5420-202-12).

End of Task

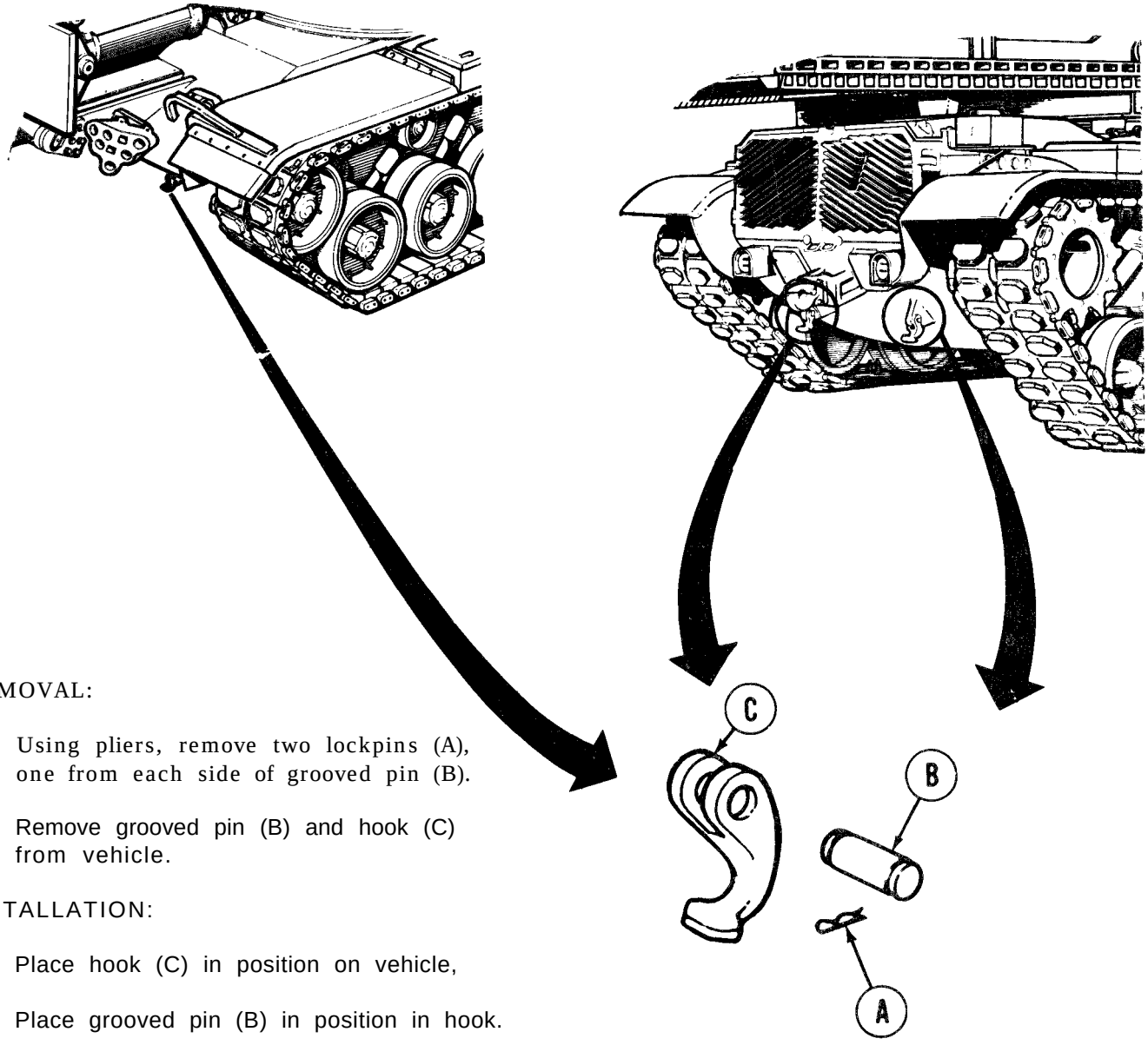
TA249679

TOW CABLE HOOK REPLACEMENT (Sheet 1 of 1)

TOOLS: Long round nose pliers

NOTE

Four hooks are issued with the vehicle. They are located at the front and the rear.



REMOVAL:

1. Using pliers, remove two lockpins (A), one from each side of grooved pin (B).
2. Remove grooved pin (B) and hook (C) from vehicle.

INSTALLATION:

1. Place hook (C) in position on vehicle,
2. Place grooved pin (B) in position in hook.
3. Using pliers, install two lockpins (A).

End of Task

TA249680

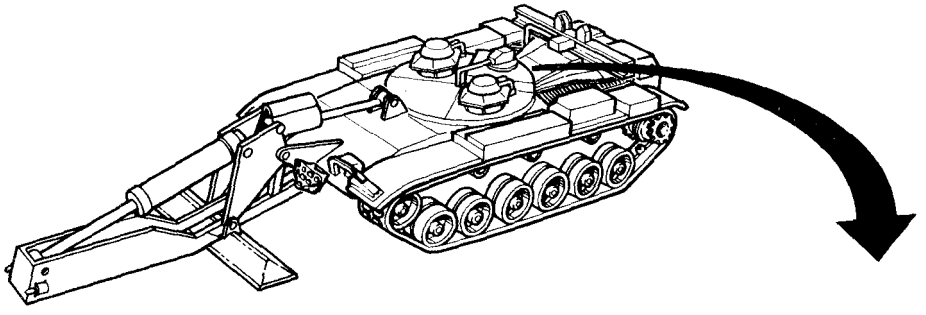
FUEL FILLER COVER ASSEMBLY REPLACEMENT (Sheet 1 of 2)

TOOLS: Hammer
Slip joint pliers
3/16 in. drive punch

REMOVAL:

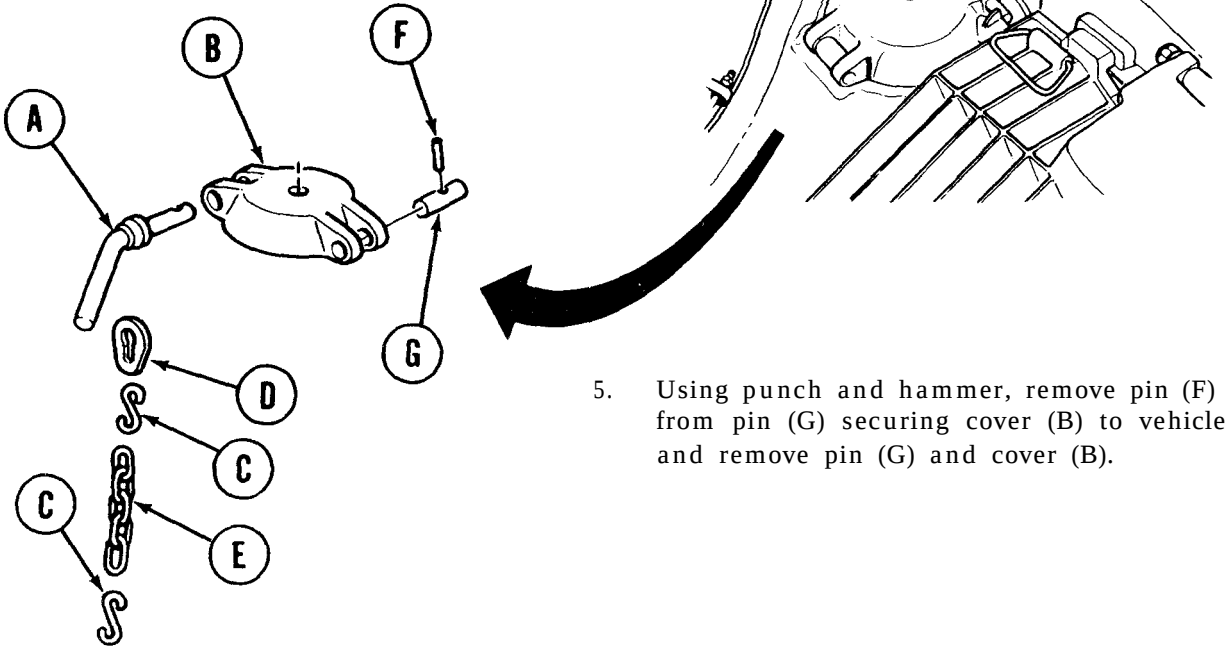
1. Remove handle (A) by pulling out of cover (B).

2. Using pliers, bend back hooks (C) securing ring (D) to handle (A) and vehicle.



3. Remove ring (D) from handle (A).

4. Remove chain (E).



5. Using punch and hammer, remove pin (F) from pin (G) securing cover (B) to vehicle and remove pin (G) and cover (B).

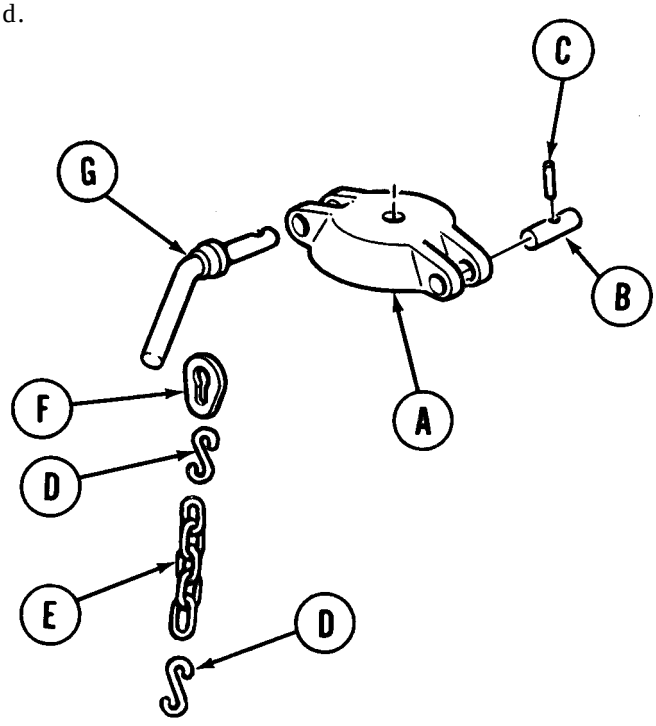
Go on to Sheet 2

TA249681

FUEL FILLER COVER ASSEMBLY REPLACEMENT (Sheet 2 of 2)

INSTALLATION:

1. Install cover (A) over fuel filler opening.
2. Using hammer and punch, install pin (B) through cover (A) opening and secure with pin (C).
3. Install two hooks (D) to ends of chain (E) and, using pliers, press closed on chain.
4. Using pliers, install ring (F) to handle (G).
5. Using pliers, install hook (D) to ring (F) and vehicle and press closed.



6. Move handle (G) in and out of cover (A) two or three times to make sure handle (G) does not stick in cover (A).

End of Task

TA249682

INTAKE GRILLE DOOR NO. 1 LEFT AND RIGHT REPLACEMENT (Sheet 1 of 1)

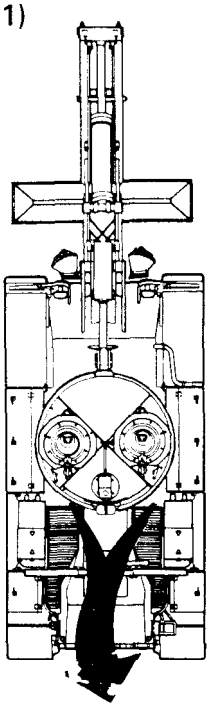
TOOLS: .3/4 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive

SUPPLIES: Lockwasher

PERSONNEL: Two

REFERENCE: TM 5-5420-202-10

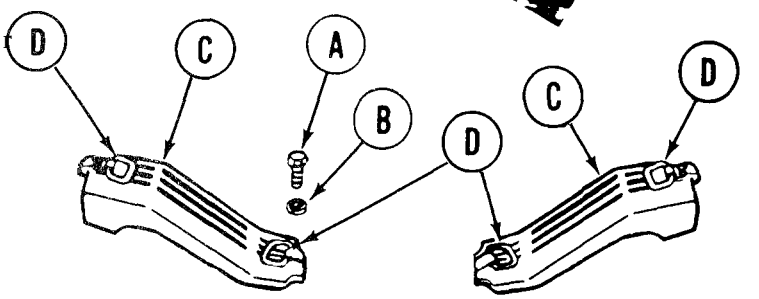
PRELIMINARY PROCEDURES: Launch bridge (TM 5-5420-202-10)
Open No. 5, 4, 3, and 2 intake grille doors (TM 5-5420-202-10)



REMOVAL:

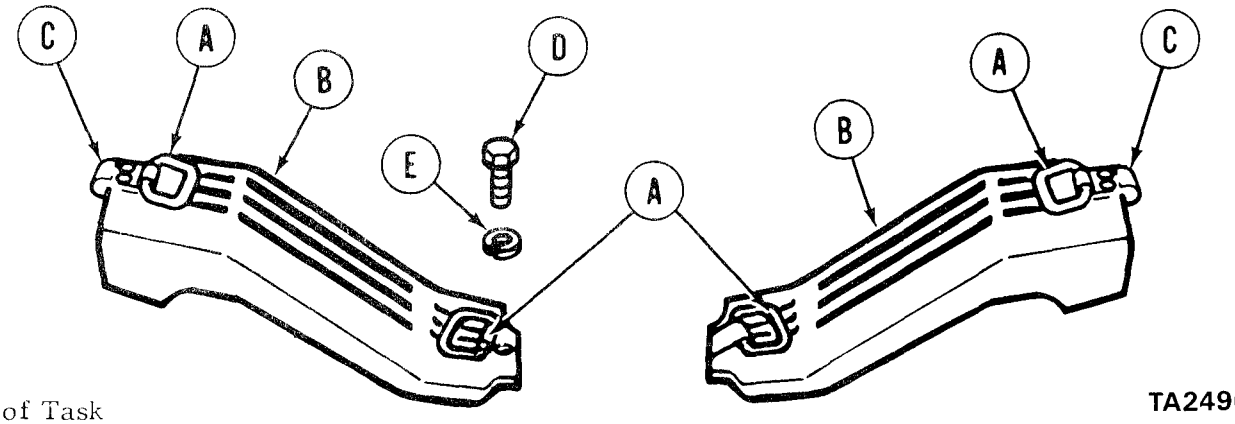
1. Using socket, remove screw (A) and lockwasher (B) from door (C).
2. Using handle (D), lift door (C) until door (C) disengages from vehicle.
3. Using second technician, remove door (C) from vehicle.

   Repeat steps 1 through 3 for opposite side of vehicle.



INSTALLATION:

1. With two technicians using handles (A), lift door (B) above vehicle and slowly lower, making sure bracket (C) fits into slot in vehicle before lowering door (B) to closed position.
2. Using socket, install screw (D) and lockwasher (E) into door (B) securing door (B) to vehicle.
3. Repeat steps 1 through 3 for opposite side of vehicle.
4. Close Nos. 2, 3, 4, and 5 intake grille doors (TM 5-5402-202-10).



End of Task

TA249683

INTAKE GRILLE DOOR No. 2 LEFT AND RIGHT REPLACEMENT (Sheet 1 of 1)

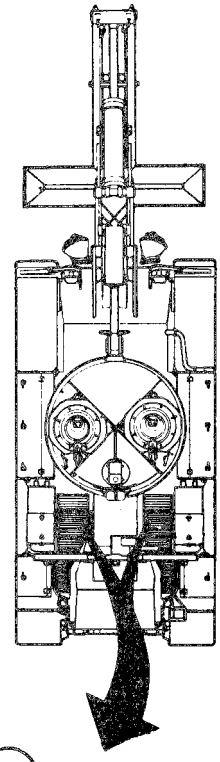
TOOLS: 1-1/8 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
Pliers

SUPPLIES: Lockwashers (2 required)

PERSONNEL: Two

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Launch bridge (TM 59-5420-202-10) open Nos. 5, 4, and 3 intake grille doors (TM 5-5420-202-10)



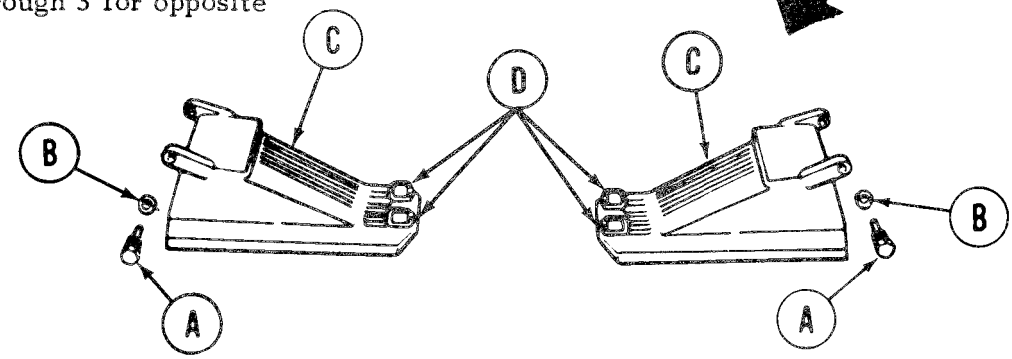
REMOVAL:

Using socket, remove two screws (A) and lockwashers (B).

2. Using second technician, lift door (C) with handles (D) straight up.

3. Remove door (C) from vehicle.

4. Repeat steps 1 through 3 for opposite side of vehicle.



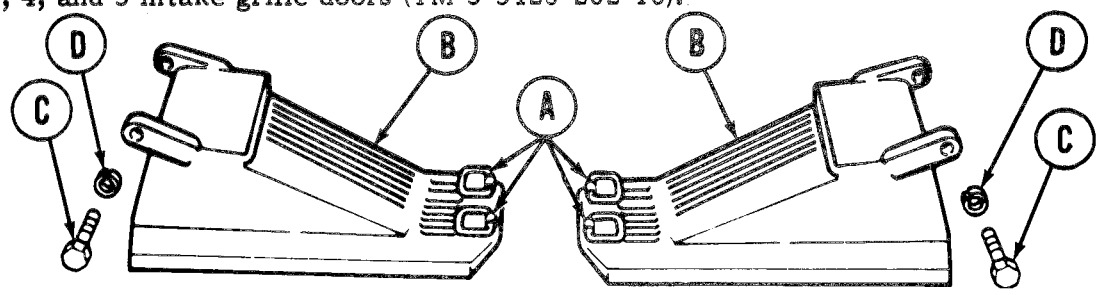
INSTALLATION:

1. With two technicians using handles (A), lift door (B) above vehicle and place. Make sure holes in door (B) hinge aline with holes in vehicle.

2. Using two screws (C) and lockwashers (D), secure door (B) to vehicle. use socket to tighten screws.

3. Repeat steps 1 through 3 for opposite side of vehicle.

4. Close No. 3, 4, and 5 intake grille doors (TM 5-5420-202-10).



End of Task

TA249684

INTAKE GRILLE DOOR NO. 3 LEFT AND RIGHT REPLACEMENT (Sheet 1 of 2)

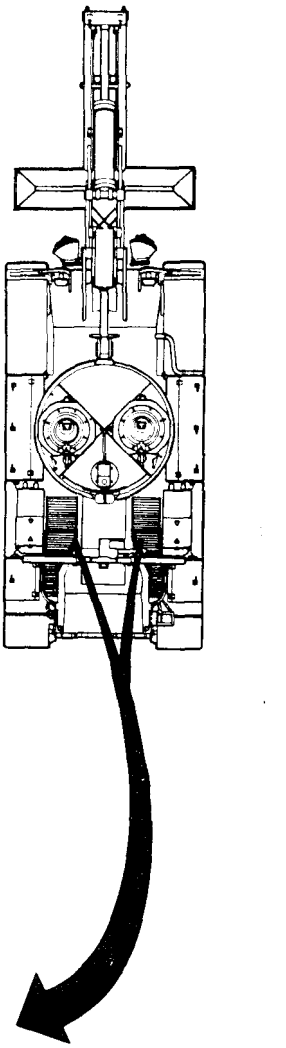
TOOLS: Long round nose pliers

SUPPLIES: Cotter pin

PERSONNEL: Two

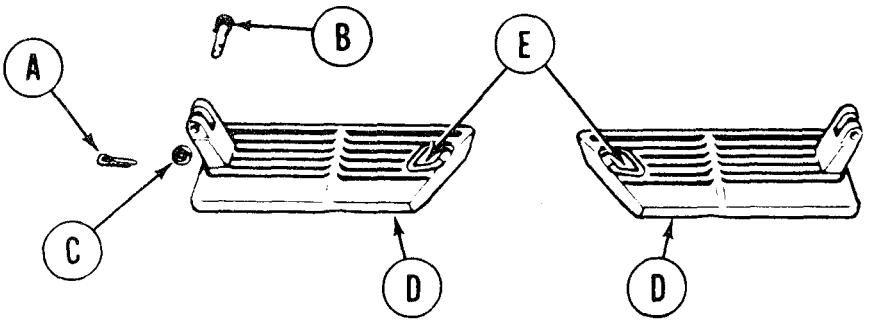
REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Launch bridge (TM 5-5420-202-10)
Open Nos. 5 and 4 intake grille doors (TM 5-5420-202-10)



REMOVAL:

1. Using pliers, remove cotter pin (A) from pin (B).
   Remove pin (B) and washer (C) from door (D).
2. Using second technician, lift door (D) with handle (E) straight up.



3. Remove door (D) from vehicle.
4. Repeat steps 1 through 3 for opposite side of vehicle.

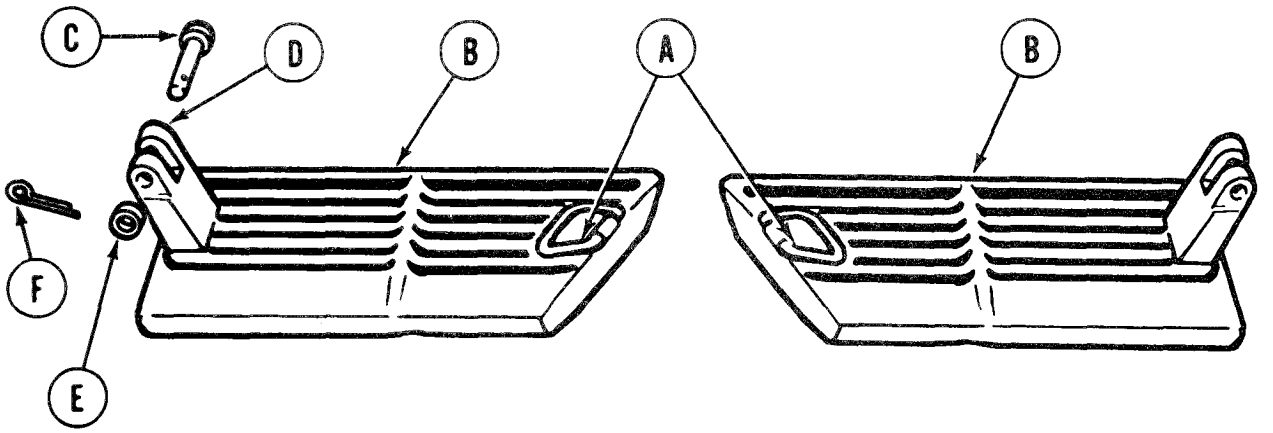
Go on to Sheet 2

TA249685

INTAKE GRILLE DOOR NO.3 LEFT AND RIGHT REPLACEMENT (Sheet 2 of 2)

INSTALLATION:

1. With two technicians using handle (A), lift door (B) above vehicle and slowly lower into place. Make sure hinge on door (B) alines with holes in vehicle.
2. Insert pin (C) through holes (D). Install washer (E) onto pin (C). Push cotter pin (F) through hole in pin (C).
3. Using pliers, spread each side of cotter pin (F) so it cannot be removed from pin (C).
4. Repeat steps 1 through 3 for opposite side of vehicle.
5. Close Nos. 4 and 5 intake grille doors (TM 5-5420-202-10).



End of Task

TA249686

INTAKE GRILLE DOOR NO. 4 LEFT AND RIGHT REPLACEMENT (Sheet 1 of 1)

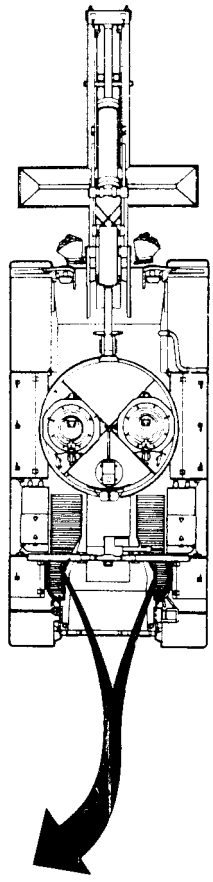
TOOLS: 1-1/8 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive

SUPPLIES: Lockwasher

PERSONNEL: Two

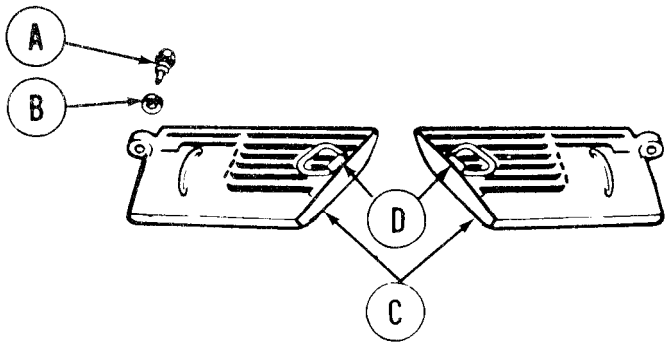
REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Launch bridge (TM 5-5420-202-10)
Open No. 5 intake grille door (TM 5-5420-202-10)



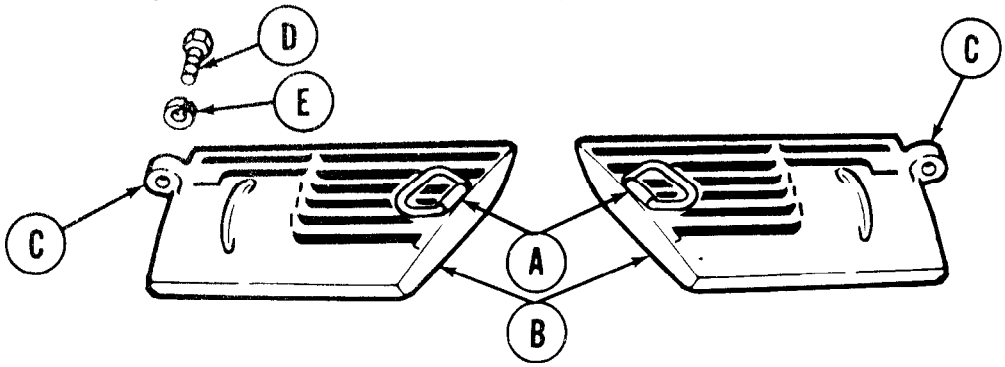
REMOVAL:

1. Using socket, remove screw (A) and lockwasher (B) from door (C).
2. Using second technician, lift door (C) with handle (D) straight up.
3. Remove door (C) from vehicle.
4. Repeat steps 1 through 3 for opposite side of vehicle.



INSTALLATION:

1. Using handle (A), lift door (B) above vehicle and slowly lower into place. Make sure hinge hole (C) in door (B) alines with hole in vehicle.
2. Using screw (D) and lockwasher (E), secure door (B) to vehicle. Use socket to tighten screw (D).
3. Repeat steps 1 and 2 for opposite side of vehicle.
4. Close no. 5 intake grille doors (TM 5-5420-202-10).



End of Task

TA249687

INTAKE GRILLE DOOR NO.5 LEFT AND RIGHT REPLACEMENT (Sheet 1 of 2)

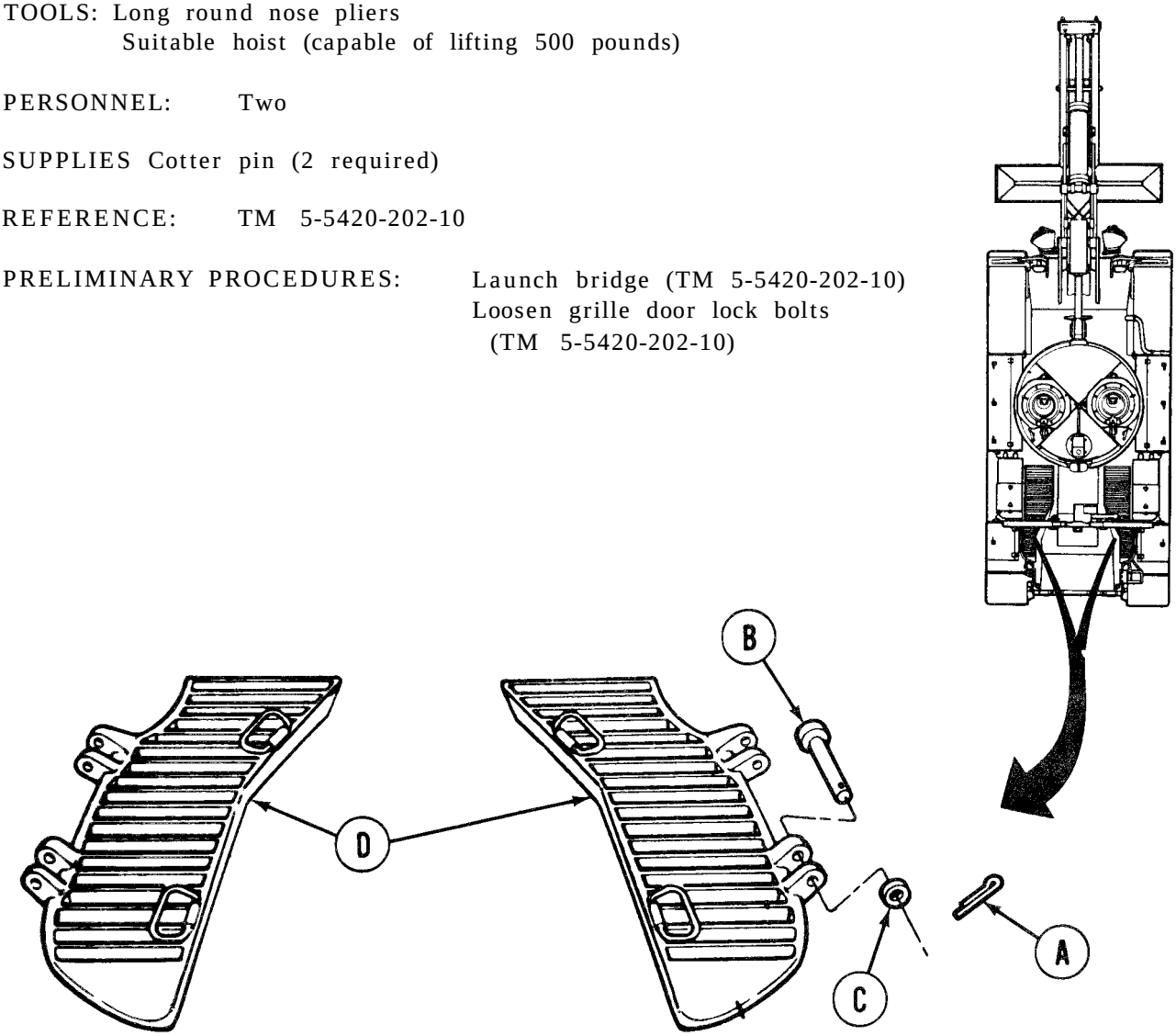
TOOLS: Long round nose pliers
Suitable hoist (capable of lifting 500 pounds)

PERSONNEL: Two

SUPPLIES Cotter pin (2 required)

REFERENCE: TM 5-5420-202-10

PRELIMINARY PROCEDURES: Launch bridge (TM 5-5420-202-10)
Loosen grille door lock bolts
(TM 5-5420-202-10)



REMOVAL:

1. Using pliers, remove two cotter pins (A) from two pins (B).
2. Remove pins (B) and flat washers (C).
3. Using second technician and suitable hoist, lift door (D) from vehicle.
4. Repeat steps 1 through 3 for opposite side of vehicle.

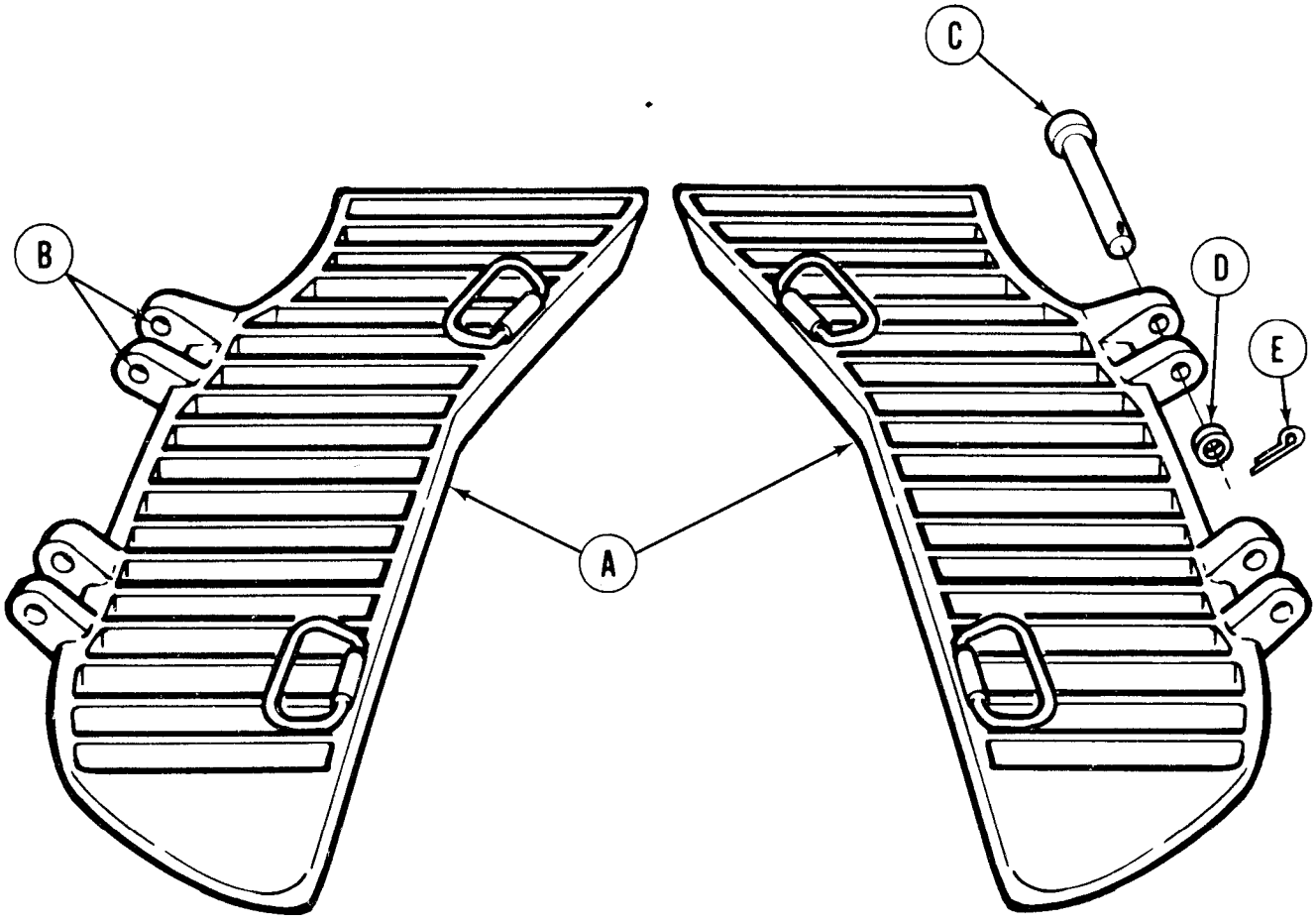
Go on to Sheet 2

TA249688

INTAKE GRILLE DOOR NO.5 LEFT AND RIGHT REPLACEMENT (Sheet 2 of 2)

INSTALLATION:

1. Using second technician and suitable hoist, raise door (A) over vehicle and slowly lower into place. Make sure hinge holes (B) aline with holes in vehicle.
2. Insert two pins (C) through hinge holes (B) and holes in vehicle. Install two flat washers (D) onto two pins (C). Install two cotter pins (E) through holes in pins (C).
3. Using pliers, spread each side of two cotter pins (E) so cotter pin cannot be removed from pins (C).
4. Repeat steps 1 through 3 for opposite side of vehicle.
5. Tighten grille door lock bolts (TM 5-5420-202-10)



End of Task

TA249689

EXHAUST DOORS REPLACEMENT (Sheet 1 of 4)

PROCEDURE INDEX

TOOLS: 1-1/8 in. socket with 1/2in. drive
Ratchet with 1/2 in. drive
9/16 in. socket with 1/2 in. drive
5 in. extension with 1/2 in. drive
Ball peen hammer
Needle nose pliers
Pinch bar
Drift punch
Suitable hoist

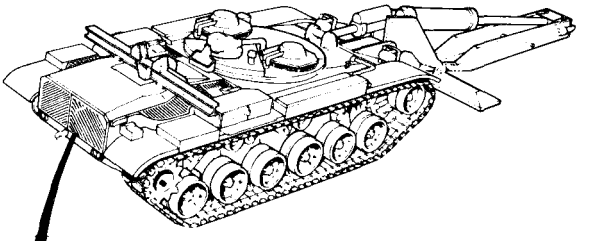
SPECIAL TOOLS: Sling (Item 32, Chapter 3, Section I)

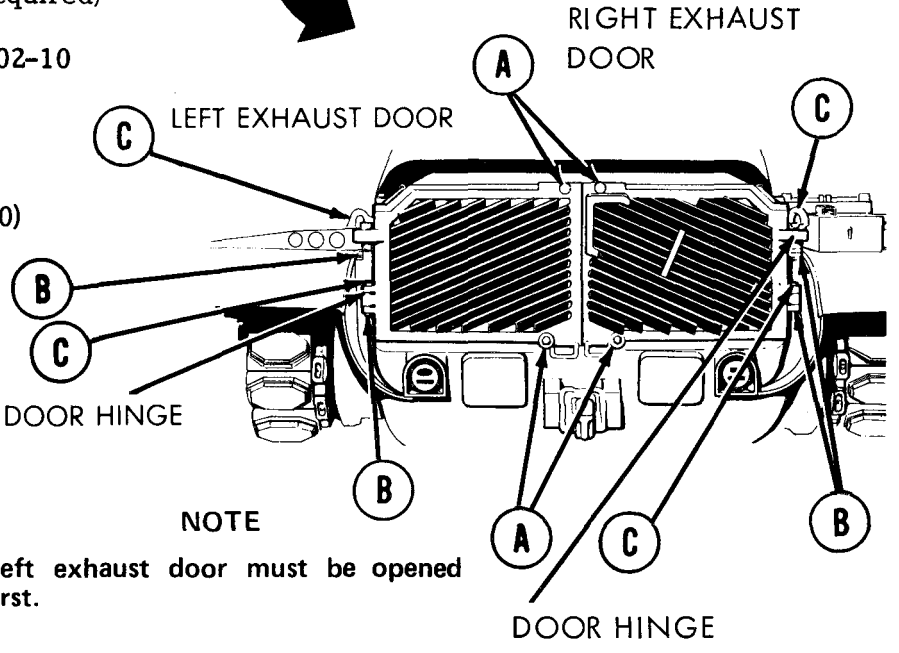
SUPPLIES Cotter pin (4 required)
Lockwashers (26 required)

REFERENCE: TM 5-5420-202-10

PERSONNEL: Three

PRELIMINARY PROCEDURE:
Launch bridge (TM 5-5420-202-10)





NOTE

Left exhaust door must be opened first.

REMOVAL:

1. Using 1-1/8 inch socket, remove four screws, lockwashers, and washers (A).

2. Using pliers, remove two cotter pins (B) securing headed pins (C) in door hinges.

Go on to sheet 2

TA249690

EXHAUST DOORS REPLACEMENT (Sheet 2 of 4)

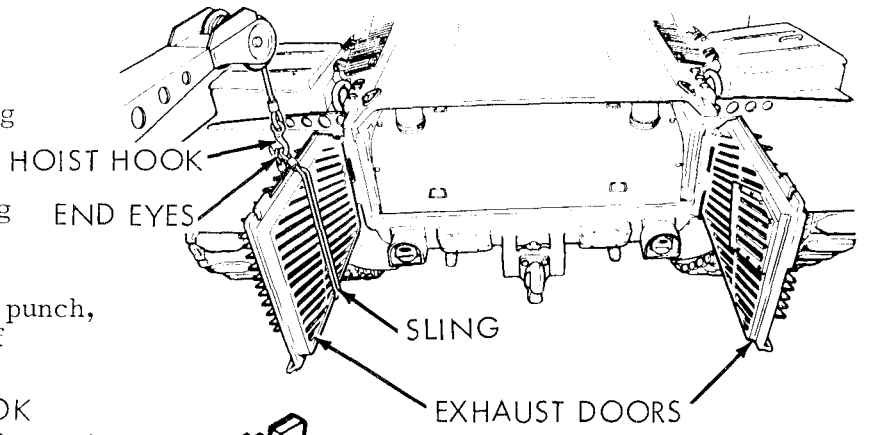
3. Position crane with hoist to rear of vehicle.

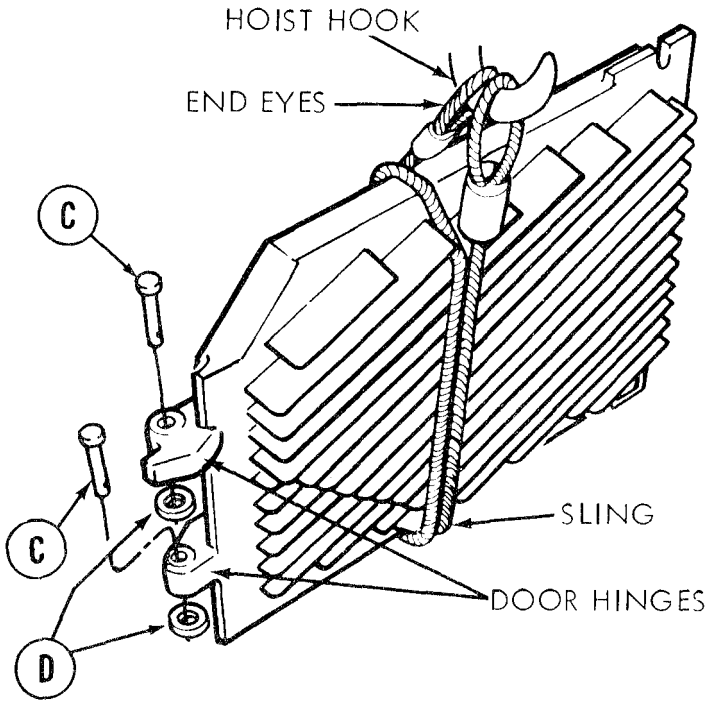
4. Wrap sling around door. Put two end eyes of sling over hoist hook.

5. Using hoist, tighten sling around door.

6. Using hammer and drift punch, drive two pins (C) out of hinges.

CRANE (WITH HOIST)



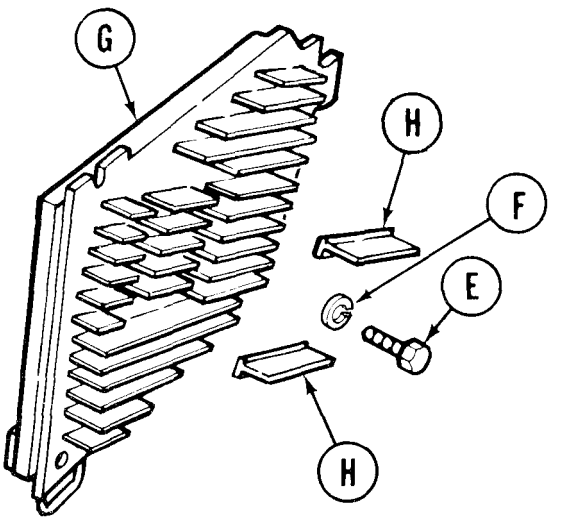


7. Remove two pins (C) and flat washers (D).

8. Using pinch bar, pry door away from hull mounting.

9. Using hoist and sling, move door to clean working area.

10. Repeat steps 2 through 9 for opposite side of vehicle.



11. Using 9/16 inch socket with extension, remove 22 screws (E) and lockwashers (F) from right side exhaust door (G) only.

12. Remove two deflectors (H) from right sise door only.

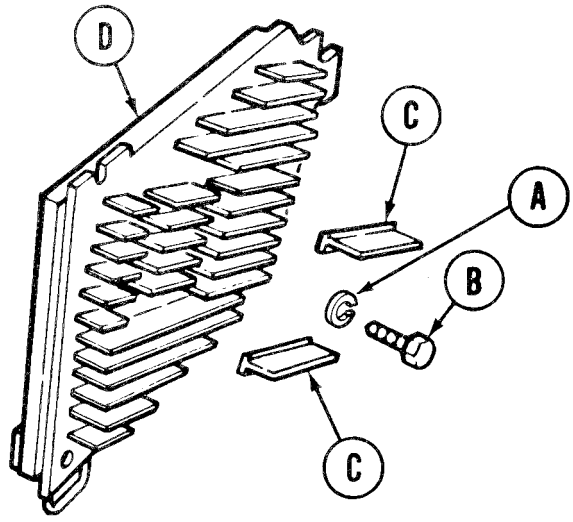
Go on to Sheet 3

TA249691

EXHAUST DOORS REPLACEMENT (Sheet 3 of 4)

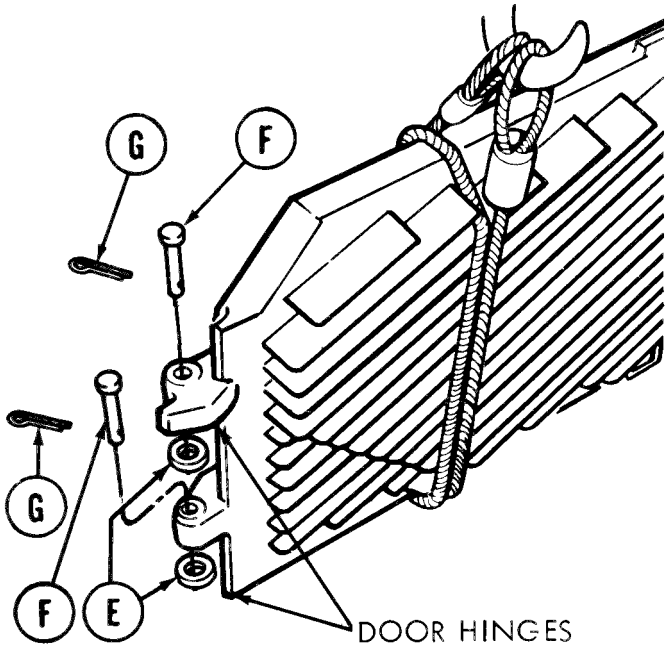
INSTALLATION:

1. Install 22 lockwashers (A) and screws (B) to secure two deflectors (C) mounted on right side only exhaust door (D). Using 9/16 inch socket with extension, tighten screws (A).



2. Using sling with hoist, lift door to mounting position at rear of hull.

3. Using assistance from other technicians, mount door to two hinges.



4. Install flat washers (E), use as many as necessary, to aline door screw holes with hull mating holes.

5. Using ball peen hammer, drive two headed straight pins (F) into two door hinges.

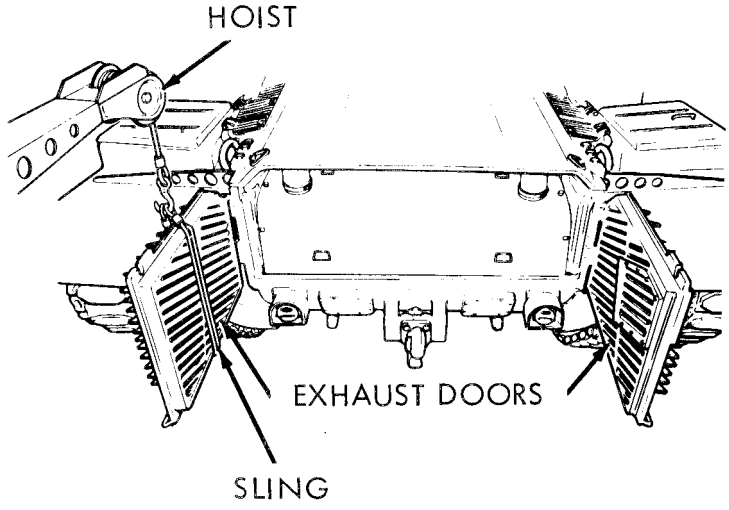
6. Using ball peen hammer with pliers, install two new cotter pins (G) through straight pins (F).

7. Using pliers, spread each side of cotter pin (G) so it cannot be removed.

8. Remove sling.

9. Repeat steps 2 through 8 for opposite sick of vehicle.

10. Close exhaust doors (left door first).



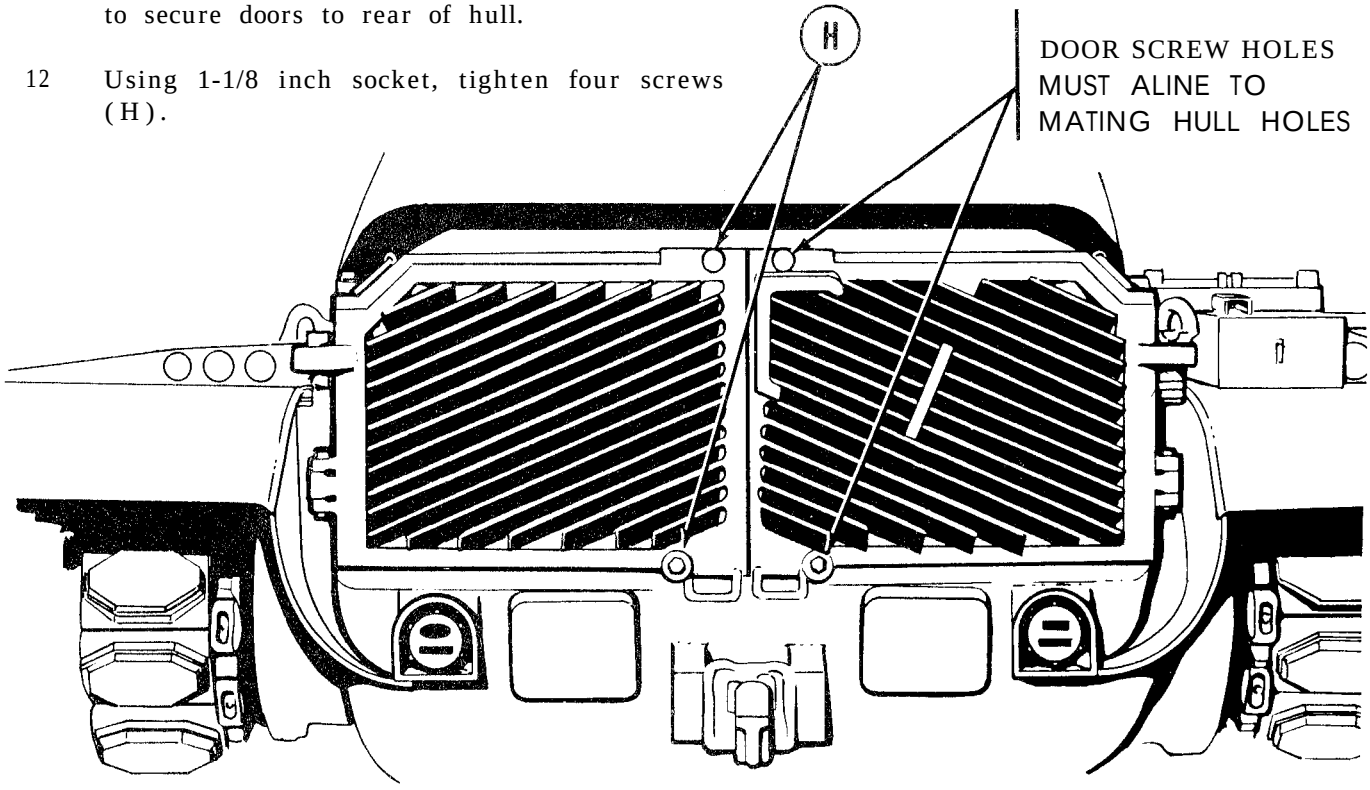
Go on to Sheet 4

TA249692

EXHAUST DOORS REPLACEMENT (sheet 4 of 4)

11. Install four lockwashers, washers. and screws to secure doors to rear of hull.

12 Using 1-1/8 inch socket, tighten four screws (H).



End of Task.

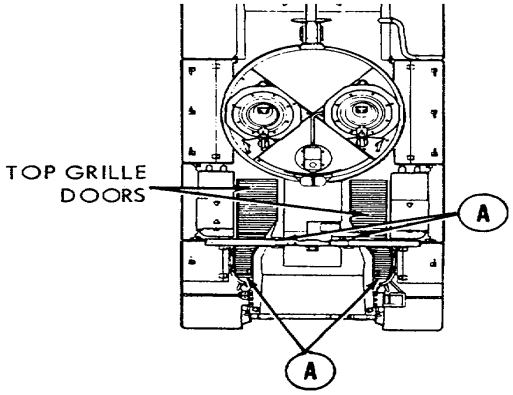
TA249693

TOP DECK FRAME ASSEMBLY REPLACEMENT (Sheet 1 of 10)
Top Deck Replacement (Sheet 1 of 4)

SUBTASK INDEX

PROCEDURE INDEX

TOOLS: Socket handle (breaker bar)
1-1/2 in. socket with 3/4 in. drive
Ratchet with 3/4 in. drive
3/4 in. socket with 1/2 in. drive
1-1/8 in. socket with 3/4 in. drive
15/16 in. socket with 3/4 in. drive
1-1/8 in. open end wrench
Hoist (4,000 lb minimum capacity)
Ratchet with 1/2 in. drive



SUPPLIES: Lockwashers (12 required)

SPECIAL TOOLS: Sling (Item 32, Chapter 3, Section I)

PERSONNEL: Three

REFERENCE: TM 5-5420-2'Z-10

PRELIMINARY PROCEDURES: Launch bridge (TM 5-5420-202-10).
If equipped, remove MICLIC support bracket (TM 9-1375-215-14&P).
Disconnect holddown cylinder hose assemblies CV3 and CV4 at manifold (TM 5-5420-228-24).

REMOVAL:

1. Using 15/16 inch socket with ratchet, loosen four locking screws (A) securing top grille doors.

Go on to Sheet 2

TOP DECK FRAME ASSEMBLY REPLACEMENT (Sheet 4 of 10)
Top Deck Replacement (Sheet 4 of 4)

3. Using 1-1/8 inch wrench, tighten four bolts (two each side) (B) securing top deck (A) to front frame.

4. Mount two intake grille doors (one on each side) of top deck.

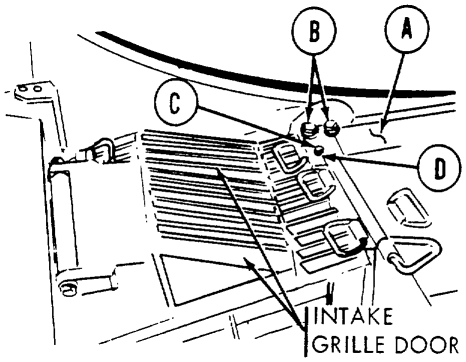
5. Using 3/4 inch socket, install two screws (C) and lockwashers (D) (one each side) securing two intake grille doors to top deck.

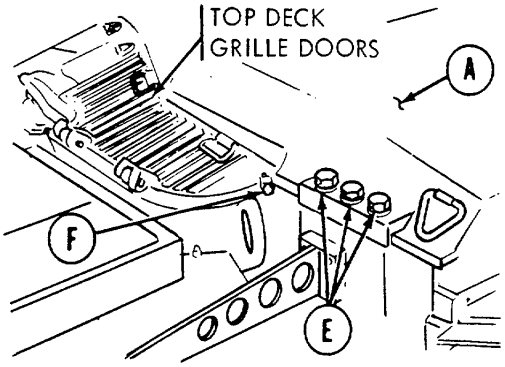
6. If equipped, install MICLIC support bracket (TM 9-1375-215-14&P). If not, install six screws, lockwashers, and flat washers (El to top deck (A).

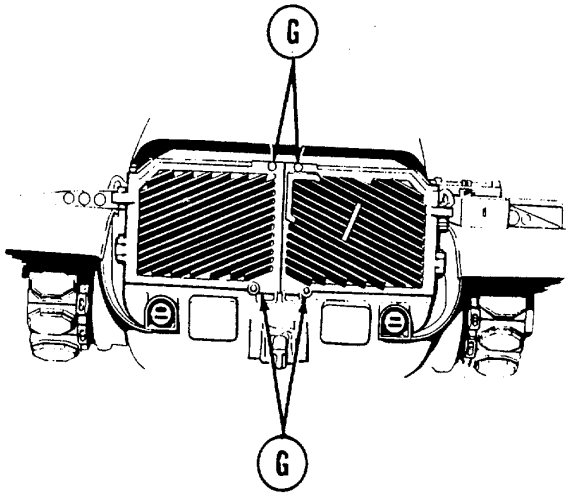
7. Using 1-1/2 inch socket, tighten six screws (E).

8. Close top grille doors (four each side). (TM 5-5420-202-10).

9. Using 15/16 inch socket, tighten two locking screws (F) securing top grille doors.







10. Close two exhaust grille doors. Using 1-1/8 inch socket, install four screw assemblies (G) to secure doors.

11. Connect holddown cylinder hose assemblies CV3 and CV4 at manifold (TM 5-5420-22824).

End of Task

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TOP DECK FRAME ASSEMBLY REPLACEMENT (Sheet 3 of 10)
Top Deck Replacement (Sheet 3 of 4)

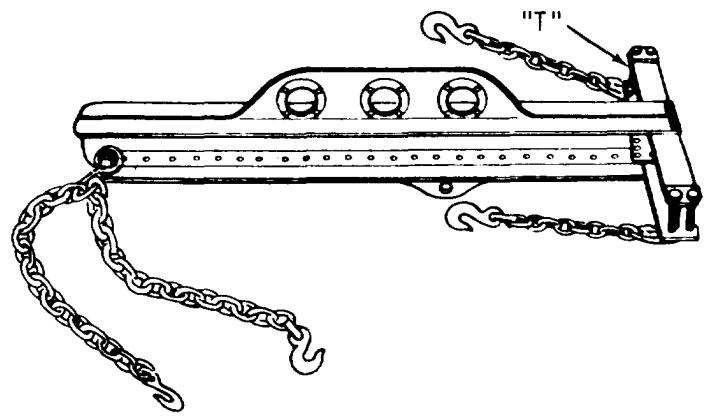
8. Using two other technicians, get sling to lift top deck off vehicle.

9. Place hoist hook through middle eye of sling. Use hoist with at least 4,000 lb capacity to lift top deck.

10. Using hoist, position sling with "T" toward front of vehicle.

11. Guide sling over top deck.

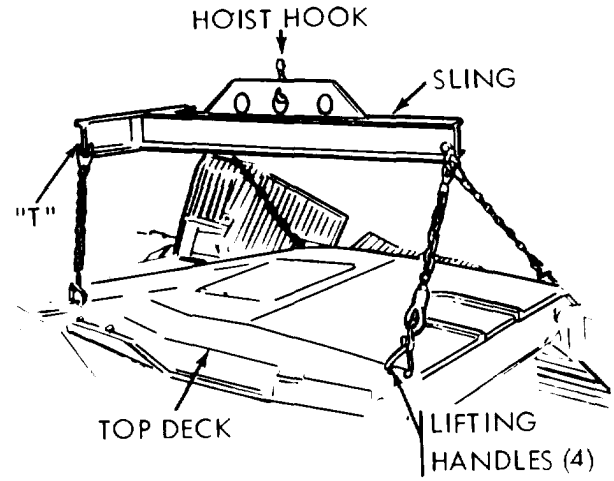
12. Connect four sling hooks to four lifting handles of top deck.



WARNING

Be careful when lifting top deck. Serious injury to personnel can result from careless handling.

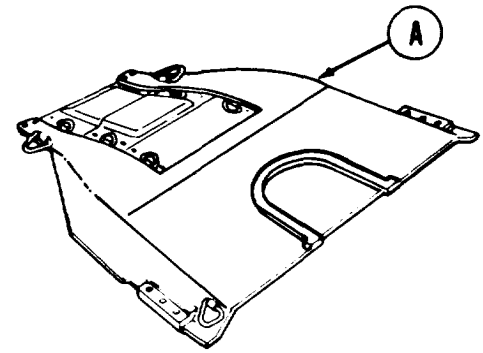
13. Lift top deck off vehicle. Put top deck down in work area.



INSTALLATION:

1. Using hoist with sling, lift top deck (A) into position over powerplant. Sling "T" should be toward front of vehicle.

2. Lower top deck (A) into mounting position.



Go on to Sheet 4

TOP DECK FRAME ASSEMBLY REPLACEMENT (Sheet 4 of 10)
Top Deck Replacement (Sheet 4 of 4)

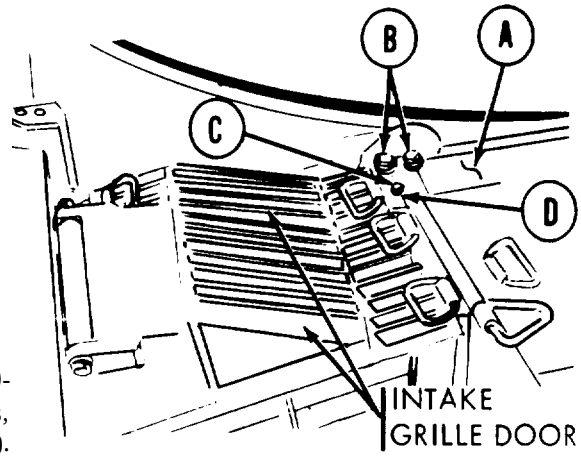
3. Using 1-1/8 inch wrench, tighten four bolts (two each side) (B) securing top deck (A) to front frame.

4. Mount two intake grille doors (one on each side) of top deck.

5. Using 3/4 inch socket, install two screws (C) and lockwashers (D) (one each side) securing two intake grille doors to top deck.

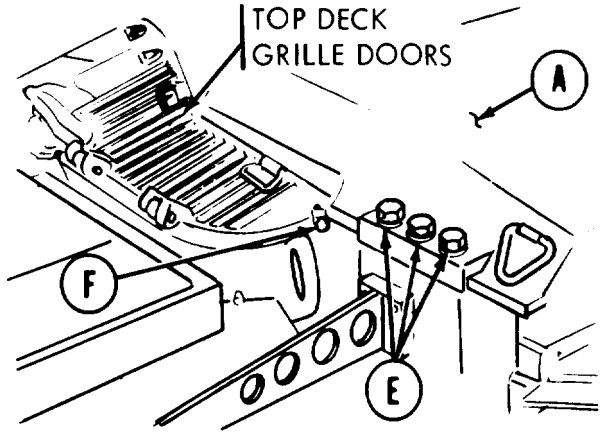
6. If equipped, install MICLIC support bracket (TM 9-1375-215-14&P). If not, install six screws, lockwashers, and flat washers (E) to top deck (A).

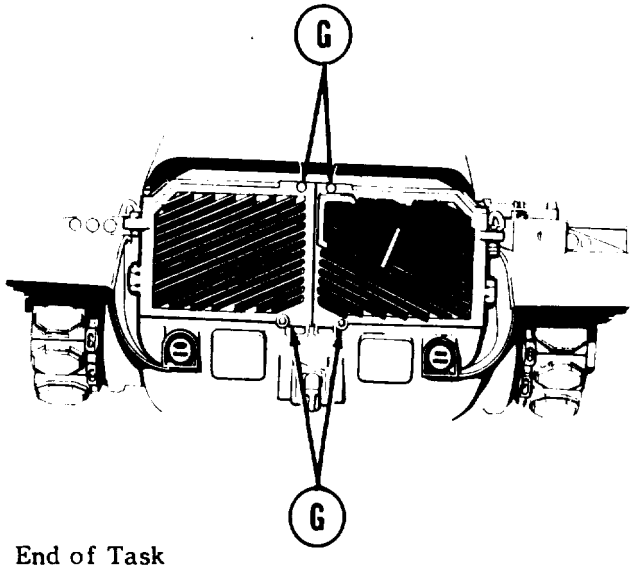
7. Using 1-1/2 inch socket, tighten six screws (E).



8. Close top grille doors (four each side). (TM 5-5420-202-10).

9. Using 15/16 inch socket, tighten two locking screws (F) securing top grille doors.





10. Close two exhaust grille doors. Using 1-1/8 inch socket, install four screw assemblies (G) to secure doors.

11. Connect holddown cylinder hose assemblies CV3 and CV4 at manifold (TM 5-5420-228-24).

End of Task

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TOP DECK FRAME ASSEMBLY REPLACEMENT (Sheet 5 of 10)
Top Deck Door Panels Replacement (Sheet 1 of 2)

TOOLS: 9/16 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
Socket handle (breaker bar)

SUPPLIES: Lockwashers (12 required)

REFERENCE: TM 5-5420-202-10

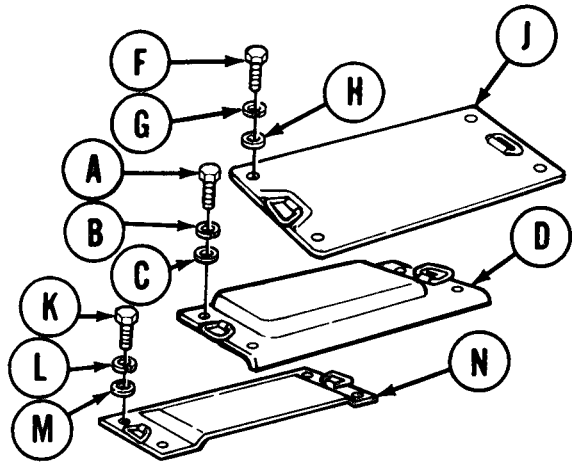
PRELIMINARY PROCEDURE: Launch bridge (TM 5-5420-202-10)

NOTE

These door panels may be removed from top deck either with top deck on or off vehicle.

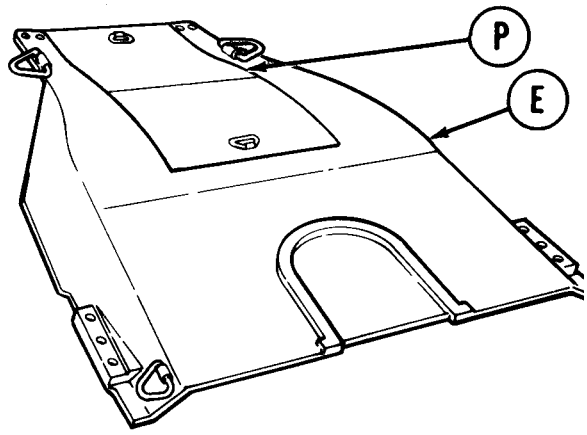
NOTE

It may be necessary to use breaker bar to remove screws.



REMOVAL:

1. Using 9/16 inch socket, remove four screws (A), lockwashers (B) and flat washers (C) securing engine door (D). Remove door (D) from top deck frame (E).
2. Using 9/16 inch socket, remove four screws (F), lockwashers (G), and flat washers (H) securing cover (J). Remove cover (J) from top deck frame (E).
3. Using 9/16 inch socket, remove four screws (K), lockwashers (L), and flat washers (M) securing door (N). Remove door (N) from top deck frame (E).
4. Remove access cover panel (P) from top deck frame (E).



Go on to Sheet 2

TA249698

TOP DECK FRAME ASSEMBLY REPLACEMENT (Sheet 6 of 10)
Top Deck Door Panels Replacement (Sheet 2 of 2)

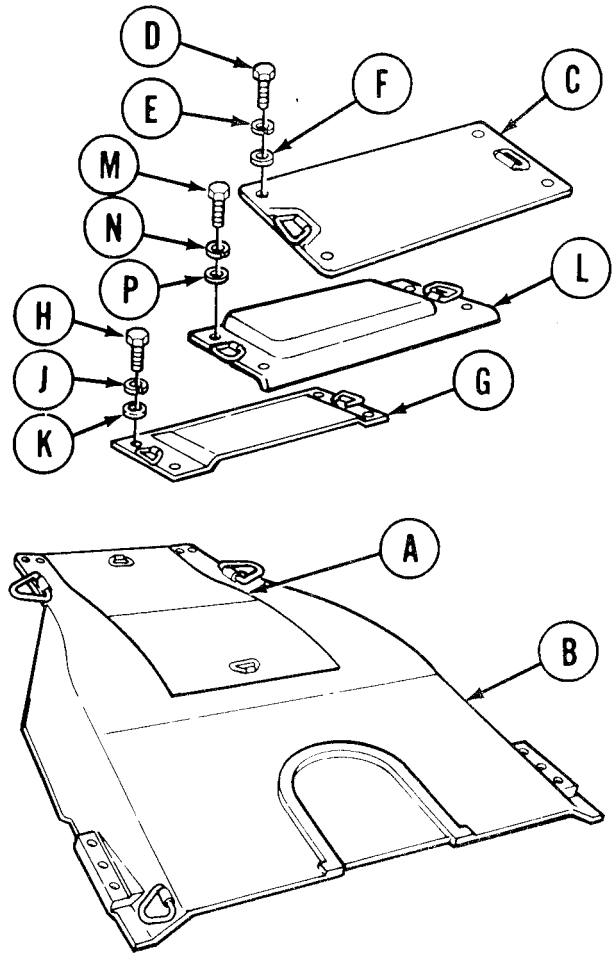
INSTALLATION:

1. Install access cover panel (A) into frame (B).

2. Install door (C) into top deck frame (B). Using 9/16 inch socket, install four screws (D), lockwashers (E), and flat washers (F) securing door.

3. Install cover (G) into top deck frame (B). Using 9/16 inch socket, install four screws (H), lockwashers (J), and flat washers (K) securing cover (G),

4. Install door (L) into top deck frame (B). Using 9/16 inch socket, install four screws (M), lockwashers (N), and flat washers (P) securing door (L).



End of Task

TA249699

TOP DECK FRAME ASSEMBLY REPLACEMENT (Sheet 7 of 10)
Top Deck Insulator Panel Replacement (Sheet 1 of 4)

PROCEDURE INDEX

TOOLS: Ratchet with 1/2in. drive
7/16 in. socket with 1/2 in. drive
9/16 in. socket with 1/2 in. drive
Drift pin
Hoist (capable of lifting 4,000 pounds)

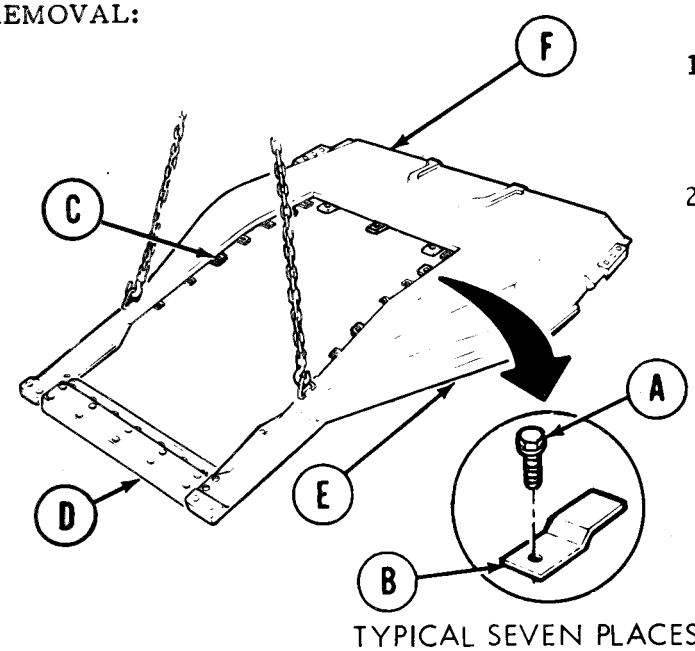
SUPPLIES: Lockwashers (51 required)

SPECIAL TOOLS Sling (Item 32, Chapter 3, Section I)

PERSONNEL: Two

PRELIMINARY PROCEDURES: Remove top deck (page 16-21)
Remove top deck door panels (page 16-25)

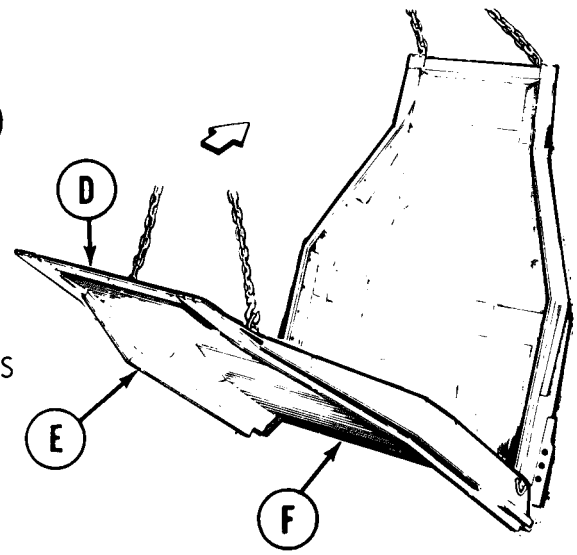
REMOVAL:



TYPICAL SEVEN PLACES

1. **Using 7/16 inch socket, remove seven screws (A) and strap (B) from frame (C).**

2. Fasten two hoist chains to end (D) of top deck (E).



3. Using hoist, raise end (D) of top deck (E) until top deck is standing on end (F).

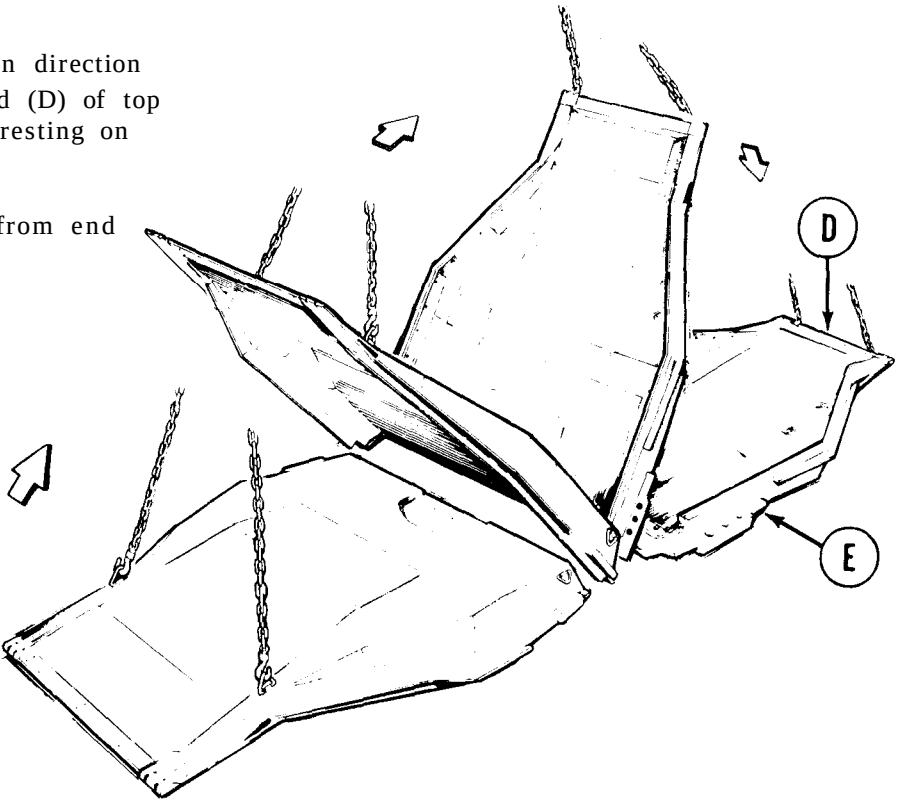
Go on to sheet 2

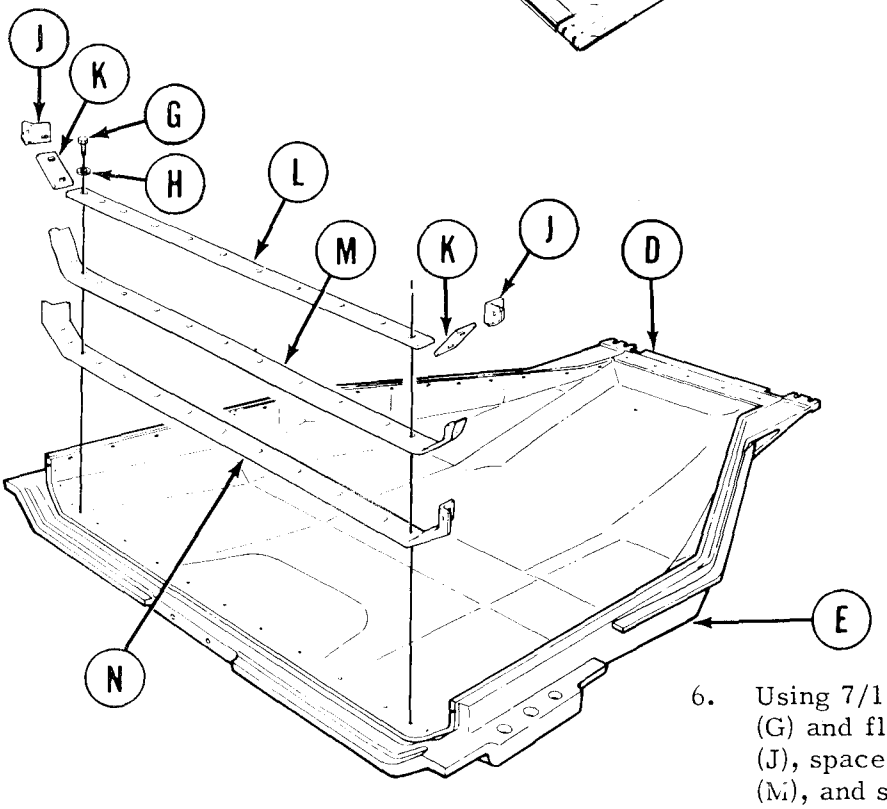
TA249700

TOP DECK FRAME ASSEMBLY REPLACEMENT (Sheet 8 of 10)
Top Deck Insulator Panel Replacement (Sheet 2 of 4)

4. Swing hoist about 1 foot in direction of arrows, slowly lower end (D) of top deck (E) until top deck is resting on its top.

5. Remove two hoist chains from end of top deck (E).



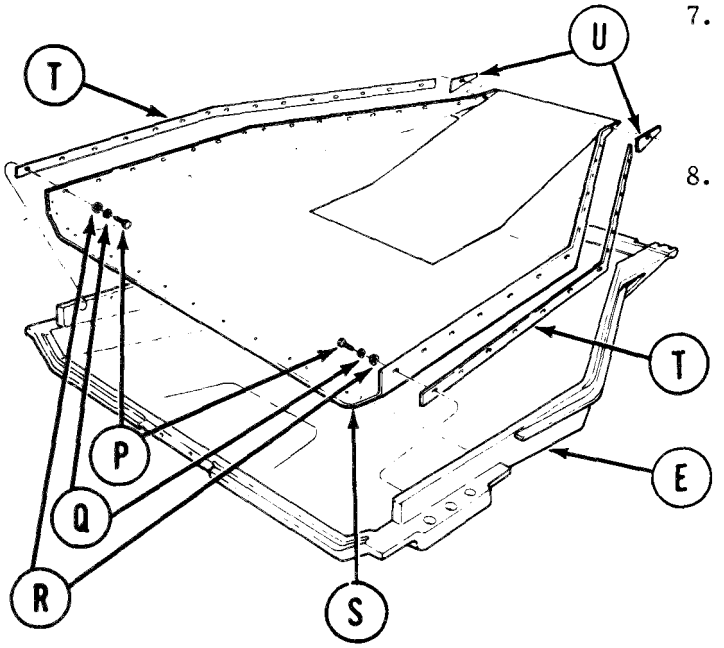


6. Using 7/16 inch socket, remove 19 screws (G) and flat washers (H) holding supports (J), spacers (K), retainer plate (L), seal (M), and support (N).

Go on to Sheet 3

TA249701

TOP DECK FRAME ASSEMBLY REPLACEMENT (Sheet 9 of 10)
Top Deck Insulator Panel Replacement (Sheet 3 of 4)



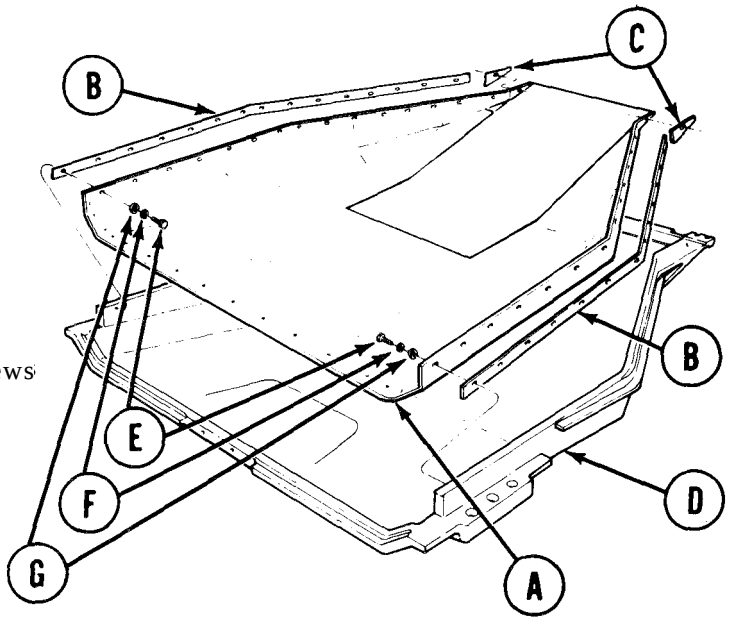
7. Using 9/16 inch socket, remove 32 screws (P), lockwashers (Q), and flat washers (R) holding insulator panel (S) to top deck (E).

8. Manually remove insulator panel (S) and seals (T and U) from top deck (E).

INSTALLATION:

1. Manually position insulator panel (A) and seals (B and C) into top deck (D).

2. Using drift pin to line up screw holes, use 9/16 inch socket to install 32 screws (E), lockwashers (F), and flat washers (G) to hold insulator panel (A) to top deck (D).



Go on to Sheet 4

TA249702

TOP DECK FRAME ASSEMBLY REPLACEMENT (Sheet 10 of 10)
Top Deck Insulator Panel Replacement (Sheet 4 of 4)

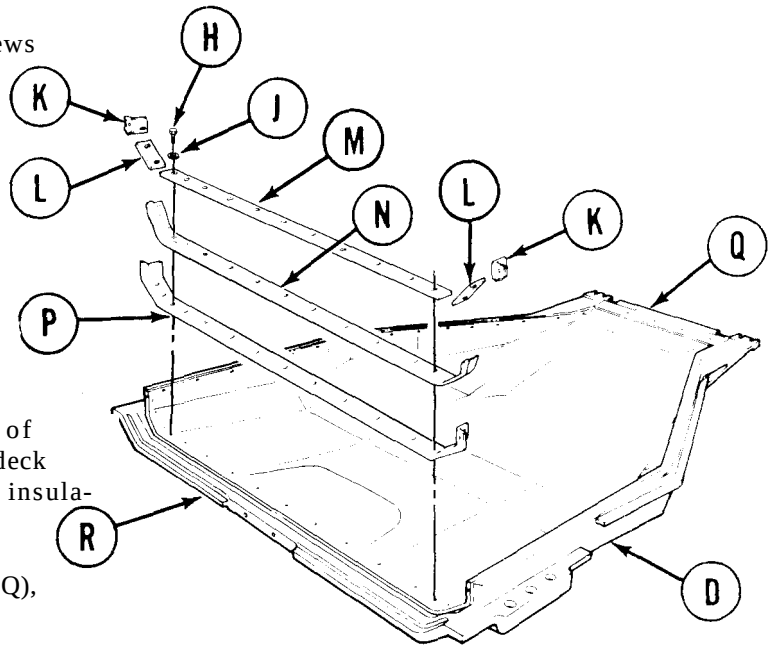
3. Using drift pin to line up screw holes, use 7/16 inch socket to install 19 screws (H) and washers (J) holding supports (K), spacers (L), retainer plate (M), seal (N), and support (P).

4. Fasten two hoist chains to end (Q) of top deck (D).

5. Using hoist, raise end (Q) of top deck (D)until top deck is standing on end (R).

6. Swing hoist about 1 foot in direction of arrows, slowly lower end (Q) of top deck (D) until top deck (D) is resting with insulator panel facing down.

7. Remove two hoist chains from ends (Q), of top deck (D).



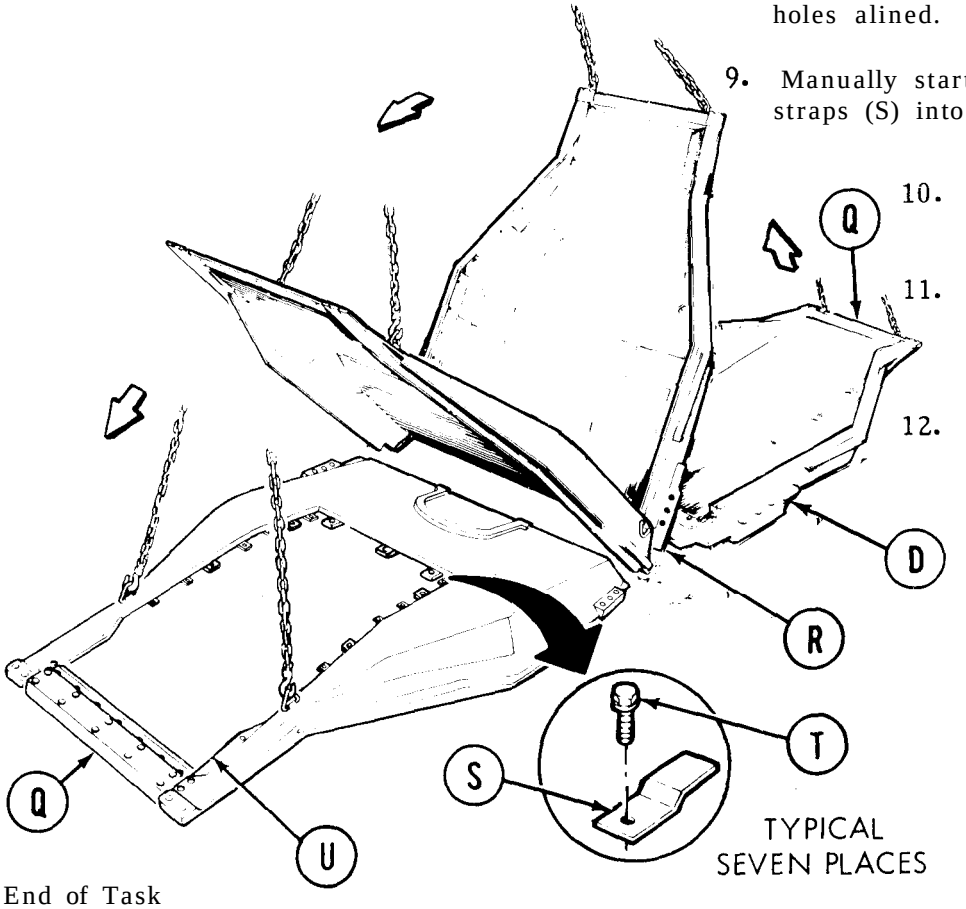
8. Position seven straps (S) on frame with holes alined.

9. Manually start seven screws (T) through straps (S) into frame (U).

10. Using 7/16 inch socket, tighten seven screws (T).

11. Install top deck door panels (page 16-26).

12. Install top deck (page 16-23).



End of Task

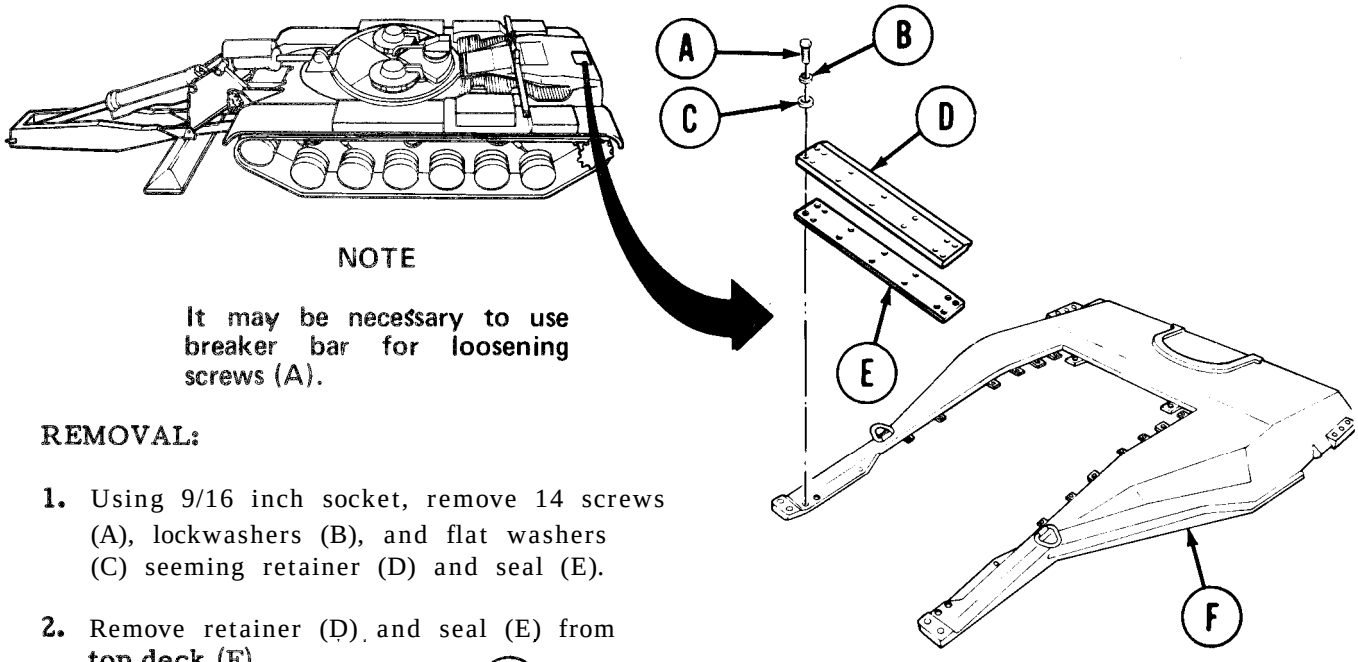
TA249703

ENGINE ACCESS PANEL SEAL REPLACEMENT (Sheet 1 of 2)

TOOLS: Socket handle (breaker bar)
7/16 in. socket with 1/2 in. drive
9/16 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
5 in. extension with 1/2 in. drive

SUPPLIES: Lockwashers (42 required)

PRELIMINARY PROCEDURE: Remove three top deck door panels (page 16-25).

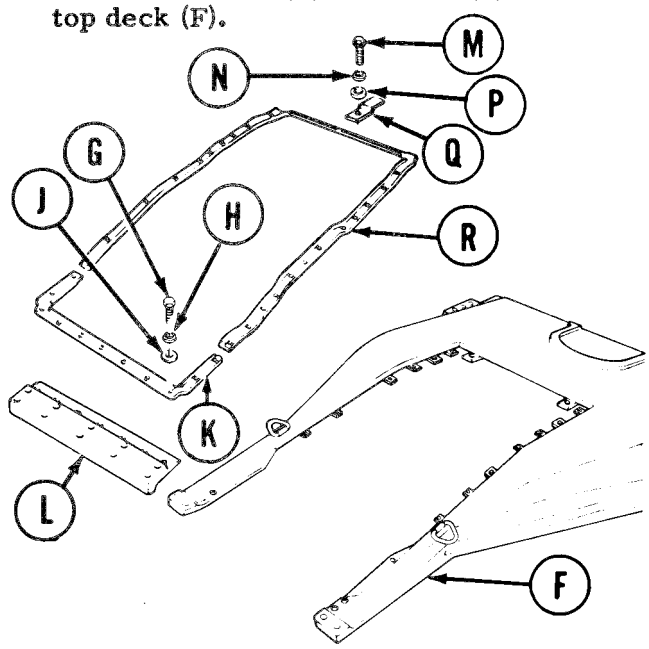


NOTE

It may be necessary to use breaker bar for loosening screws (A).

REMOVAL:

1. Using 9/16 inch socket, remove 14 screws (A), lockwashers (B), and flat washers (C) seeming retainer (D) and seal (E).
2. Remove retainer (D) and seal (E) from top deck (F).



3. Using 7/16 inch socket, remove seven screws (G), lockwashers (H) and flat washers (J) securing small seal (K) to support (L).
4. Remove support (L) and small seal (K).
5. Using 7/16 inch socket, remove 21 screws (M), lockwashers (N), flat washers (P), and seven straps (Q) securing large seal (R) to top deck (F).
6. Remove large seal (R).

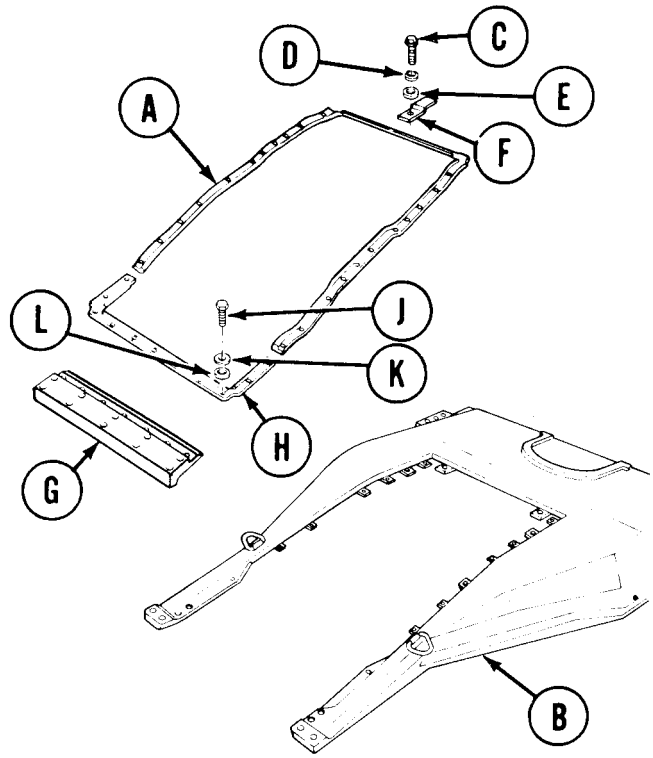
Go on to sheet 2

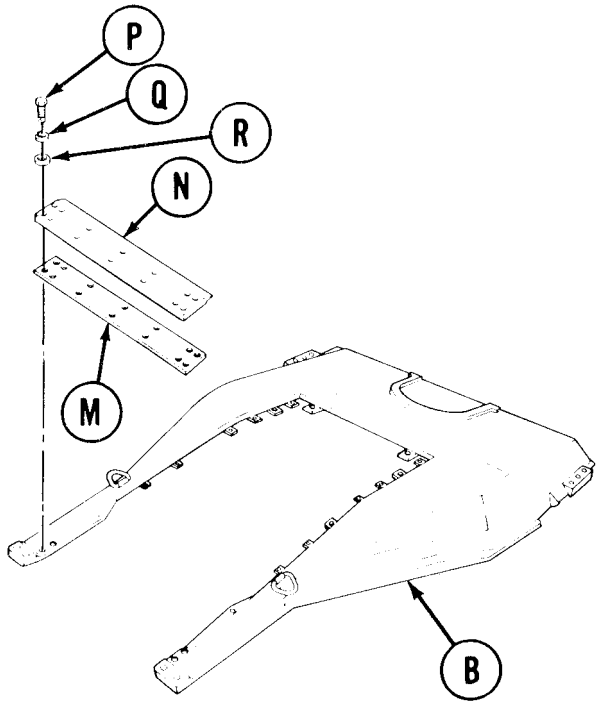
TA249704

ENGINE ACCESS PANEL SEAL REPLACEMENT (Sheet 2 of 2)

INSTALLATION:

1. Place large seal (A) in position on top deck (B).
2. Using 7/16 inch socket, install 21 screws (C), lockwashers (D), flat washers (E), and seven straps (F).
3. Place support (G) in position on top deck (B).
4. Place small seal (H) on support (G).
5. Using 7/16 inch socket, install 7 screws (J), lockwashers (K) and flat washers (L).





6. Place seal (M) and retainer (N) in position on top deck (B).
7. Using 9/16 inch socket, install 14 screws (P), lockwashers (Q) and flat washers (R).
8. Install three top deck door panels (page 16-26).

Encl of Task

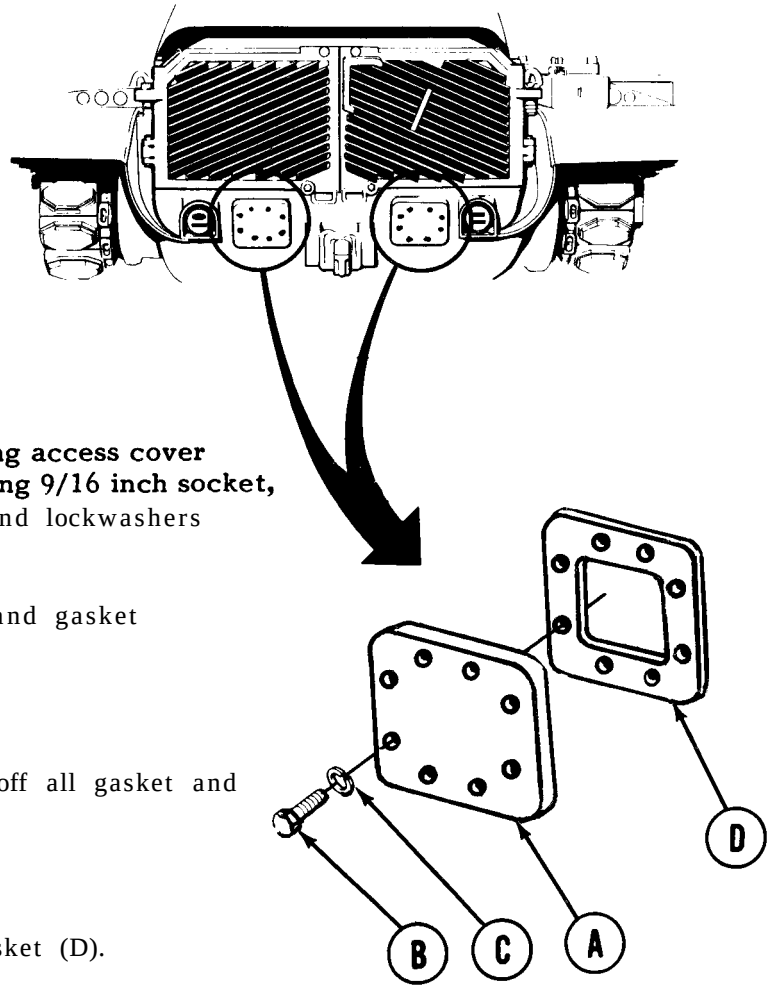
TA249705

REAR TRANSMISSION ACCESS COVER REPLACEMENT (Sheet 1 of 1)

TOOLS: 9/16 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
Putty knife

SUPPLIES: Adhesive (Item 4, Appendix D)
Gasket
Lockwashers (8 required)

PERSONNEL: Two



REMOVAL:

1. **With one technician holding access cover (A) and another person using 9/16 inch socket,** remove eight screws (B) and lockwashers (C).
2. Remove access cover (A) and gasket (D).
3. Throw gasket (D) away.
4. Using putty knife, scrape off all gasket and adhesive residue.

INSTALLATION:

1. Apply adhesive to new gasket (D).
2. With one technician holding cover (A) and gasket (D) in position on vehicle and another person using 9/16 inch socket, install eight screws (B) and lockwashers (C).

End of Task

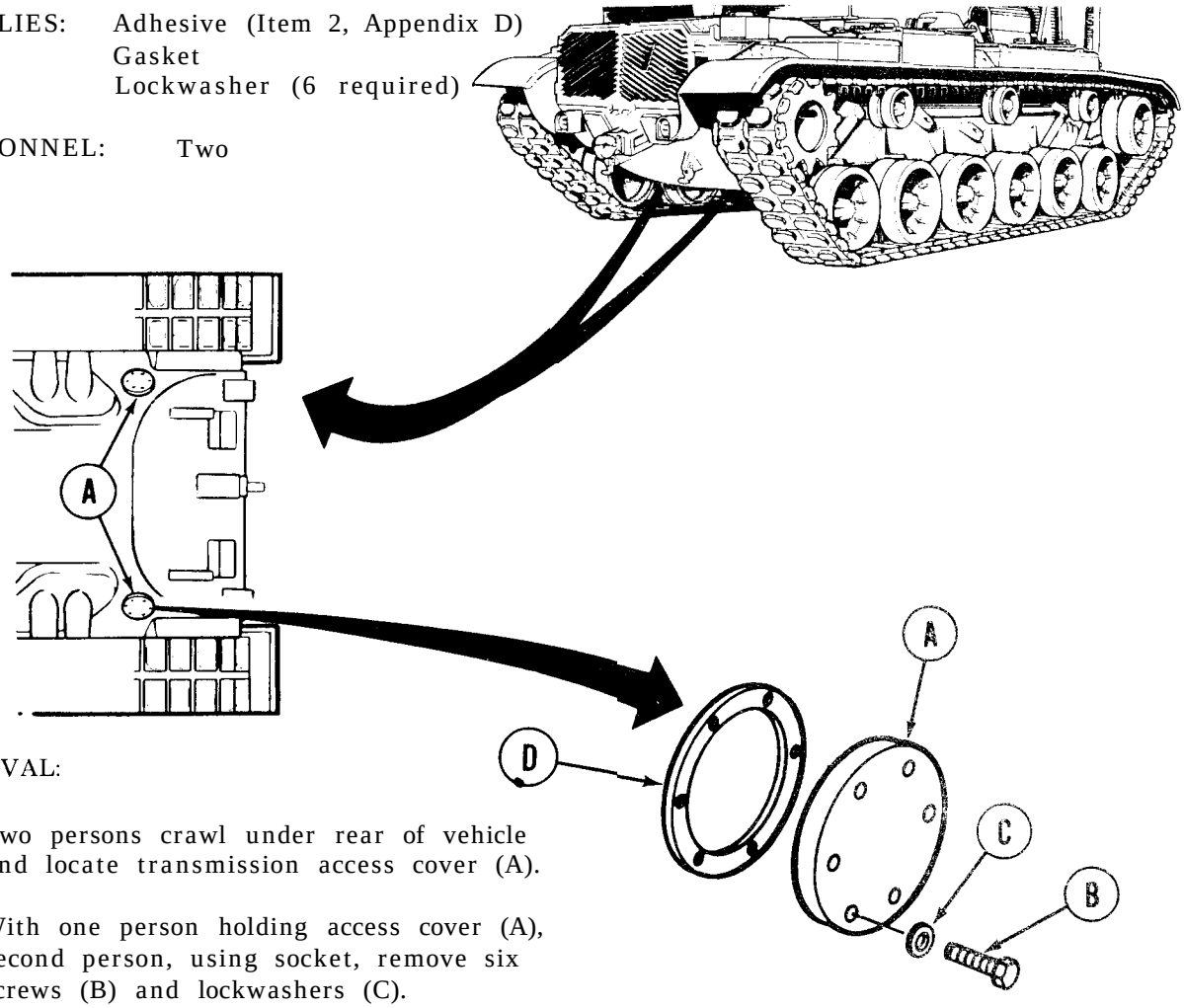
TA249706

TRANSMISSION DRAIN ACCESS COVER REPLACEMENT (Sheet 1 of 1)

TOOLS: 9/16 in. socket with 1/2 in. drive
Putty knife
Ratchet with 1/2 in. drive
Pry bar
Hammer, ball peen, 2-pound

SUPPLIES: Adhesive (Item 2, Appendix D)
Gasket
Lockwasher (6 required)

PERSONNEL: Two



REMOVAL:

1. Two persons crawl under rear of vehicle and locate transmission access cover (A).
2. With one person holding access cover (A), second person, using socket, remove six screws (B) and lockwashers (C).
3. Remove access cover (A) and gasket (D) with pry bar and hammer. Throw gasket away.
4. Using putty knife, scrape off all gasket and adhesive residue.

INSTALLATION:

1. Apply adhesive to new gasket (D) and position onto access cover (A).
2. With one person holding access cover (A) and gasket (D) in position, second person, using socket, install six screws (B) and lockwashers (C) securing access cover (A) to vehicle.

End of Task

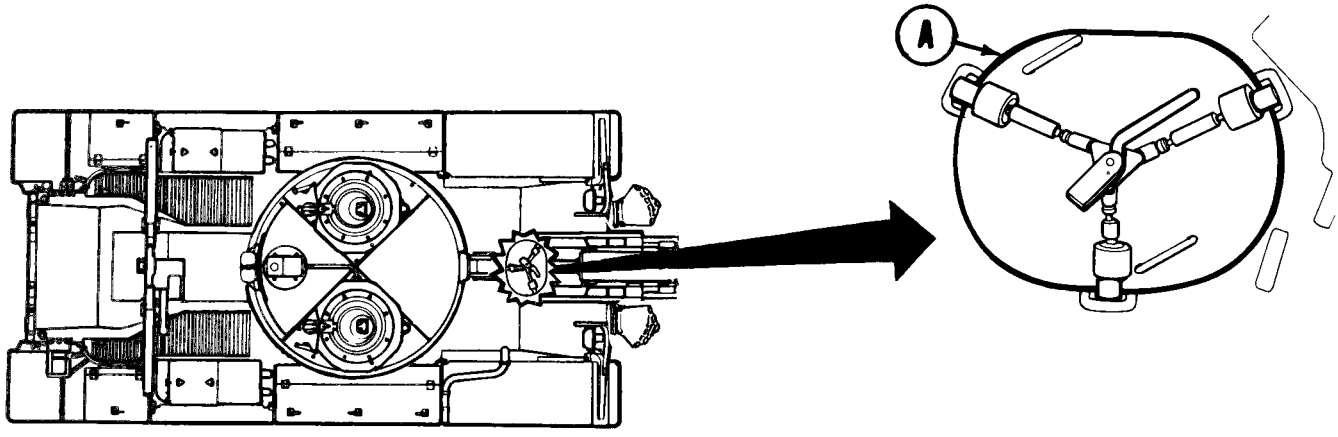
TA249707

COVER ASSEMBLY (ESCAPE HATCH) REPLACEMENT (LATE MODEL) (Sheet 1 of 2)

TOOLS: Crowbar
Hydraulic floor jack

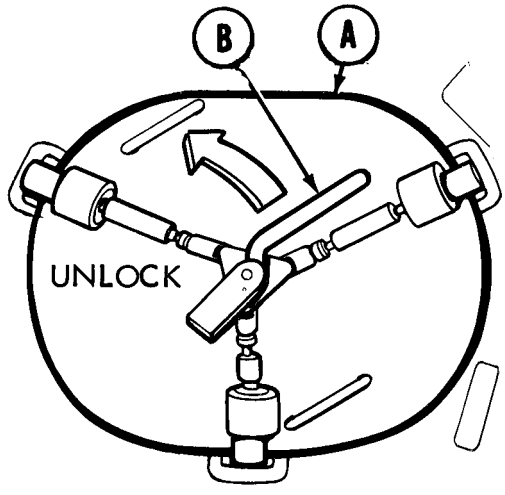
PERSONNEL: Two, if hydraulic jack is not available three personnel are required (two to lift cover during installation)

REFERENCE: TM 5-5420-202-10



WARNING

Do not stand on cover.



REMOVAL:

1. Place floor jack under cover assembly (A) beneath vehicle during removal.

2. Bump cover assembly handle (B) to the left with heel of foot. Cover will drop out of vehicle.

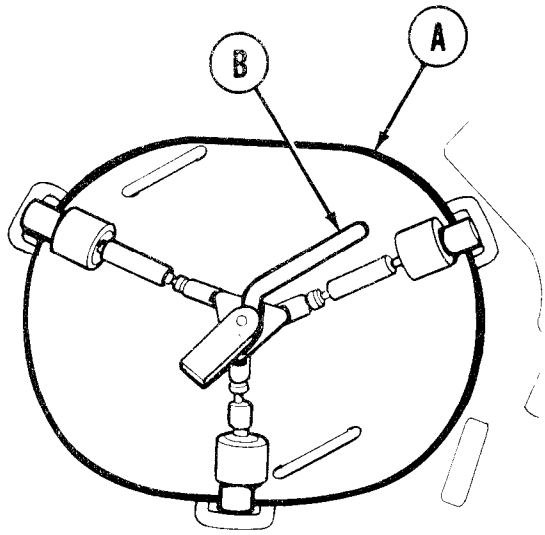
Go on to Sheet 2

TA249708

COVER ASSEMBLY (ESCAPE HATCH) REPLACEMENT (LATE MODEL) (Sheet 2 of 2)

3. Slide cover (A) from under vehicle.

INSTALLATION:



1. Position floor jack directly beneath hull opening with cover (A) in proper alinement with hull opening.

2. Raise cover (A) into position. Slight repositioning may be needed to aline cover with hull opening. Use crowbar for repositioning.

3. Move cover handle (B) to the right and lock cover assembly (A) in position.

4. Remove jack.

End of Task

TA249709

COVER ASSEMBLY (ESCAPE HATCH) REPAIR (LATE MODEL) (Sheet 1 of 5)

PROCEDURE INDEX

TOOLS: 3/16 in. socket head screw key
3/4 in. combination box and open end wrench
5/8 in. combination box and open end wrench
12 oz. hammer
Center punch
1/8 in. drive punch
Putty knife
10 in. adjustable wrench

SUPPLIES: Dry cleaning solvent (Item 55, Appendix D)
Silicone compound (Item 32, Appendix D)
Rags (Item 65, Appendix D)
Gloves (Item 69, Appendix D)
Goggles (Item 70, Appendix D)

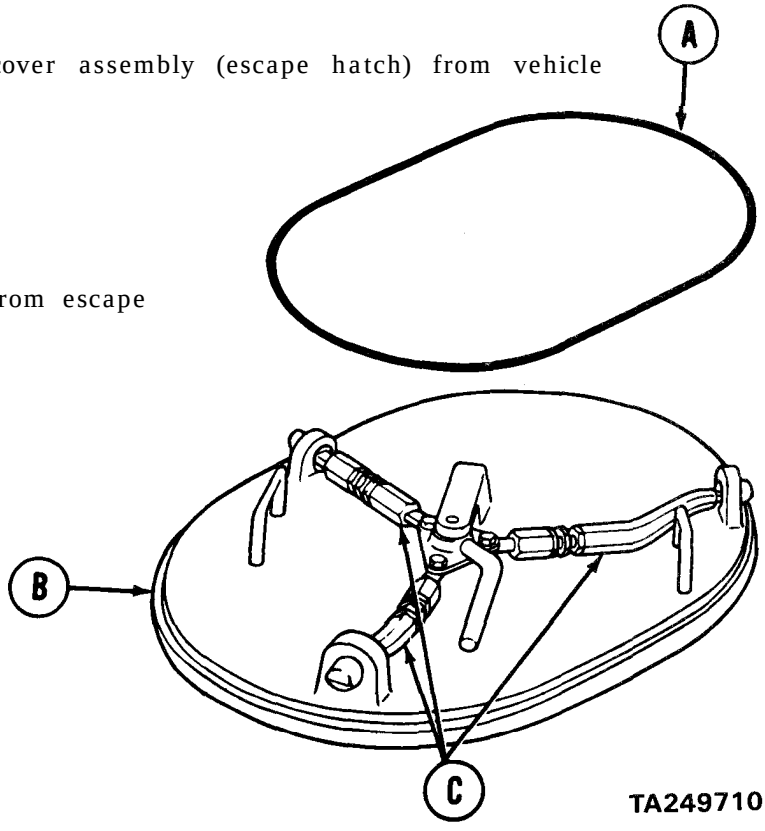
PRELIMINARY PROCEDURE: Remove cover assembly (escape hatch) from vehicle

DISASSEMBLY:

1. Using putty knife, remove seal (A) from escape hatch (B).

NOTE

Repair of three escape hatch linkage assemblies (C) is identical.



TA249710

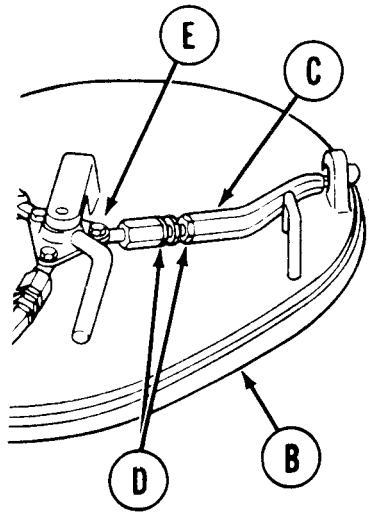
Go on to Sheet 2

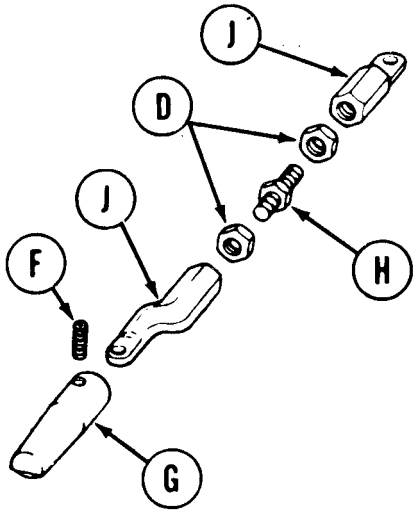
COVER ASSEMBLY (ESCAPE HATCH) REPAIR (LATE MODEL) (Sheet 2 of 5)

2. Using adjustable wrench to hold linkage (C), use 3/4 inch wrench and loosen two jam nuts (D).

3. Using 5/8 inch wrench, remove screw (E) securing linkage (C) to cover (B).

4. Remove linkage (C) from cover (B).

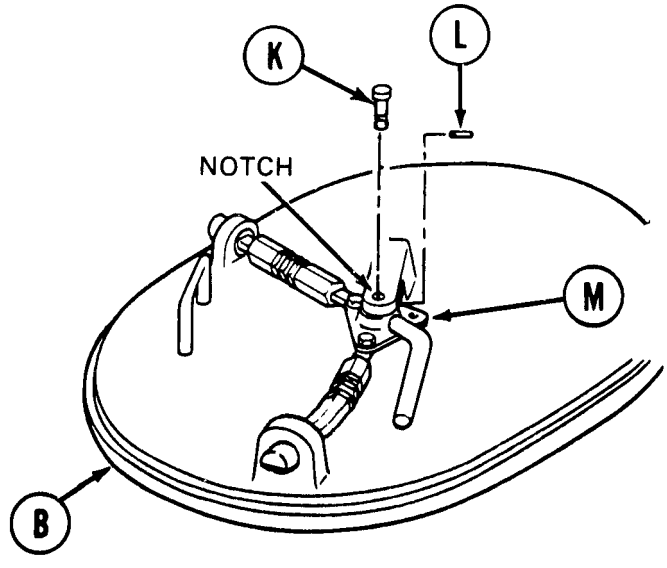




5. Using socket head screw key, remove screw (F) securing surface bolt (G) to linkage.

6. Remove surface bolt (G).

7. Using 3/4 inch wrench, remove two end connectors (J) and jamnuts (D) from stud (H).



8. Using hammer and punch, make a notch on grooved pin (K) and on cover (B) for alinement purposes during installation.

9. Using hammer and punch, drive spring pin (L) from handle assembly (M). Do not remove.

10. Remove grooved pin (K) from handle assembly (M) by pushing up from bottom.

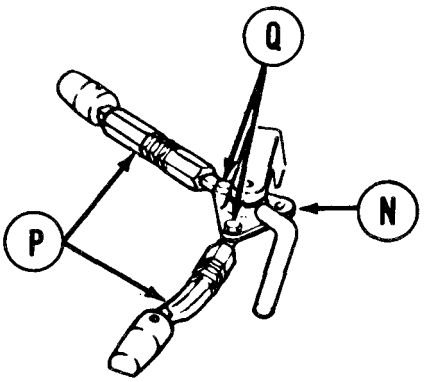
Go on to Sheet 3

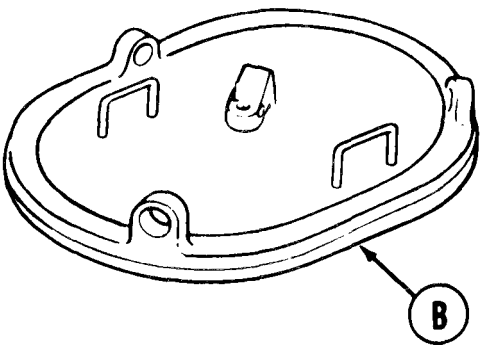
TA249711

COVER ASSEMBLY (IESCAPE HATCH) REPAIR (LATE MODEL) (Sheet 3 of 5)

11. Remove handle (N) assembly and two lingages (P) from cover (B).

12. Using 5/8 inch wrench, remove two screws (Q) separating handle assembly from two linkages.





CLEANING AND INSPECTION:

1. Using rags, clean surface bolts and linkages of any excess dirt buildup.

2. Clean seal groove and seal with dry cleaning solvent and coat with silicone compound.

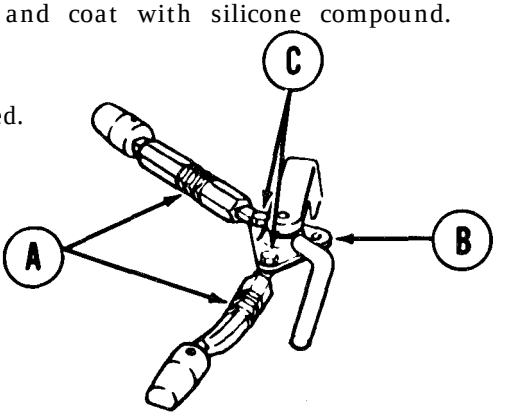
3. Inspect all components for damage or wear. Replace as required.

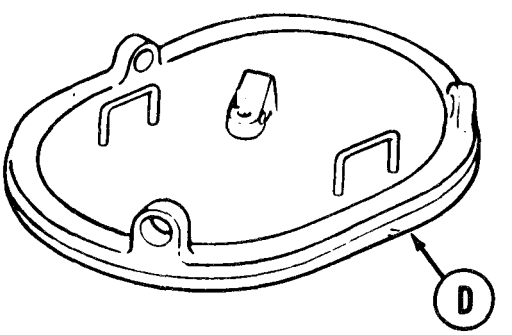
ASSEMBLY:

1. Place two linkages (A) in position on handle assembly (B).

2. Using 5/8 inch wrench, install two screws (C) securing linkages (A) to handle assembly (B).

3. Place linkages and handle assembly (A and B) in position on access cover (D).

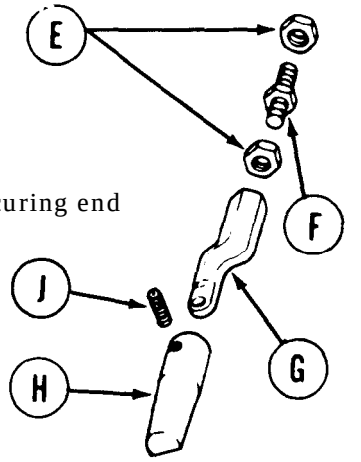




Go on to sheet 4

TA249712

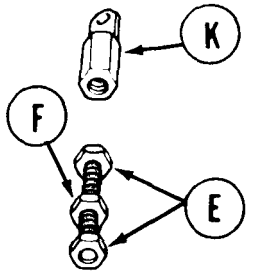
COVER ASSEMBLY (ESCAPE HATCH) REPAIR (LATE MODEL (Sheet 4 of 5)

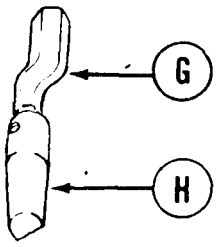


4. Place two jamnuts (E) on stud (F).

5. Place end connector (G) into surface bolt (H).

6. Using socket head screw key, install screw (J) in surface bolt (H) securing end connector (G).

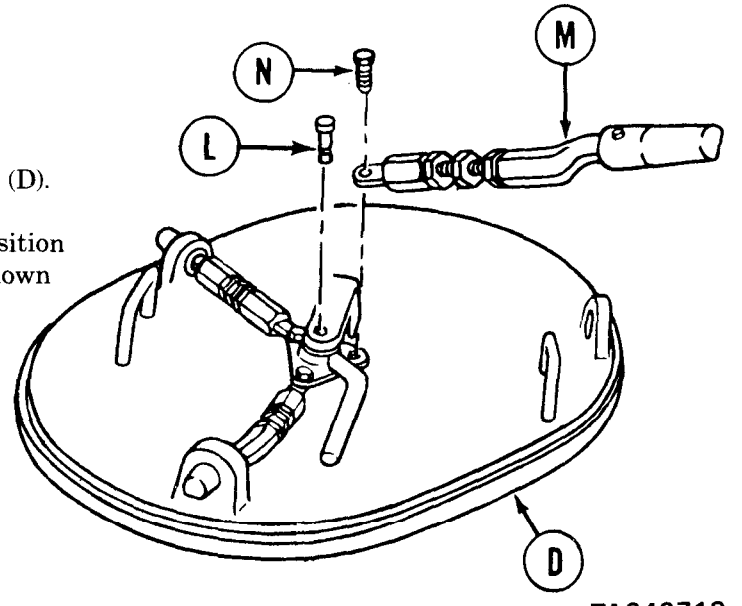




7. Place end connector and surface bolt (G and H) on one of studs (F).

8. Place end connector (K) on other end of stud (F).

9. Using 3/4 inch wrench, tighten jamnuts (E) up against both end connectors (G and K).



10. Install grooved pin (L) in position on cover (D).

11. Place complete linkage assembly (M) in position on cover (D), notch on surface bolt (H) in down position.

12. Using 5/8 inch wrench, install screw (N) securing linkage (M) to cover (D).

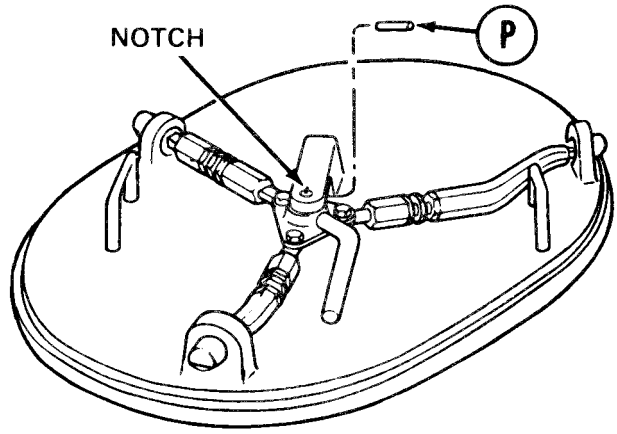
TA249713

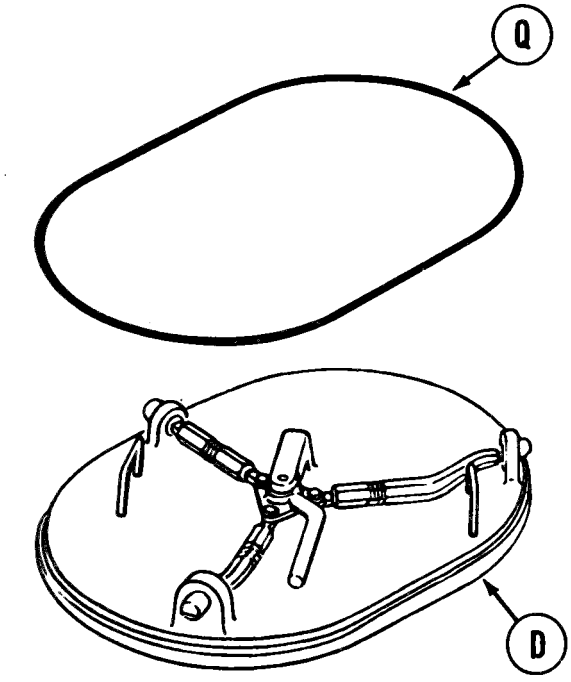
Go on to Sheet 5

COVER ASSEMBLY (ESCAPE HATCH) REPAIR (LATE MODEL) (Sheet 5 of 5)

13. Aline the two notches made during disassembly.

14. Using hammer and punch, install spring pin (P).





15. Make sure seal (Q) and seal groove have silicone compound applied.

16. Install seal (Q) on cover (D).

17. Install escape hatch in vehicle.

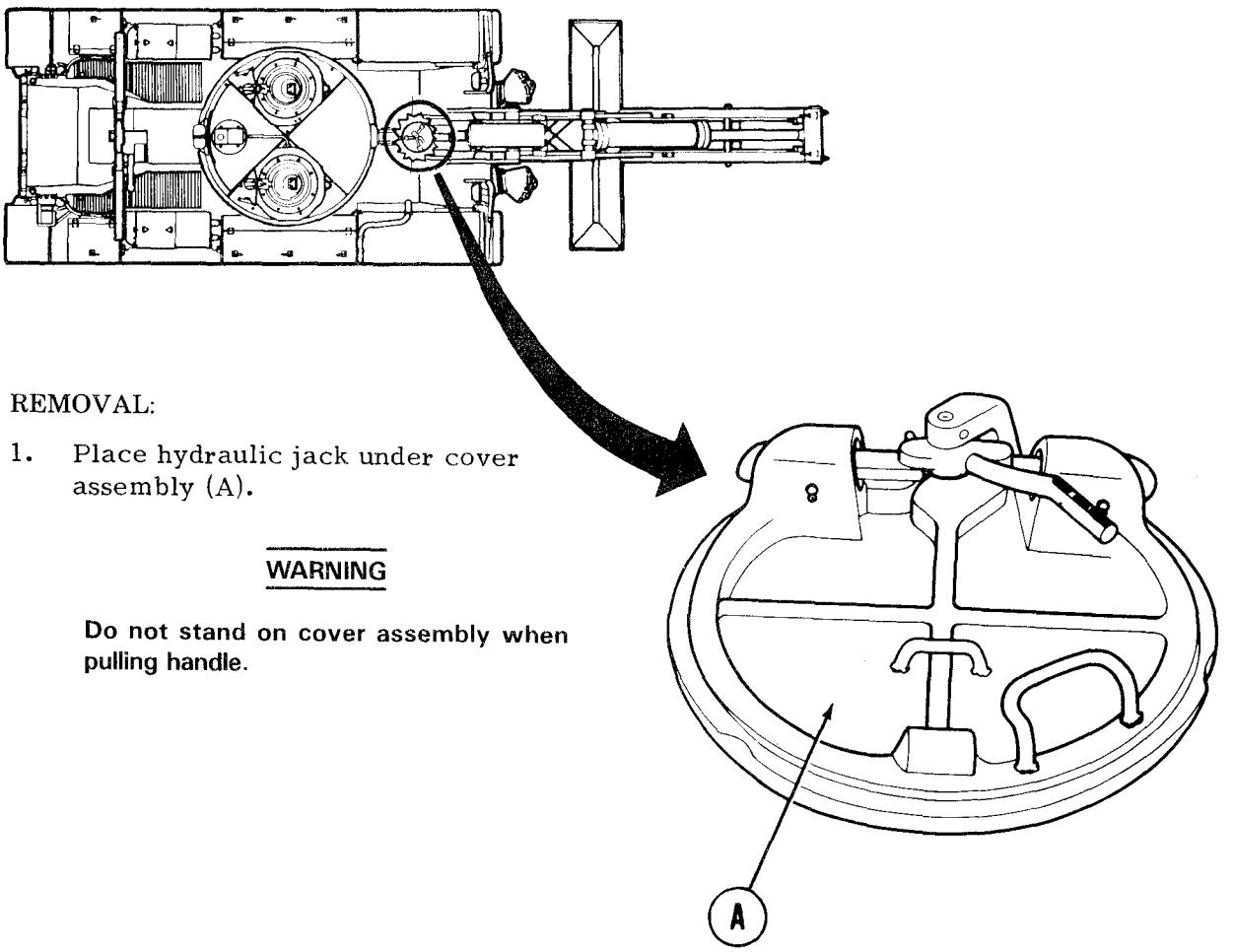
End of Task

TA249714

COVER ASSEMBLY (ESCAPE HATCH) REPLACEMENT (EARLY MODEL) (Sheet 1 of 2)

TOOLS: Crowbar
Hydraulic floor jack

PERSONNEL: Two



REMOVAL:

1. Place hydraulic jack under cover assembly (A).

WARNING

Do not stand on cover assembly when pulling handle.

Go on to Sheet 2

TA249715

COVER ASSEMBLY (ESCAPE HATCH) REPLACEMENT (EARLY MODEL) (Sheet 2 of 2)

NOTE

One soldier will be inside vehicle to position cover and to hold handle (B).

2. Rotate handle (B) clockwise.

3. Lower jack and slide escape hatch (A) from under vehicle.

INSTALLATION:

1. Position escape cover (A) on hydraulic jack.

2. Position hydraulic jack directly beneath hull opening with cover in proper alinement with hull opening.

NOTE

One soldier will be inside vehicle to position cover and to hold handle (B).

3. Raise cover (A) into position. Hold lock handle (B) clockwise. Slight repositioning may be needed to aline cover with hull opening. Use crowbar fpr repositioning.

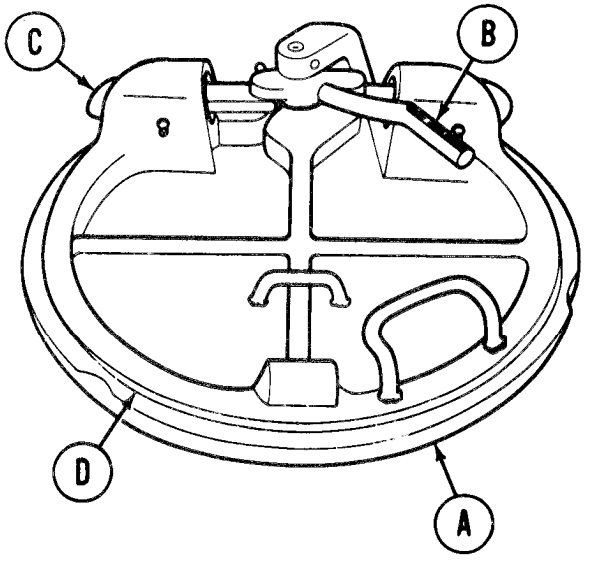
4. Release wire or rope to allow plungers (C) to engage hull lugs.

5. Make sure plungers (C) fully engage hull lugs.

6. Make sure seal (D) is fully seated around hull opening.

7. Make sure handle (B) is in fully closed (counterclockwise) position.

8. Remove jack.



TA249716

End of Task

COVER ASSEMBLY (ESCAPE HATCH) REPAIR (EARLY MODEL) (Sheet 1 of 5)

PROCEDURE INDEX

TOOLS: 3/16 in. socket head screw key
1/4 in. drive punch
Retaining ring pliers
7/16 in. combination box and open end wrench
Putty knife
Hammer
Flat-tip screwdriver

SUPPLIES: Silicone compound (Item 32, Appendix D)
Dry cleaning solvent (Item 55, Appendix D)
Gloves (Item 69, Appendix D)
Goggles (Item 70, Appendix D)

PRELIMINARY PROCEDURE: Remove cover assembly (escape hatch) from vehicle (page 16-35)

Go on to Sheet 2

COVER ASSEMBLY (ESCAPE HATCH) REPAIR (EARLY MODEL) (Sheet 2 of 5)

DISASSEMBLY:

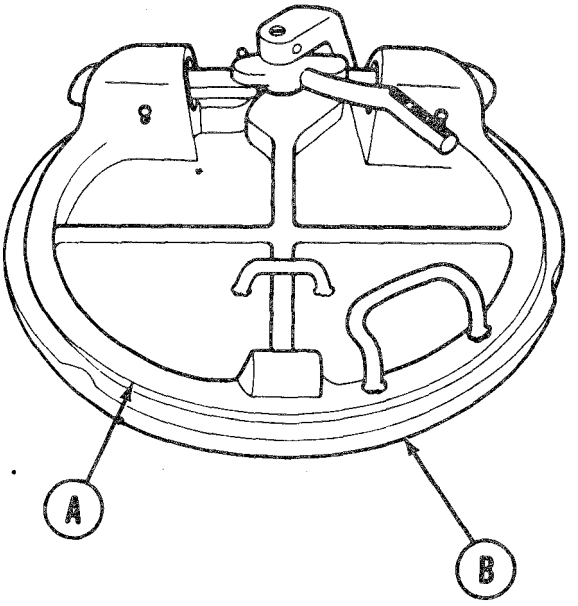
1. Using putty knife, remove seal (A) from cover assembly (B).

2. Using socket head screw key, remove two internal bolts (C) from plungers (D).

3. Remove two plungers (D).

4. Using hammer and punch, remove headless pin (E).

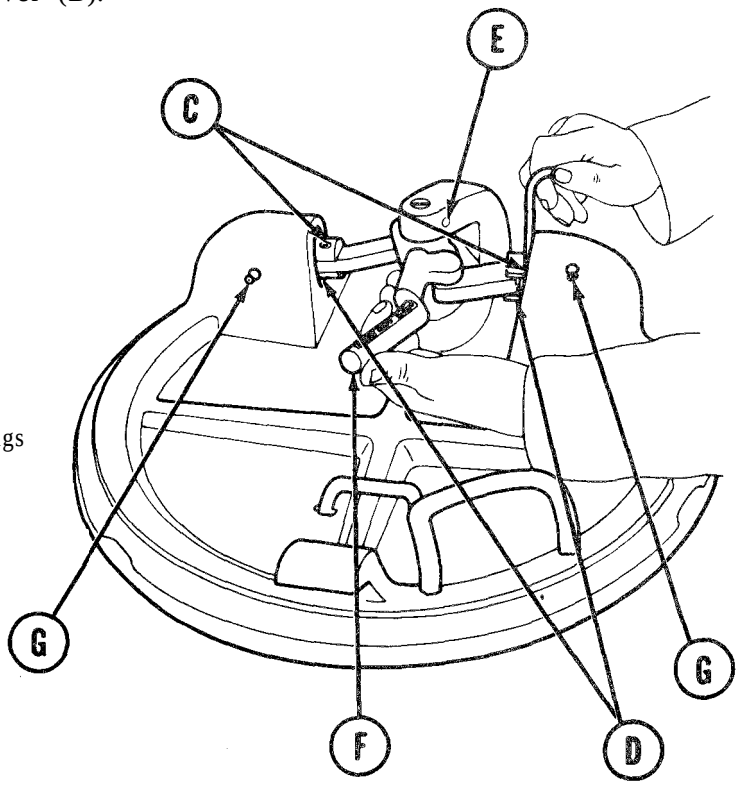
5. Remove handle assembly (F) from cover (B).



NOTE

Some cover assemblies do not have lubrication fittings, if your cover assembly does not have lubrication fittings, skip step 6 and go on to step 7.

6. Using wrench, remove two lubrication fittings (G) from cover (B).

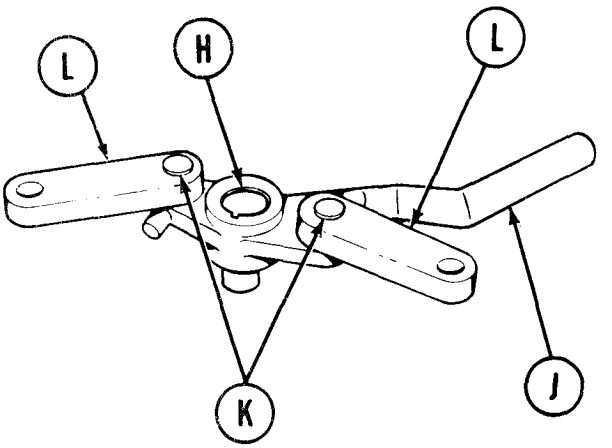


Go on to Sheet 3

TA249718

COVER ASSEMBLY (ESCAPE HATCH) REPAIR (EARLY MODEL) (Sheet 3 of 5)

VIEW SHOWN UPSIDE DOWN FOR CLARITY



7. Remove spring assembly (H) from handle (J).

8. Using pliers, remove two retaining rings (K).

9. Remove two links (L) from handle (J).

CLEANING AND INSPECTION:

1. Using rags, clean all parts of grease and dirt.

WARNING

Dry cleaning solvent P-D-680 is toxic and flammable. To prevent personal injury, wear protective goggles and gloves and use only in a well-ventilated area. Avoid contact with skin, eyes, and clothes and don't breathe vapors. Do not use near open flame or excessive heat. The flash point for Type #1 Dry Cleaning Solvent is 100%? (38°C) and for Type #2 is 138% (50°C). If you become dizzy while using cleaning solvent, get fresh air immediately and get medical aid. If contact with eyes is made, wash your eyes with water and get medical aid immediately.

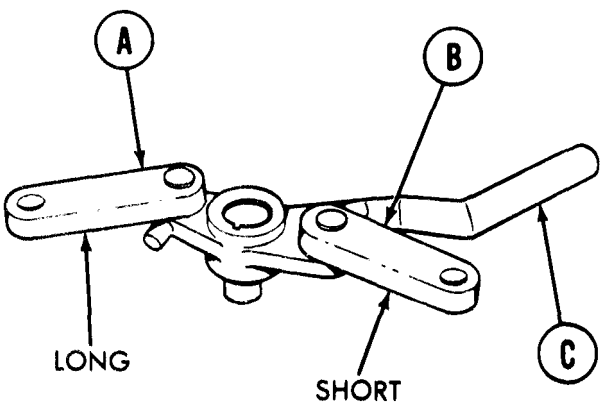
2. Clean seal grove in hatch with dry cleaning solvent.

3. Inspect all parts for damage or wear. Replace any damaged or worn parts.

ASSEMBLY:

1. Compare length of links (A) and (B) before assembly.

2. Place long link (A) and short link (B) in position on handle (C) as shown.

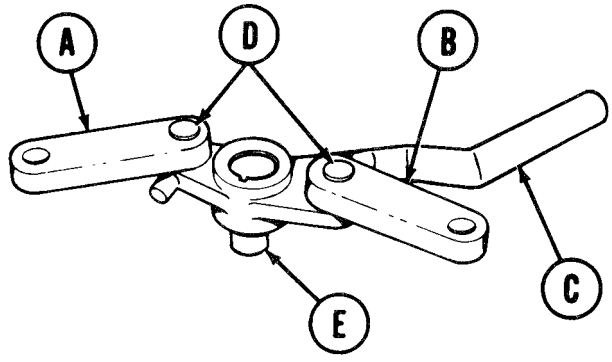


TA249719

Go on to Sheet 4

COVER ASSEMBLY (ESCAPE HATCH) REPAIR (EARLY MODEL) (Sheet 4 of 5)

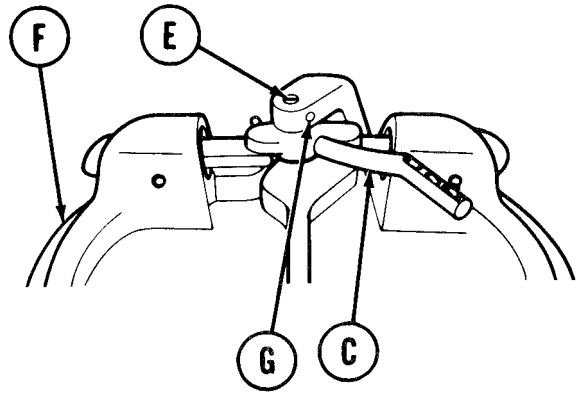
3. Using pliers, install two retaining rings (D) to secure links (A) and (B).



4. Install spring assembly (E) in handle (C).

5. Place handle (C) into position on cover (F).

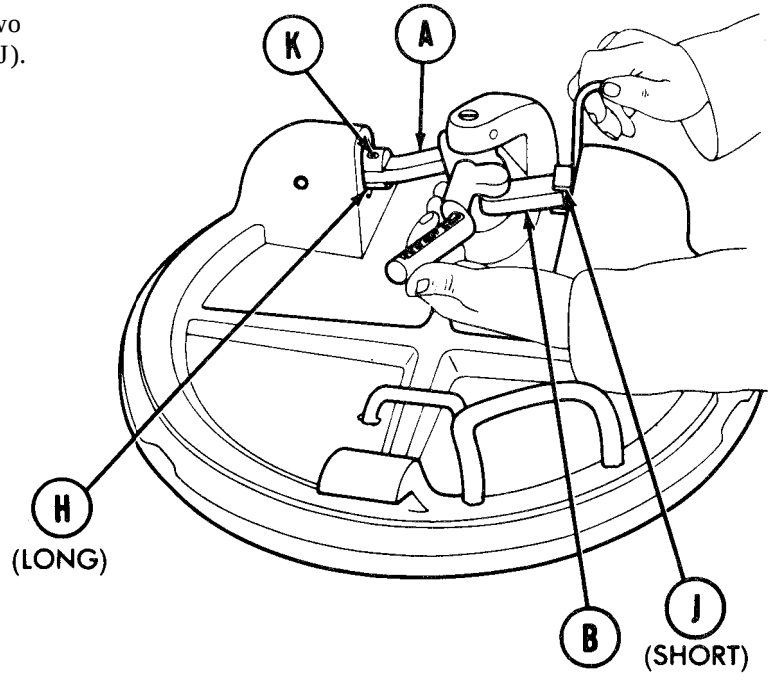
6. Using a screwdriver, turn spring assembly (E) counterclockwise. Install headless pin (G).



7. Install long plunger (H) and aline with link (A).

8. Install short plunger (J) and aline with link (B).

9. Using socket head screw key, install two internal bolts (K) in plungers (H) and (J).



Go on to Sheet 5

TA249720

COVER ASSEMBLY (ESCAPE HATCH) REPAIR (EARLY MODEL) (Sheet 5 of 5)

NOTE

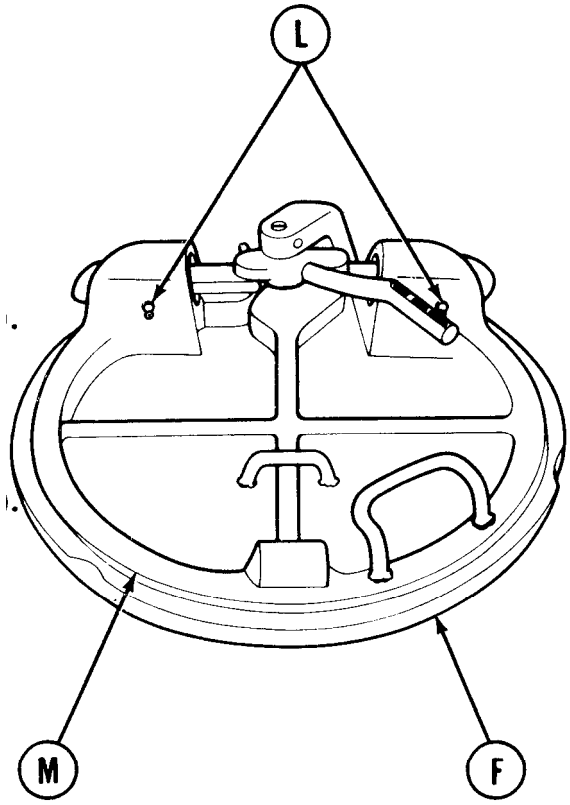
If your cover assembly did not have lubrication fittings, skip step 10 and go on to step 11.

10. Using wrench, install two lubrication fittings (L) in cover (F).

11. Apply coating of silicone compound to seal groove in cover (F) and also to rubber seal (M).

12. Install rubber seal (M) in seal groove in cover (F).

13. Install cover assembly in vehicle (page 16-35).



End of Task

TA249721

COVER ASSEMBLY (ESCAPE HATCH) ADJUSTMENT (LATE MODEL) (Sheet 1 of 1)

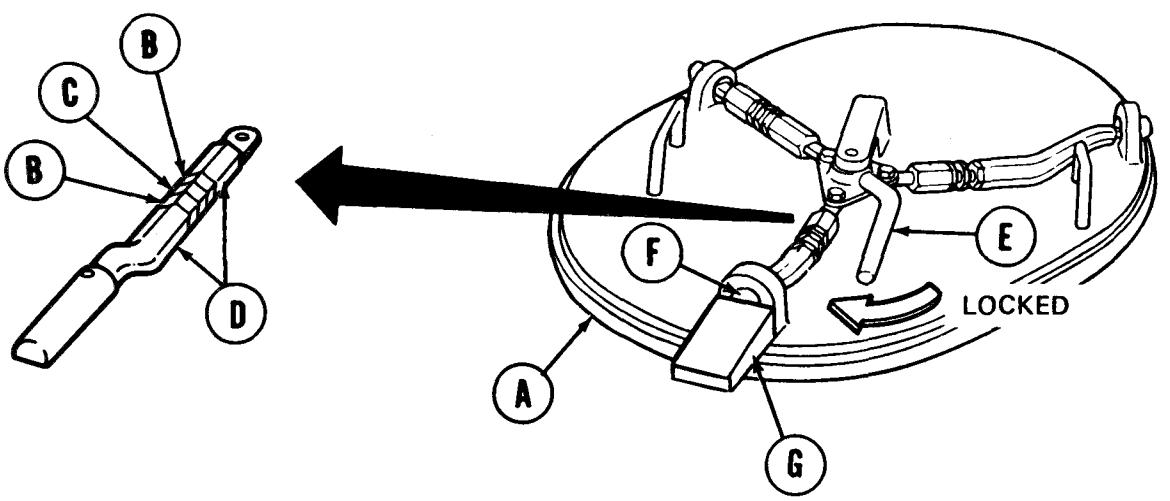
TOOLS: 3/4 in. combination box and open wrench (2 required)
Hydraulic jack
Steel rule

1. Using jack, position cover assembly (A) on vehicle so that it is seated.
2. Using wrench, loosen six nuts (B).

NOTE

Turning stud (C) counter clockwise will screw stud into connectors.

3. Using wrench, adjust three studs (C) until they are screwed completely into connectors (D).
4. Place cover assembly lever (E) in locked position.
5. Using wrench, adjust three studs (C) until they just start to get tight.
6. Make sure that bolts (F) are extended over cover assembly lock pads (G) by at least 3/8 inch and there is no space between bolts (F) and pads (G). If there is space between bolts (F) and pads (G), repeat step 5. If bolts (F) do not extend over pads (G) by at least 3/8 inch, reseat cover assembly (A) on vehicle and repeat complete adjustment.
7. Using wrench to hold studs (C) and another wrench on nuts (B), tighten nuts (B).
8. Using heel of foot, move cover lever (E) to unlocked position. If cover lever (E) cannot be moved to unlocked position, repeat adjustment procedure.
9. Place cover lever (E) in locked position.
10. Remove jack.



End of Task

TA249722

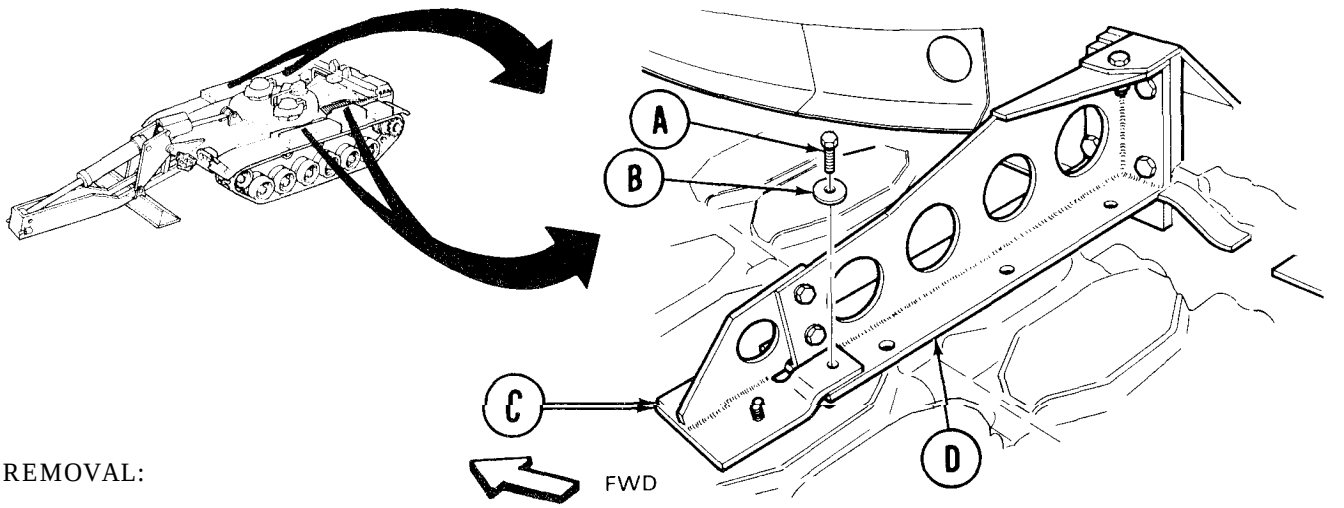
FENDER SUPPORT NO. 3 (LEFT AND RIGHT) REPLACEMENT (Sheet 1 of 4)

PROCEDURE INDEX

TOOLS: 5/8 in. socket with 1/2 in. drive
3/4 in. socket with 1/2 in. drive
7/8 in. combination box and open end wrench
1 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
Hinged handle with 1/2 in. drive
Torque wrench with 1/2 in. drive (0-175 lb-ft)

SUPPLIES: Lockwashers (4 required)
Locking compound (Item 15, Appendix D)
Locknut

PRELIMINARY PROCEDURES: Remove fender extension (page 16-65)
Remove air cleaner (page 7-90)
Remove front fender center stowage box (page 16-76)



REMOVAL:

NOTE

Left No. 3 fender support is shown, right No. 3 fender support replacement is similar.

1. Using 5/8 inch socket, remove screw (A) and flat washer (B) holding extension mounting bracket (C) to bottom flange of No. 3 fender support (D).

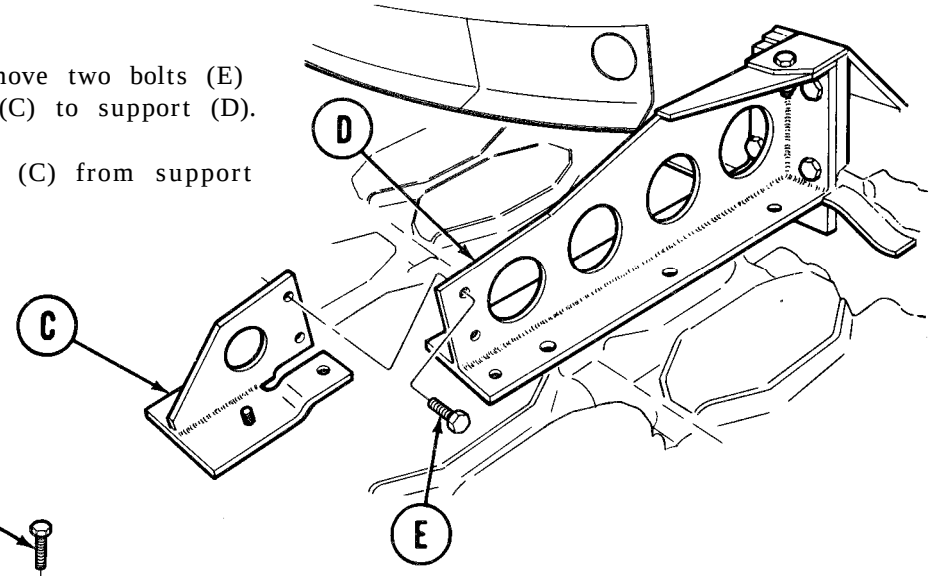
Go on to Sheet 2

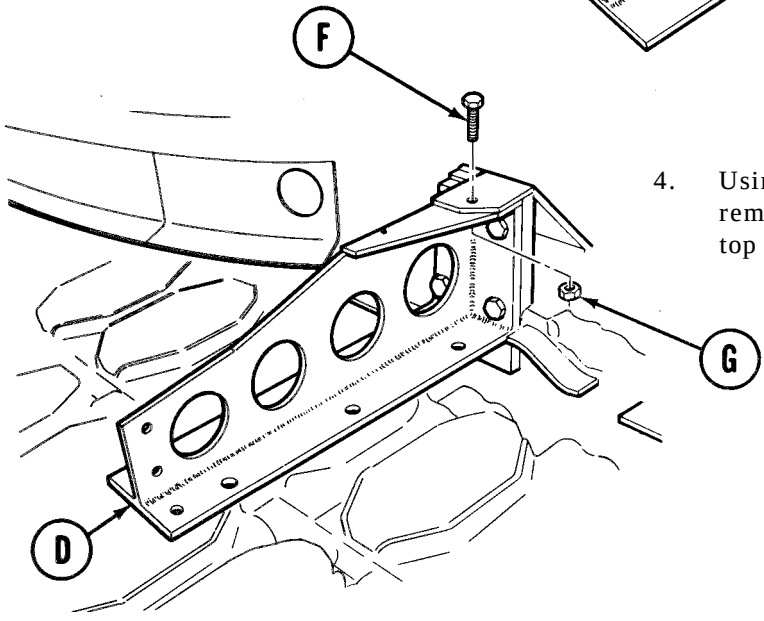
TA249723

FENDER SUPPORT NO. 3 (LEFT AND RIGHT) REPLACEMENT (Sheet 2 of 4)

2. Using 5/8 inch socket, remove two bolts (E) holding extension bracket (C) to support (D).

3. Remove extension bracket (C) from support (D).

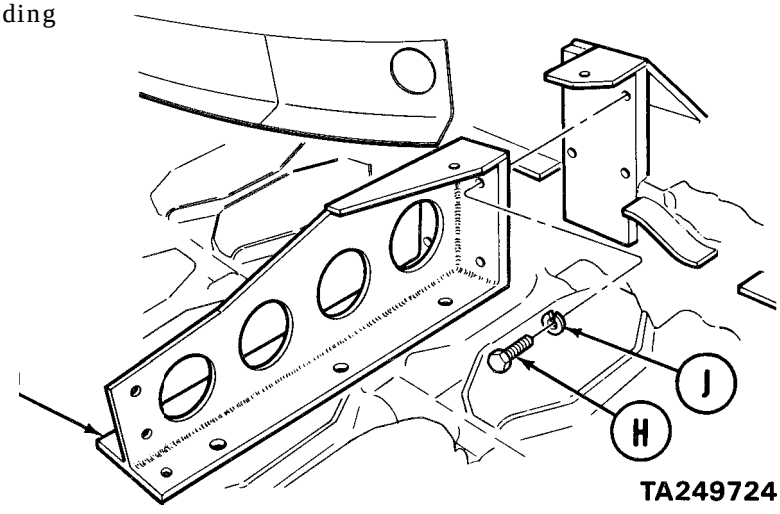




4. Using 3/4 inch socket and 7/8 inch wrench, rem ove one screw (F] and locknut (G) holding top flange of support (D) to hull support.

5. Using 1 inch socket and hinged handle, remove four screws (H) and lockwasher (J) holding support (D) to hull support.

6. Remove support (D).



TA249724

Go on to Sheet 3

FENDER SUPPORT NO. 3 (LEFT AND RIGHT) REPLACEMENT (Sheet 3 of 4)

CLEANING AND INSPECTION:

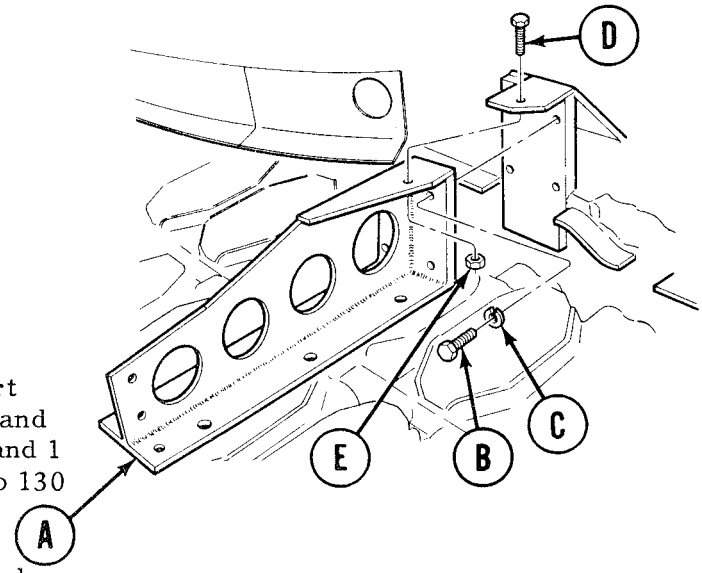
1. Inspect extension bracket for damage and cracks. Replace if defective.

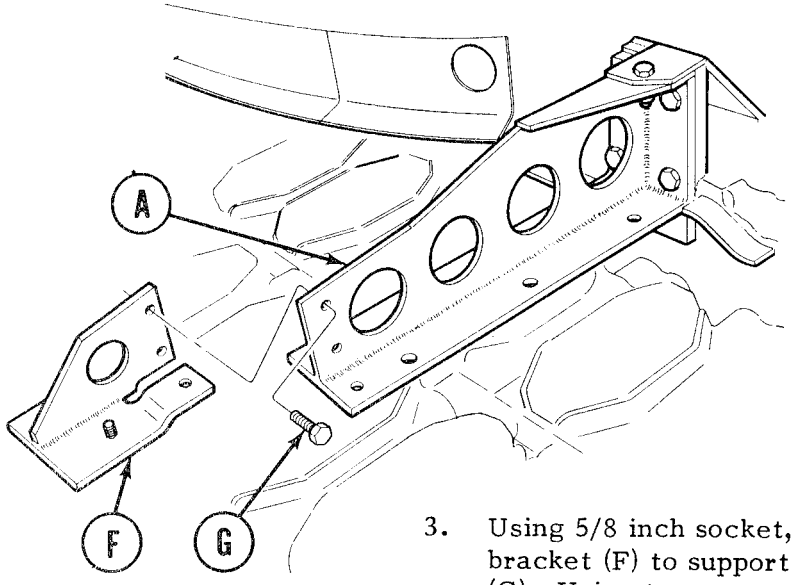
2. Inspect threaded holes and studs for thread damage. Repair if defective.

INSTALLATION:

1. Using 1 inch socket, install No. 3 support (A) to hull support with four screws (B) and lockwashers (C). Using torque wrench and 1 inch socket, tighten screws (B) to 125 to 130 lb-ft (169 to 176 N·m).

2. Using 3/4 inch socket and 7/8 inch wrench, install screw (D) and locknut (E).





3. Using 5/8 inch socket, install extension bracket (F) to support (A) with two bolts (G). Using torque wrench and 5/8 inch socket, tighten bolts (G) to 15 to 20 lb-ft (20 to 27 N·m).

Go on to Sheet 4

TA249725

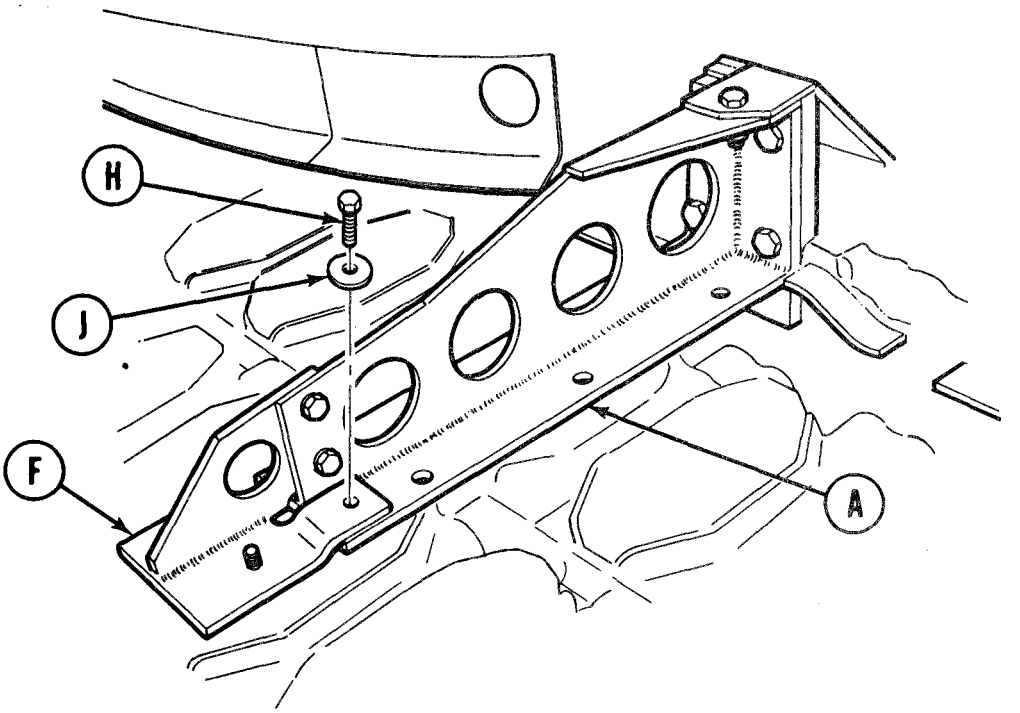
FENDER SUPPORT NO. 3 (LEFT AND RIGHT) REPLACEMENT (Sheet 4 of 4)

4. Put locking compound on threads of screw (H). Using 5/8 inch socket, install screw (H) and flat washer (J) to secure extension bracket (F) to bottom flange of support (A). Using torque wrench and 5/8 inch socket, tighten screw (H) to 22 to 30 lb-ft (30 to 41 N·m).

5. Install front fender center stowage box (page 16-77).

6. Install air cleaner (page 7-94).

7. Install fender extension (page 16-67).



End of Task

TA249726

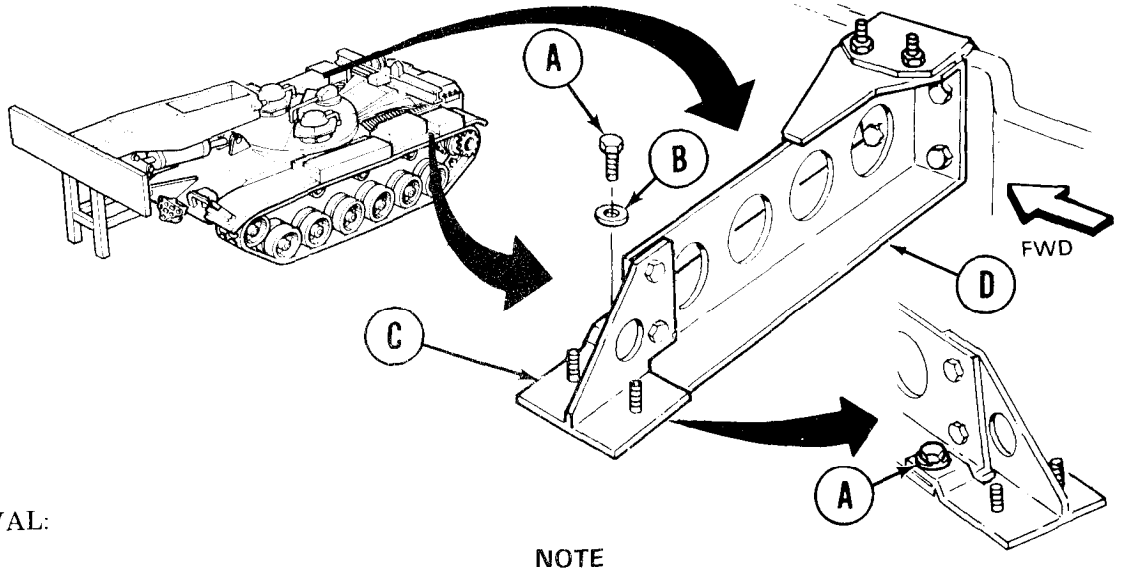
FENDER SUPPORT NO. 4 (LEFT AND RIGHT) REPLACEMENT (Sheet 1 of 4)

PROCEDURE INDEX

TOOLS: Ratchet with 1/2 in. drive
1 in. socket with 1/2 in. drive
1-1/8 in. socket with 1/2 in. drive
Hinged handle with 1/2 in. drive
7/8 in. socket with 1/2 in. drive
9/16 in. socket with 1/2 in. drive
3/4 in.socket with 1/2 in. drive
3/4 in. combination box and open end wrench
Torque wrench with 1/2 in. drive (0-175 lb-ft)
5/8 in. socket with 1/2 in. drive
7/8 in. combination box and open end wrench

SUPPLIES: Lockwashers (4 required)
Locking compound (Item 15, Appendix D)

PRELIMINARY PROCEDURES: Remove rear fender stowage box (page 16-84)
Remove fender extension (page 16-65)
Remove air cleaner (page 7-90)



REMOVAL:

NOTE

Left No. 4 fender support is shown; right No. 4 fender support replacement is similar.

1. Using 5/8 inch socket, remove screw (A) and flat washer (B) holding extension bracket (C) to bottom flange of No. 4 fender support (D).

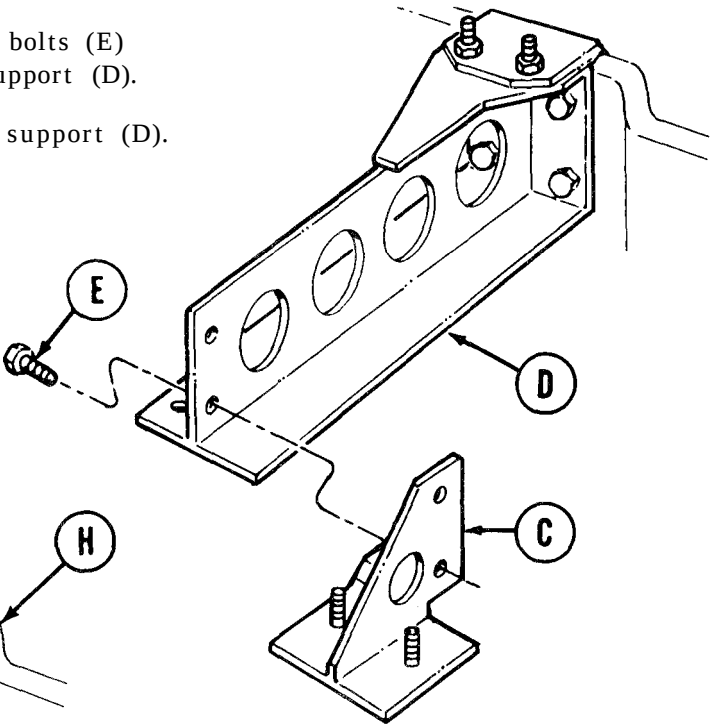
TA249727

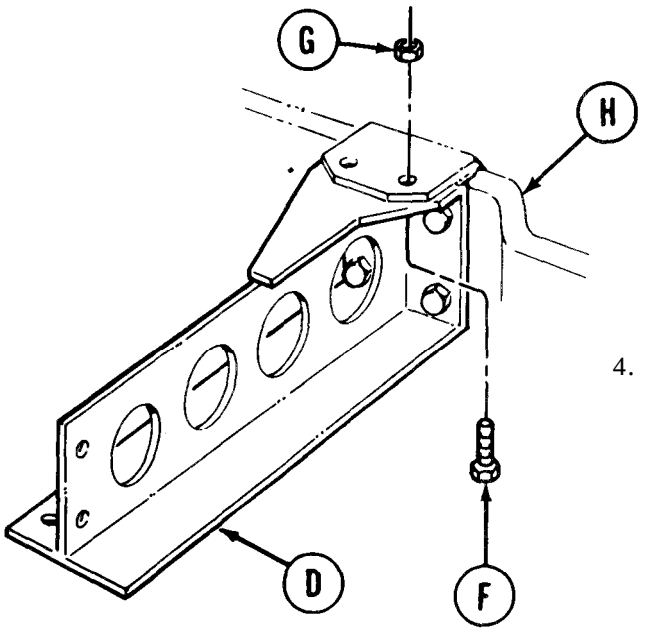
Go on to Sheet 2

FENDER SUPPORT NO. 4 (LEFT AND RIGHT) REPLACEMENT (Sheet 2 of 4)

2. Using 5/8 inch socket, remove two bolts (E) holding extension bracket (C) to support (D).

3. Remove extension bracket (C) from support (D).

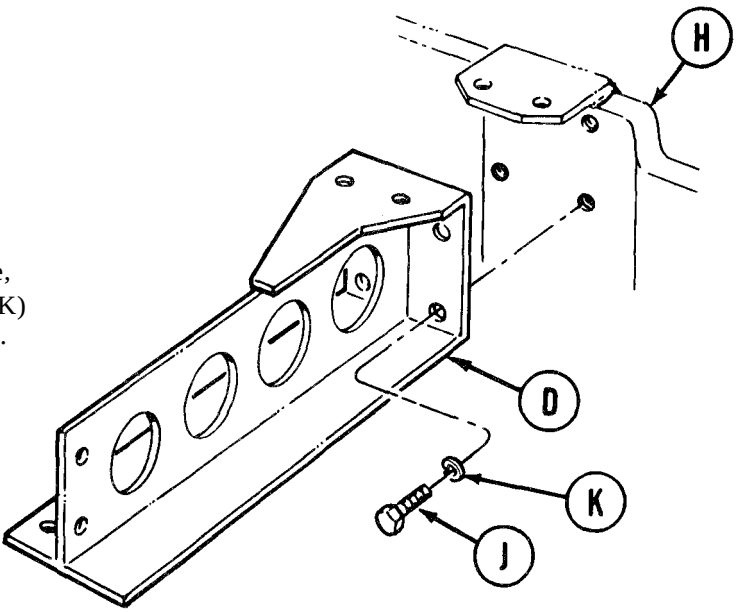




4. Using 7/8 inch socket and 3/4 inch wrench, remove two screws (F) and nuts (G) holding top flange of support (D) to hull support (H).

5. Using 1-inch socket and hinged handle, remove four screws (J) and lockwashers (K) holding support (D) to hull support (H).

6. Remove support (D).



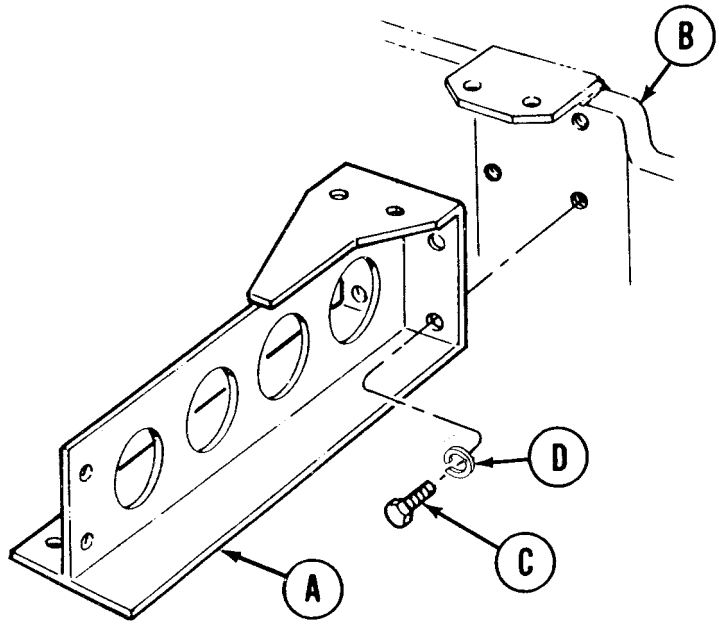
Go on to Sheet 3

TA249728

FENDER SUPPORT NO. 4 (LEFT AND RIGHT) REPLACEMENT (Sheet 3 of 4)

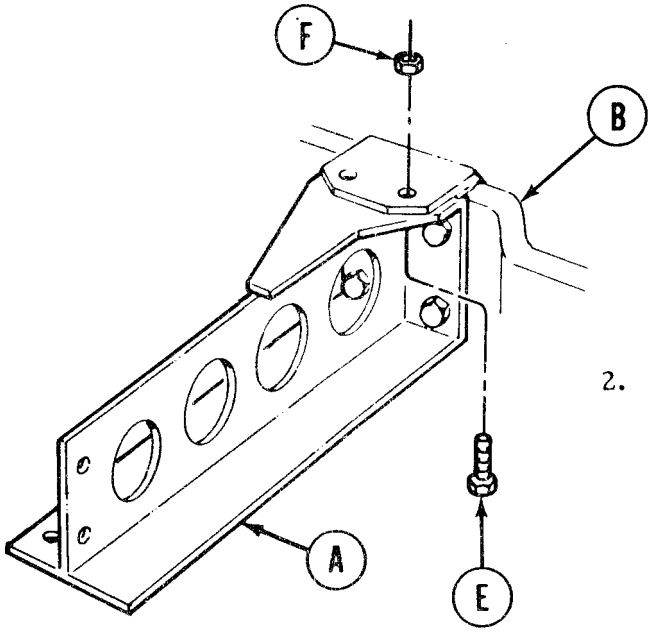
CLEANING AND INSPECTION:

1. Inspect extension bracket for damage and cracks, Replace if defective.
2. Inspect threaded holes and studs for thread damage. Replace or repair if defective.



INSTALLATION:

1. Using 1-inch socket and hinged handle, install fender support (A) to hull support (E) and secure with four screws (C) and lockwashers (D). Using torque wrench and 1-1/8 inch socket, tighten screws (C) to 125-130 lb-ft (169-176 N·m).



2. Using 3/4 inch socket and 7/8 inch wrench, secure top flange of support (A) to top of hull support with two screws (E) and nuts (F).

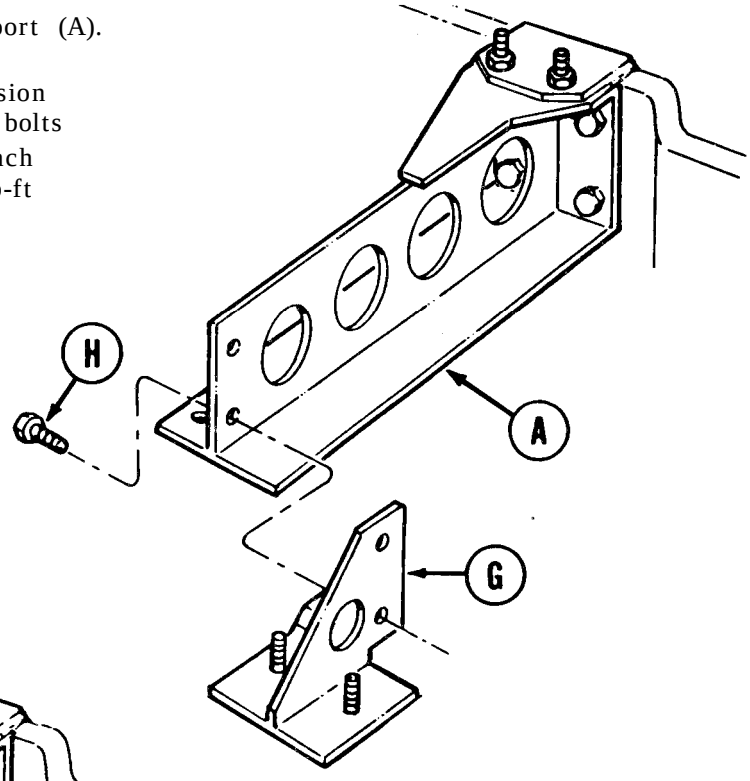
Go on to Sheet 4

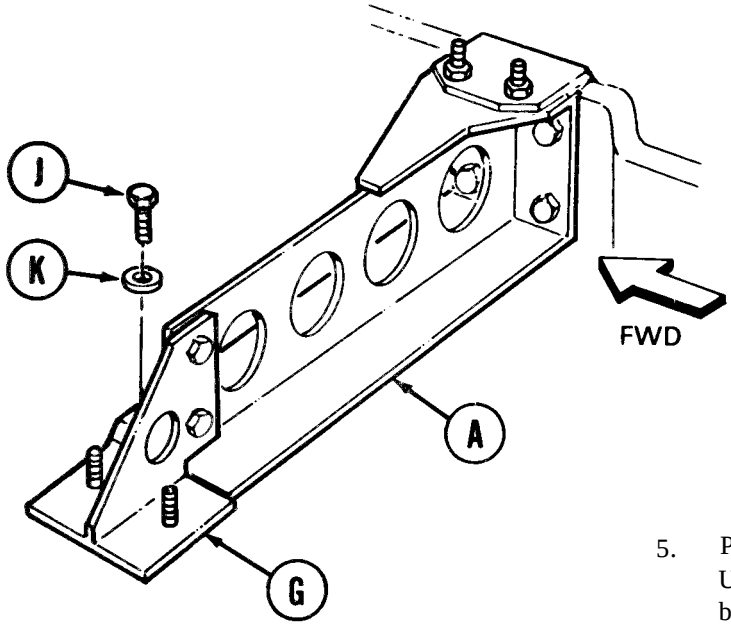
TA249729

FENDER SUPPORT NO. 4 (LEFT AND RIGHT) REPLACEMENT (Sheet 4 of 4)

3. Install extension bracket (G) to support (A).

4. Using 5/8 inch socket, secure extension bracket (F) to support (A) with two bolts (H). Using torque wrench and 5/8 inch socket, tighten bolts (H) to 15-20 lb-ft (20-27 N·m).





5. Put locking compound on threads of screw (J). Using 5/8 inch socket, secure extension bracket (G) to bottom flange of support (A) with screw (J) and flat washer (K).

6. Using torque wrench and 5/8 inch socket, tighten screw (J) to 22-30 lb-ft (30-41 N·m).

7. Install air cleaner (page 7-94).

8. Install fender extension (page 16-67).

9. Install rear fender stowage box (page 16-85).

End of Task

TA249730

FRONT FENDERS, HEADLAMP GUARDS, AND FENDER SUPPORT REPLACEMENT (Sheet 1 of 7)

PROCEDURE INDEX

TOOLS: Ratchet with 1/2 in. drive
7/16 in. socket with 1/2 in. drive
7/16 in. combination box and open end wrench
9/16 in. socket with 1/2 in. drive
9/16 in. combination box and open end wrench
7/8 in. socket with 1/2 in. drive
3/4 in. combination box and open end wrench
1-in. socket with 1/2 in. drive
Torque wrench with 1/2 in. drive (0-175 lb-ft)
Handle, socket wrench, hinged, 1/2 in. drive

SUPPLIES: Lockwasher (14 required
Locknut (10 required)

PERSONNEL: Two

PRELIMINARY PROCEDURES: Remove personnel heater outer exhaust pipe (right fender only) (page 18-21)
Remove front fender center stowage box (page 16-76)

REMOVAL:

NOTE

Right front fender, headlamp guard, and fender support shown. Left front fender removal is similar.

Go on to Sheet 2

TA249731

FRONT FENDERS, HEADLAMP GUARDS, AND FENDER SUPPORT REPLACEMENT
(Sheet 2 of 7)

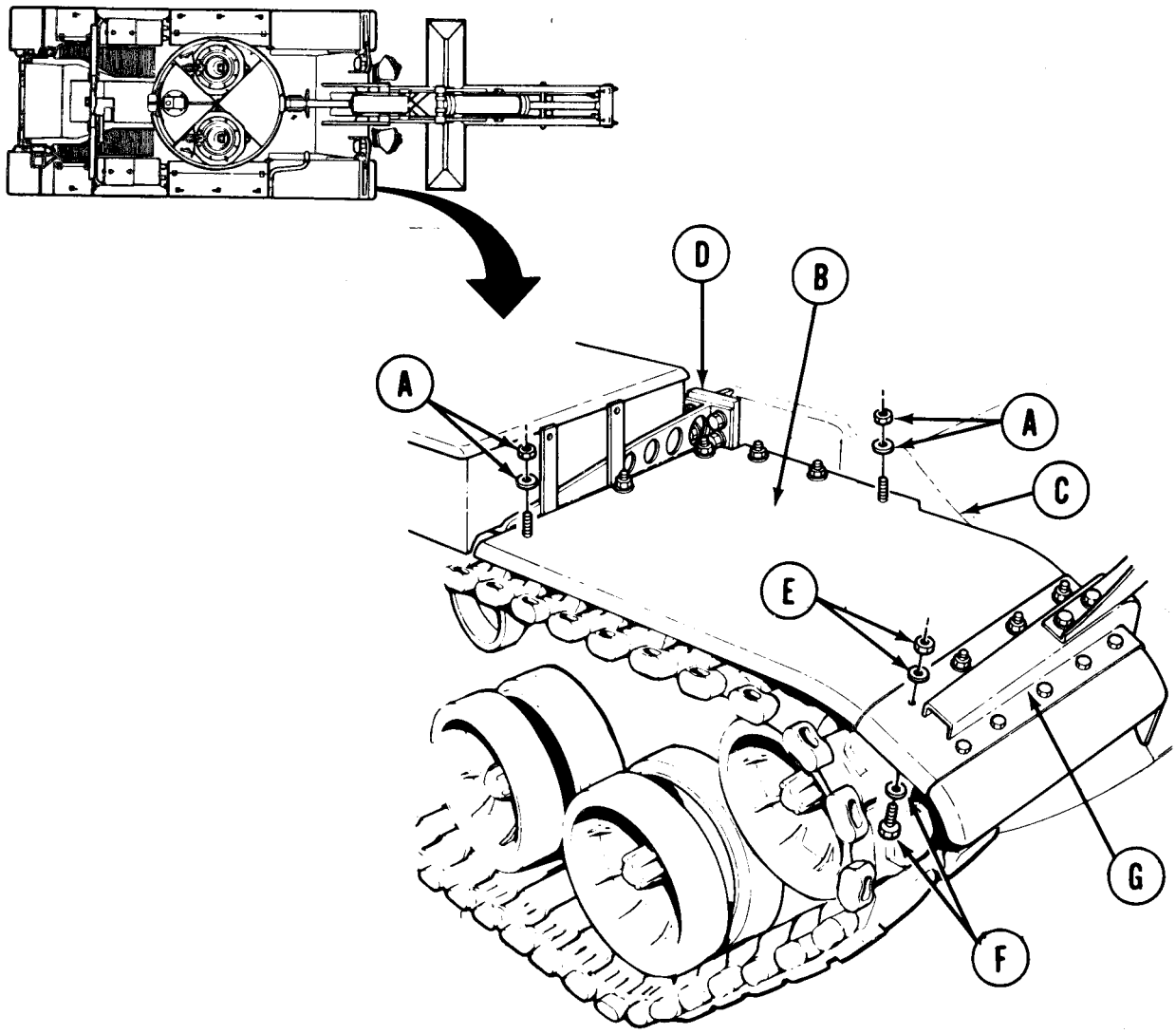
1. Using 9/16 inch socket, remove six locknuts and washers (A) holding fender (B) to hull (C) and fender support No. 2 (D).

2. Using 9/16 inch socket on four locknuts (E) and 9/16 inch wrench on four screws (F) hidden under fender support No. 1 (G), remove four screws, washers (F), and locknuts and washers (E).

NOTE

Use second person if necessary.

3. Remove front fender (B) from fender support No. 1 (G).



Go on to Sheet 3

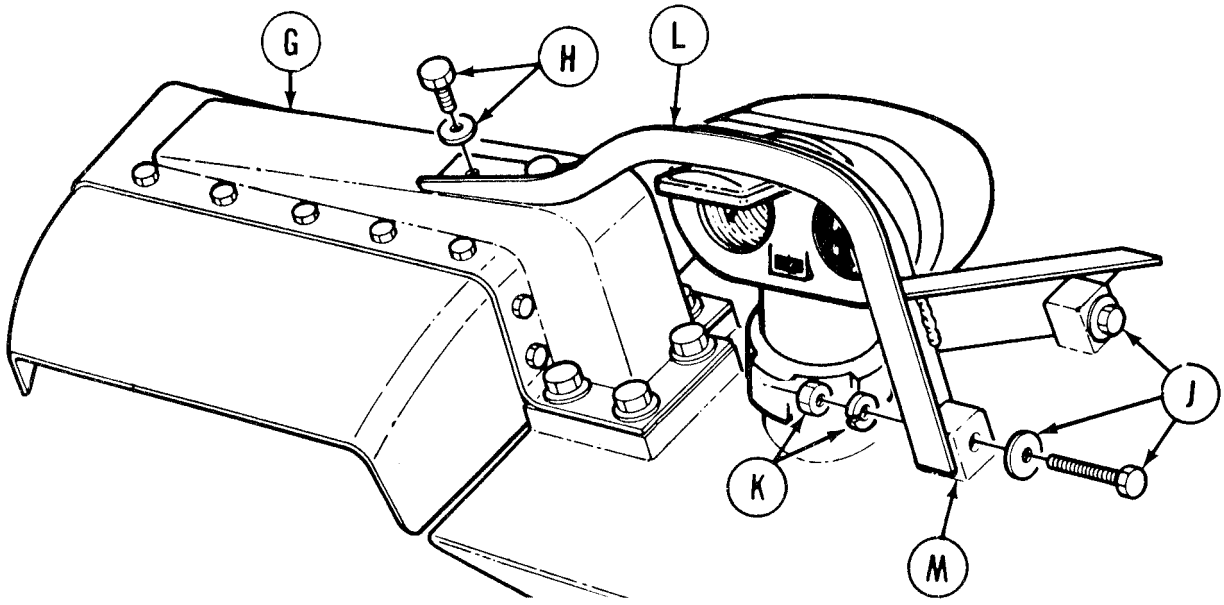
TA249732

FRONT FENDERS, HEADLAMP GUARDS, AND FENDER SUPPORT REPLACEMENT (sheet 3 of 7)

4. Using 9/16 inch socket, remove two screws and washers (H) holding headlamp guard to outrigger No. 1 (G).

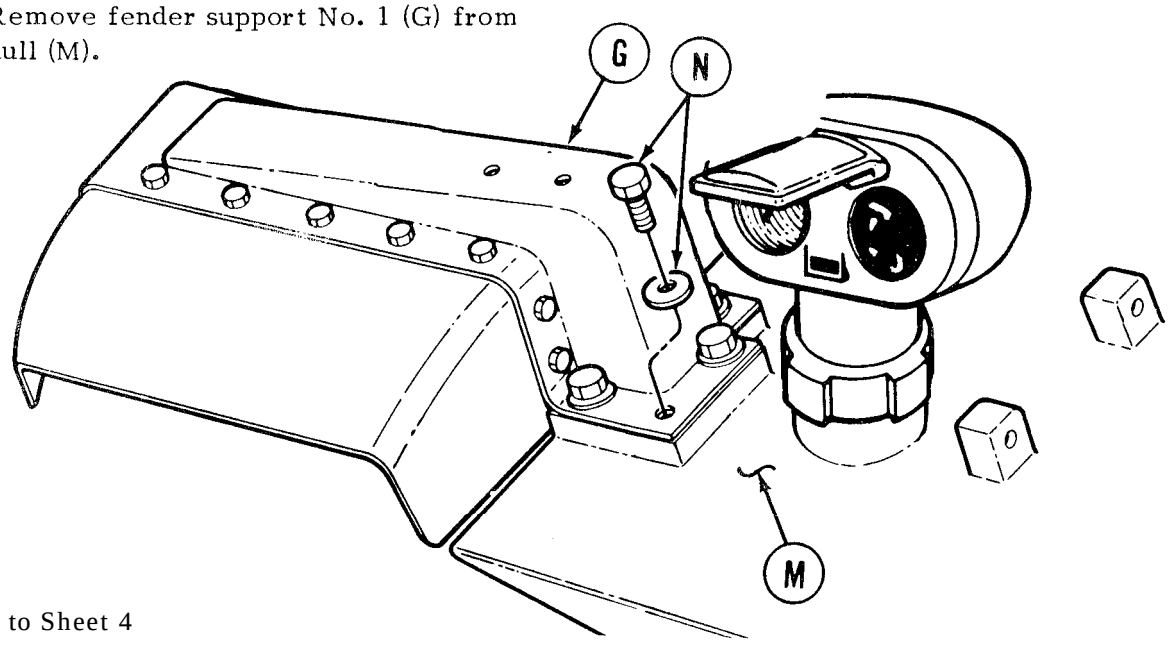
5. Using 3/4 inch socket on screws (J) and 3/4 inch wrench on nuts (K), remove two screws and washers (J) and two nuts and lockwashers (K) holding headlamp guard (L) to hull (M).

6. Remove headlight guard (L).



7. Using 1-inch socket, remove four screws and lockwashers (N) holding fender support No. 1 (G) to hull (M).

8. Remove fender support No. 1 (G) from hull (M).

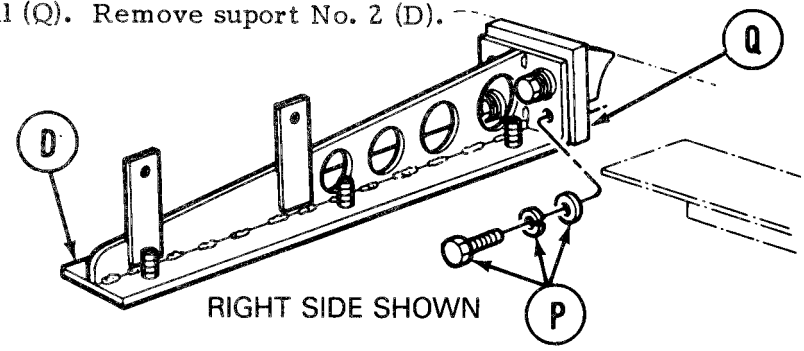


Go on to Sheet 4

TA249733

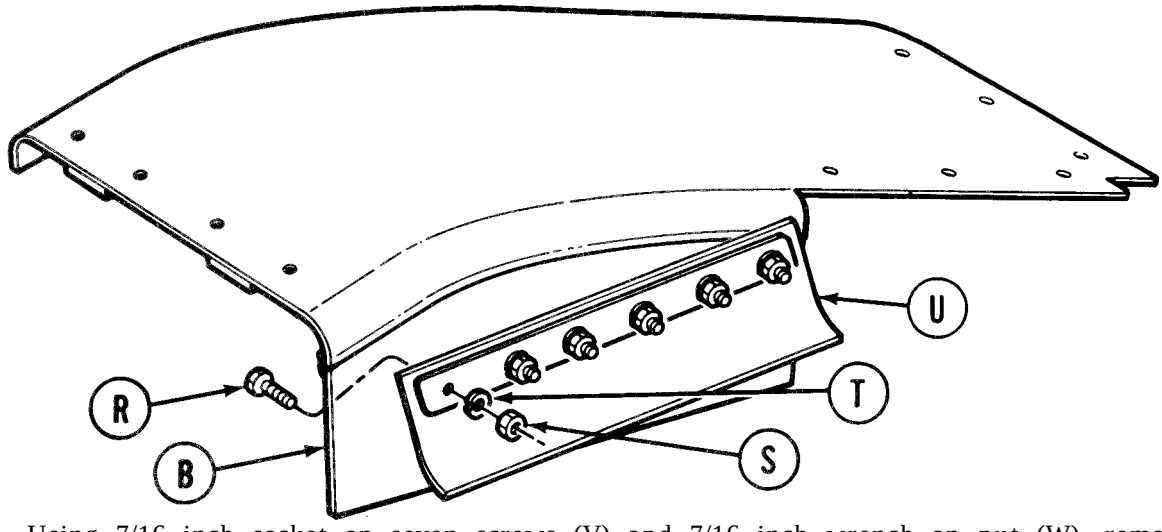
FRONT FENDERS, HEADLAMP GUARDS, AND FENDER SUPPORT REPLACEMENT
(Sheet 4 of 7)

9. Using 1-inch socket, remove four screws, lockwashers, and washers (P) holding fender support No. 2 (D) to hull (Q). Remove suport No. 2 (D).



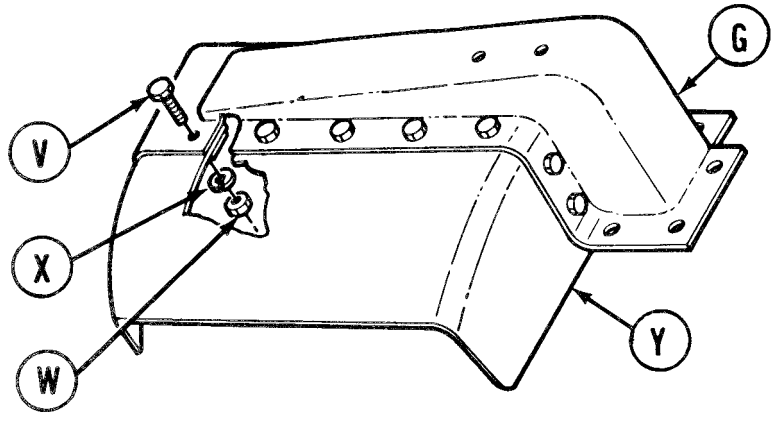
10. Using 7/16 inch socket on six screws (R) and 7/16 inch wrench on nuts (S), remove six screws (R), lockwashers (T), and nuts (S) holding strip and antisqueak (U) to fender (B).

11. Remove strip and antisqueak (U) from fender (B).



12. Using 7/16 inch socket on seven screws (V) and 7/16 inch wrench on nut (W), remove screws (V), lockwashers (X), and nuts (W) holding fender extension (Y) to support No. 1 (G).

13. Remove fender extension (Y) from support NO. 1 (G). Remove retainer and spacer (hidden).



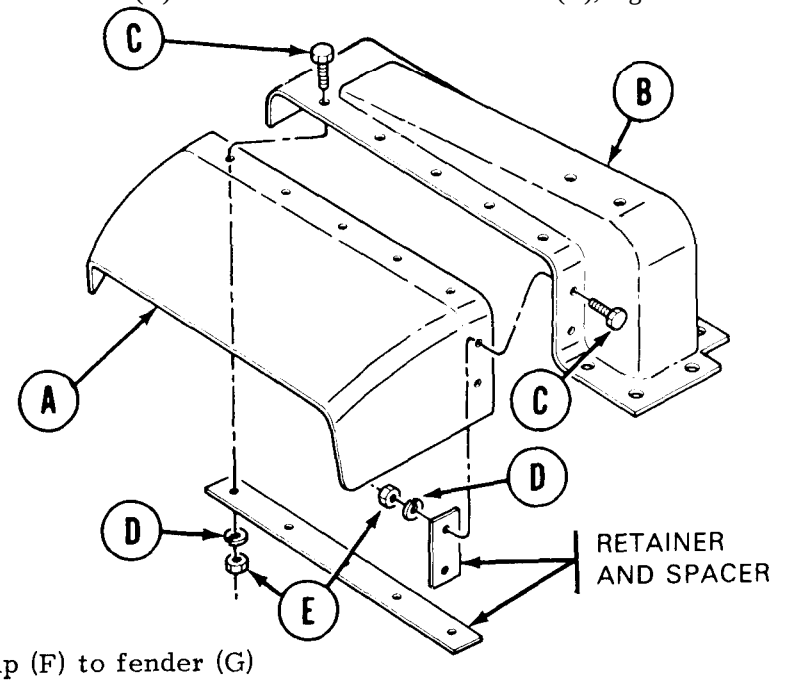
Go on to sheet 5

TA249734

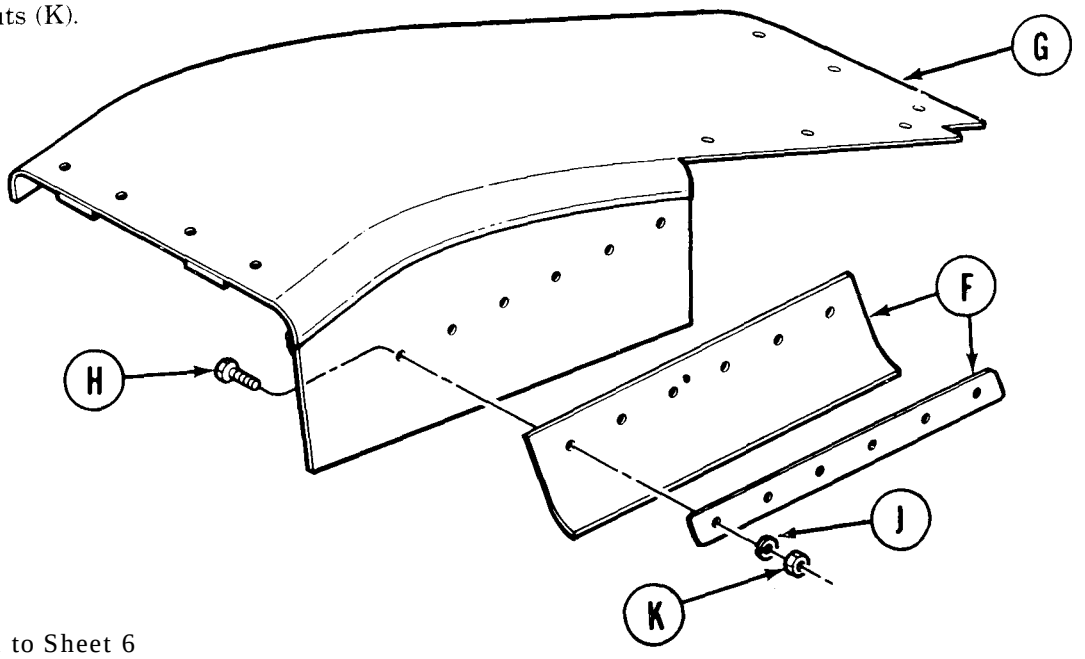
FRONT FENDERS, HEADLAMP GUARDS, AND FENDER SUPPORT REPLACEMENT
(Sheet 5 of 7)

INSTALLATION:

1. Install fender extension (A) and retainer and spacer onto fender support No. 1 (B) using seven screws (C), lockwashers (D), and nuts (E).
2. Using 7/16 inch socket on seven screws (C) and 7/16 inch wrench on nuts (E), tighten screws (C) and nuts (E).



3. Install antisqueak and strip (F) to fender (G) using six screws (H), lockwashers (J), and nuts (K).
4. Using 7/16 inch socket on screws (H) and 7/16 inch wrench on nuts (K), tighten screws (H) and nuts (K).

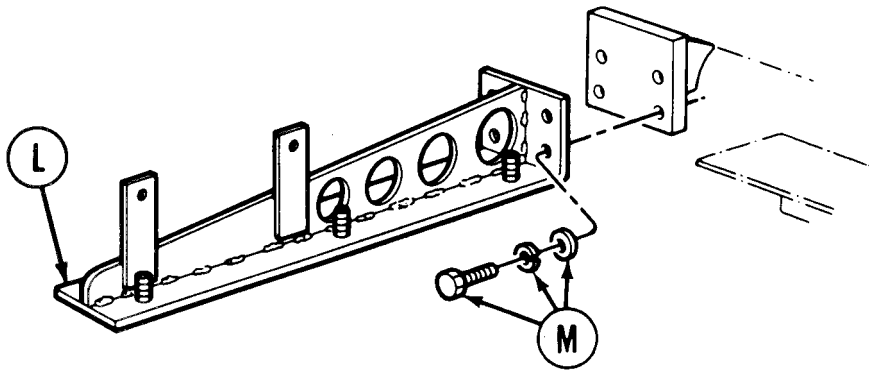


Go on to Sheet 6

TA249735

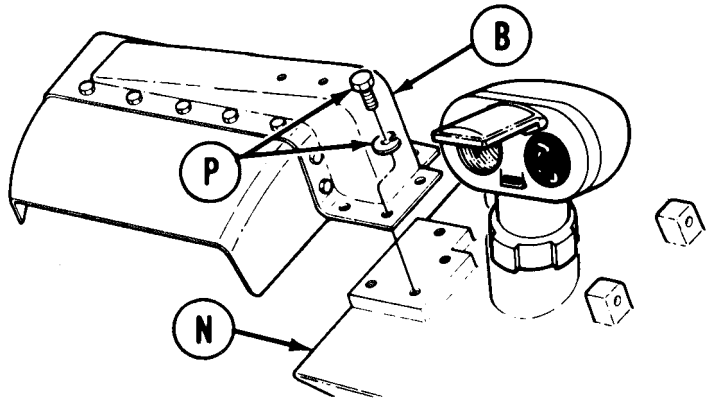
FRONT FENDERS, HEADLAMP GUARDS, AND FENDER SUPPORT REPLACEMENT
(Sheet 6 of 7)

5. Using 1-inch socket, install support No. 2 (L) to hull, using four screws, lockwashers, and washers (M). Using torque wrench and 1-inch socket, tighten screws (M) to 125-130 lb-ft (169-176 N·m).



6. Using 1-inch socket install support No. 1 (B) to hull (N) using four screws and lockwashers (P).

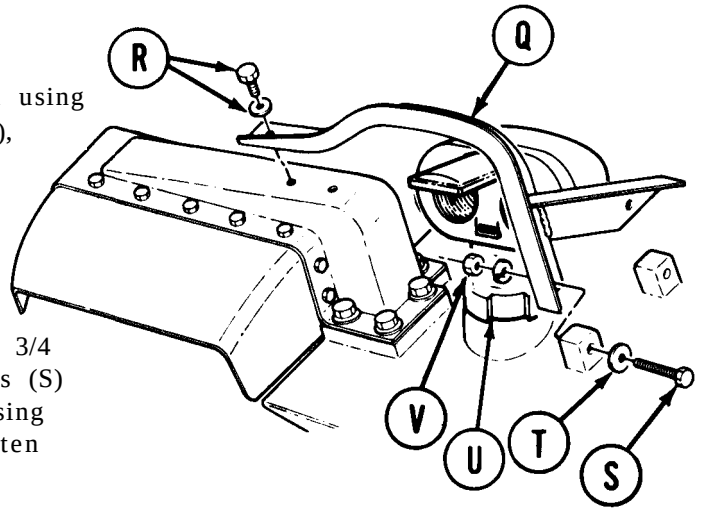
7. Using torque wrench a 1-inch socket, tighten screws (P) to 125-130 lb-ft (169-176 N·m).



8. Using 9/16 inch socket, loosely install headlamp guard (Q) to hull using two screws and washers (R).

9. Using 3/4 inch socket and 3/4 inch wrench, loosely install headlamp guard (Q) to hull using two screws (S), washers (T), lockwashers (U), and nuts (V).

10. Using 9/16 inch socket on screws (R) and 3/4 inch socket and 3/4 inch wrench on screws (S) and nuts (V), tighten screws and nuts. Using torque wrench and 9/16 inch socket, tighten screws (R) to 15-20 lb-ft (20-27 N·m).



Go on to Sheet 7

TA249736

FRONT FENDERS, HEADLAMP GUARDS, AND FENDER SUPPORT REPLACEMENT
(Sheet 7 of 7)

NOTE

Use second person if necessary.

10. Install fender (W) to support No. 1 (B) using four screws (X), washers (Y), and locknuts (Z).

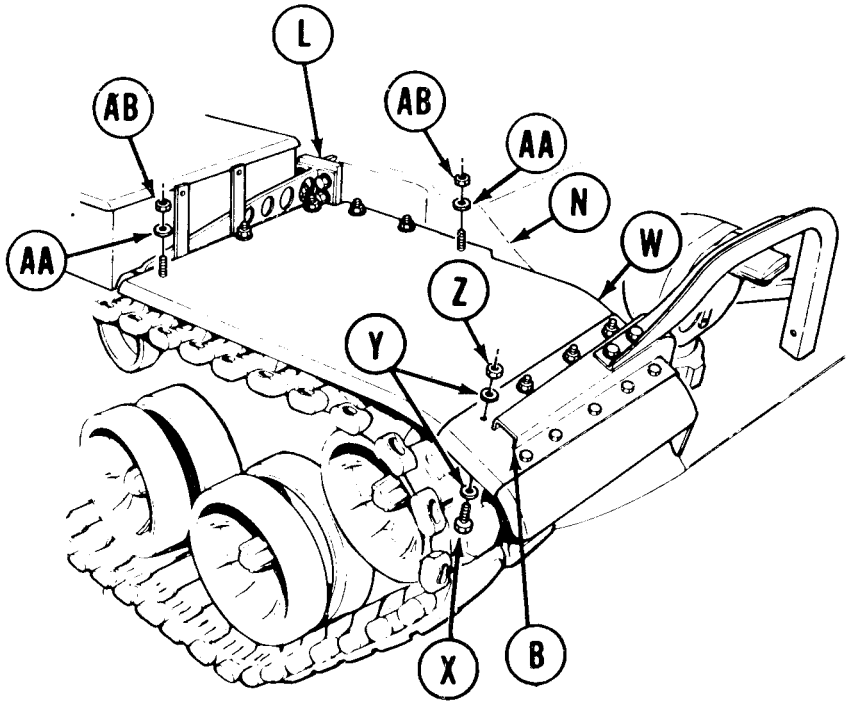
11. Using 9/16 inch socket on screws (X) and 9/16 inch wrench on nuts (Z), tighten screws and nuts.

12. Install six washers (AA) and locknuts (AB) to secure fender (W) to hull (N) and support NO. 2 (L).

13. Using 9/16 inch socket on nuts (AB), tighten nuts.

14. Install exhaust, tube (page 18-7).

15. Install front fender center stowage box (page 16-77).

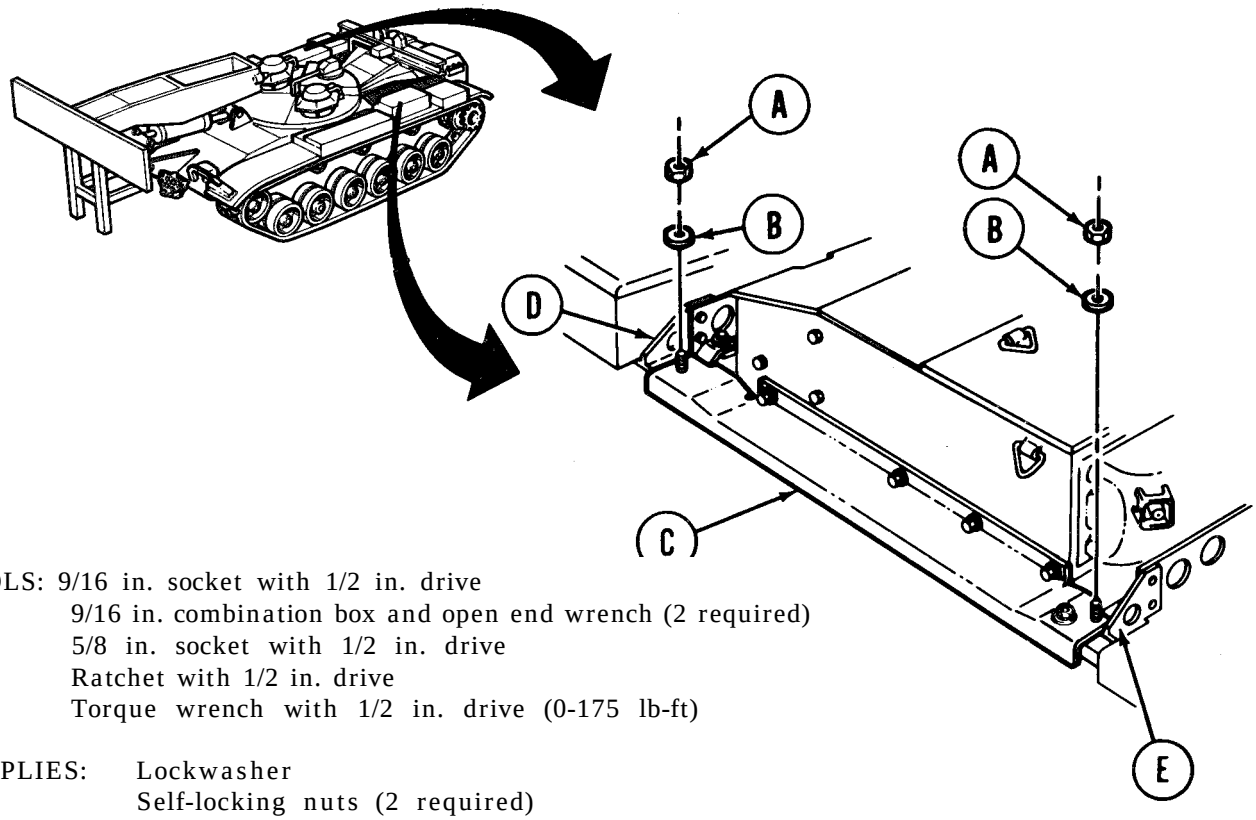


End of Task

TA249737

FENDER EXTENSION (LEFT) REPLACEMENT (Sheet 1 of 4)

PROCEDURE INDEX



TOOLS: 9/16 in. socket with 1/2 in. drive
9/16 in. combination box and open end wrench (2 required)
5/8 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
Torque wrench with 1/2 in. drive (0-175 lb-ft)

SUPPLIES: Lockwasher
Self-locking nuts (2 required)
Self-locking bolts (4 required)
Locking compound (Item 15, Appendix D)

REMOVAL:

NOTE

Removal is similar for left and right fender extensions.

1. Using socket, remove two nuts (A) and flat washers (B) holding fender extension (C) bracket (D) and bracket (E).

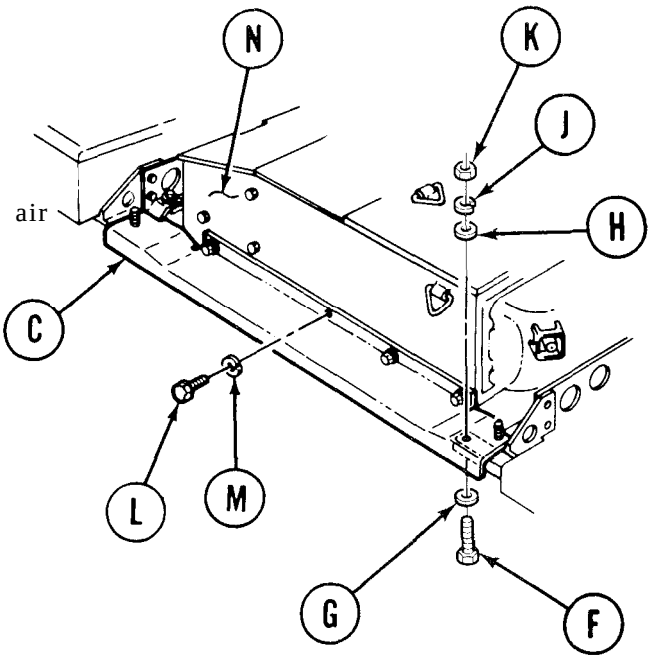
Go on to Sheet 2

TA249738

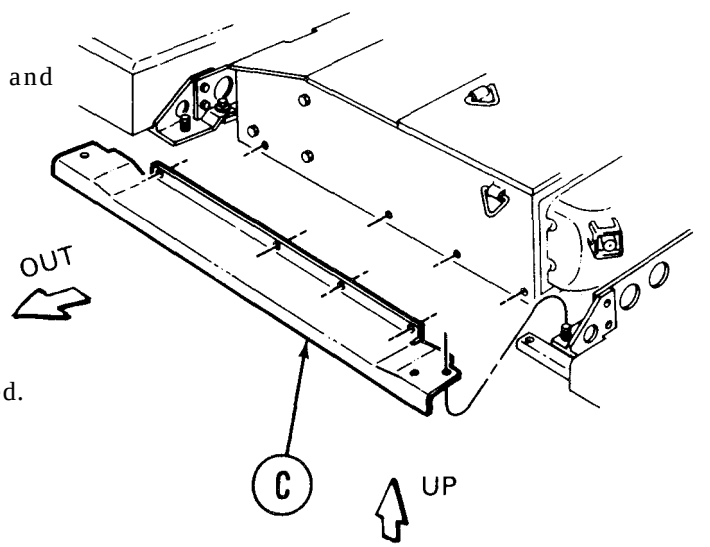
FENDER EXTENSION (LEFT) REPLACEMENT (Sheet 2 of 4)

2. Using two wrenches, remove screw (F), flat washers (G and H), lockwasher (J), and nut (K).

3. Using wrench, remove four bolts (L) and washers (M) securing fender extension (C) to air cleaner (N).



4. Remove fender extension (C) by lifting it up and away from vehicle.



INSPECTION:

Replace missing or damaged hardware as required.

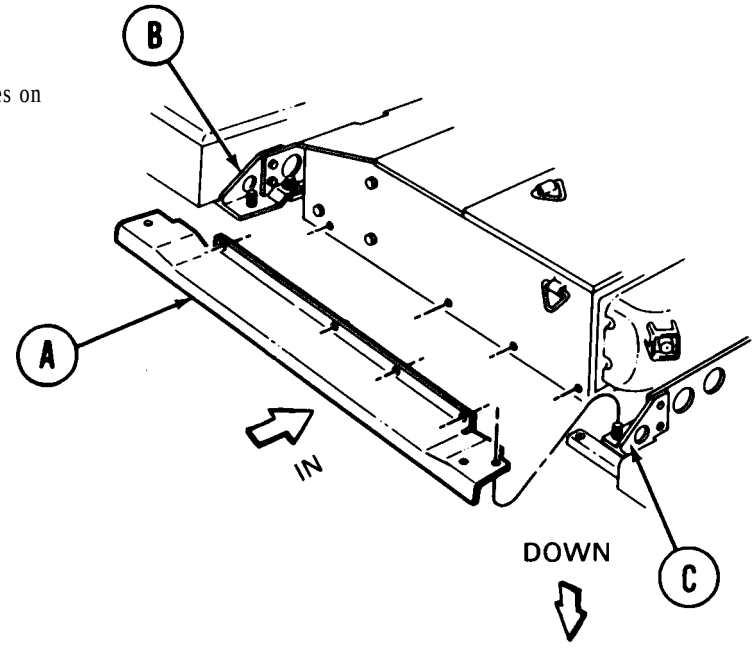
Go on to Sheet 3

TA249739

FENDER EXTENSION (LEFT) REPLACEMENT (Sheet 3 of 4)

INSTALLATION:

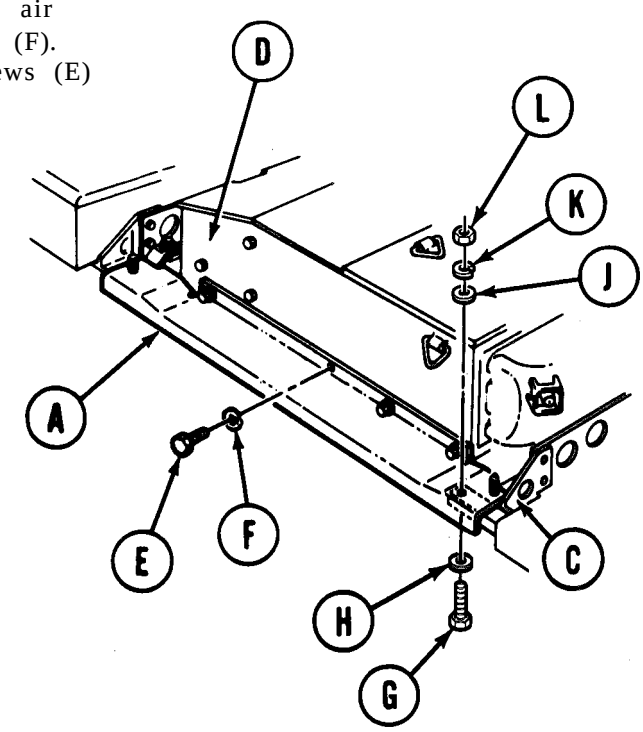
1. Install fender extension (A) so that it alines on brackets (B and C) studs.



2. Put locking compound on threads of four bolts (E). Using wrench, secure fender extension (A) to air cleaner (D) with four screws (E) and washers (F). Using torque wrench and socket, tighten screws (E) to 22-30 lb-ft (30-41 N·m).

3. Using two wrenches, install screw (G) and flat washer (H) to hold fender extension (A) to rear bracket (C).

4. Secure bracket (C) and fender extension (A) with flat washer (J), lockwasher (K), and nut (L).

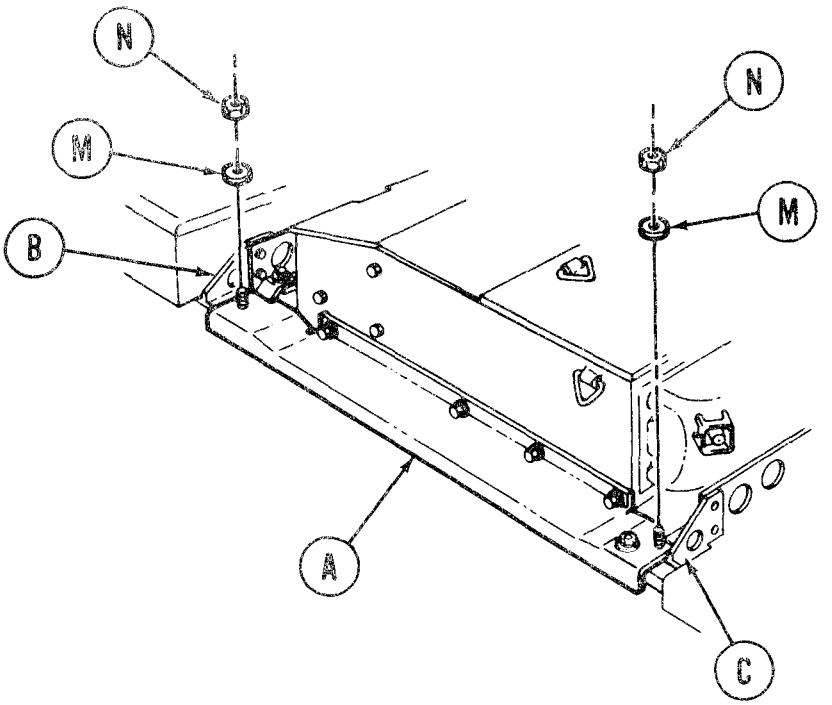


Go on to Sheet 4

TA249740

FENDER EXTENSION (LEFT) REPLACEMENT (Sheet 4 of 4)

5. Using wrench, secure fender extension (A) to front bracket (B) and rear bracket (C) studs with flat washer (M) and locknut (N).



End of Task

TA249741

FENDER AND SHIELD (REAR) REPLACEMENT (Sheet 1 of 7)

PROCEDURE INDEX

TOOLS: 1-in. socket with 1/2 in. drive
9/16 in. socket with 112 in. drive
Ratchet with 1/2 in. drive
7/16 in. socket with 1/2 in. drive
9/16 in. combination box and open end wrench
7/16 in. combination box and open end wrench
5 in. extension with 1/2 in. drive
1/2 in. combination box and open end wrench
Torque wrench with 1/2 in. drive (0-175 lb-ft)
Handle, socket wrench, hinged, 1/2 in. drive

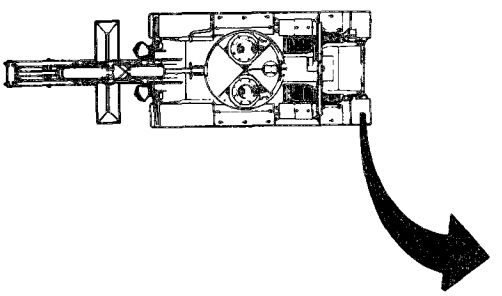
SUPPLIES: Lockwasher (9 required)
Locknuts (8 required)

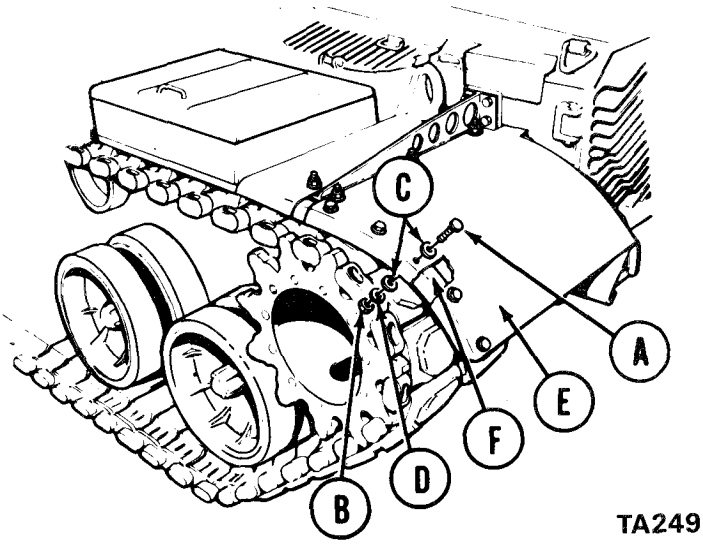
REMOVAL

NOTE

Left rear fender and shield shown. Right rear removal is similar.

1. Using 9/16 inch socket on five screws (A) and 9/16 inch wrench on nuts (B) remove five screws (A), washers (C), lockwashers (D), and nuts (B) holding fender (E) to angle (F).





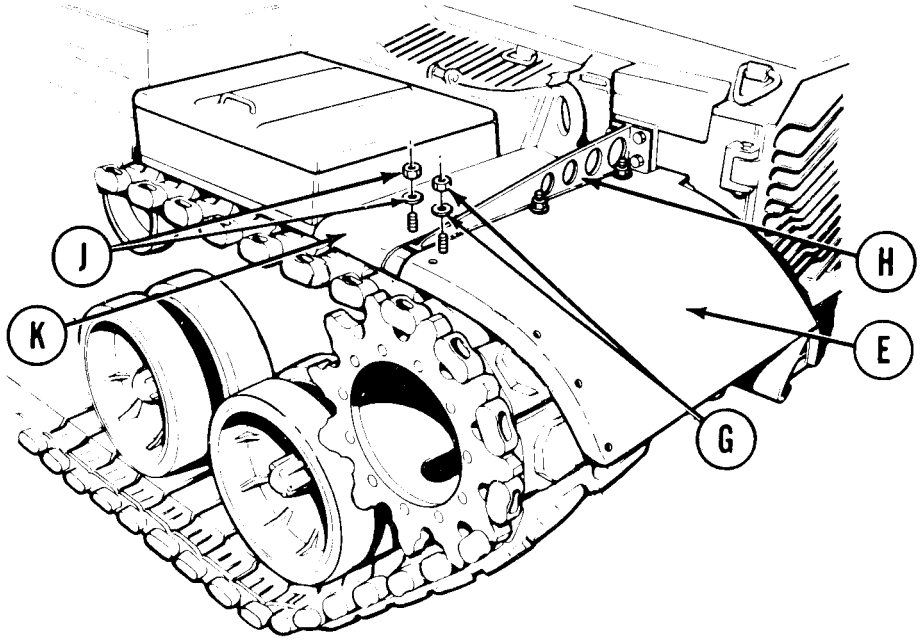
TA249742

Go on to Sheet 2

FENDER AND SHIELD (REAR) REPLACEMENT (Sheet 2 of 7)

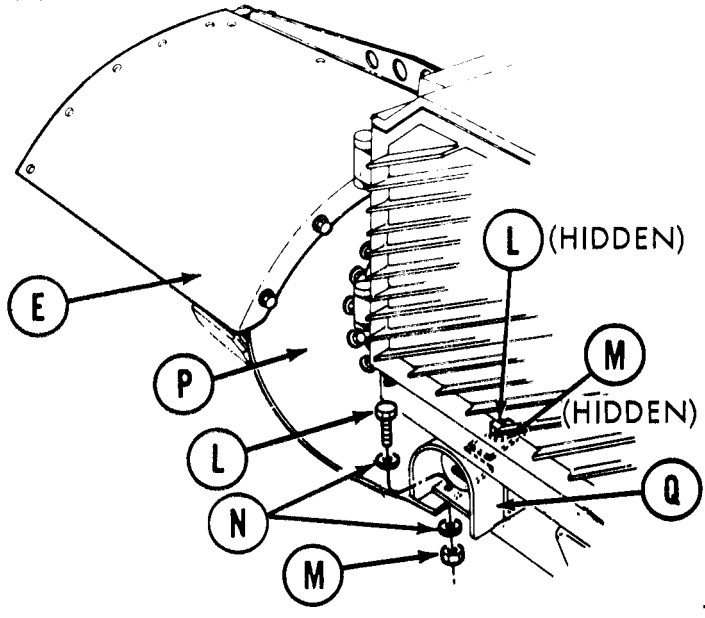
2. Using 9/16 inch socket, remove three locknuts and washers (G) holding fender (E) to support No. 5 (H).

3. Using 9/16 inch socket, remove remaining three nuts and washers (J) holding support No. 5 (H) to stowage box apron (K).



4. Using 9/16 inch socket on two screws (L) and 9/16 inch open end wrench on two locknuts (M), remove two screws (L), washers (N), and nuts (M) holding shield (P) to taillight bracket (Q).

5. Remove fender (E) and shield (Q) from vehicle.

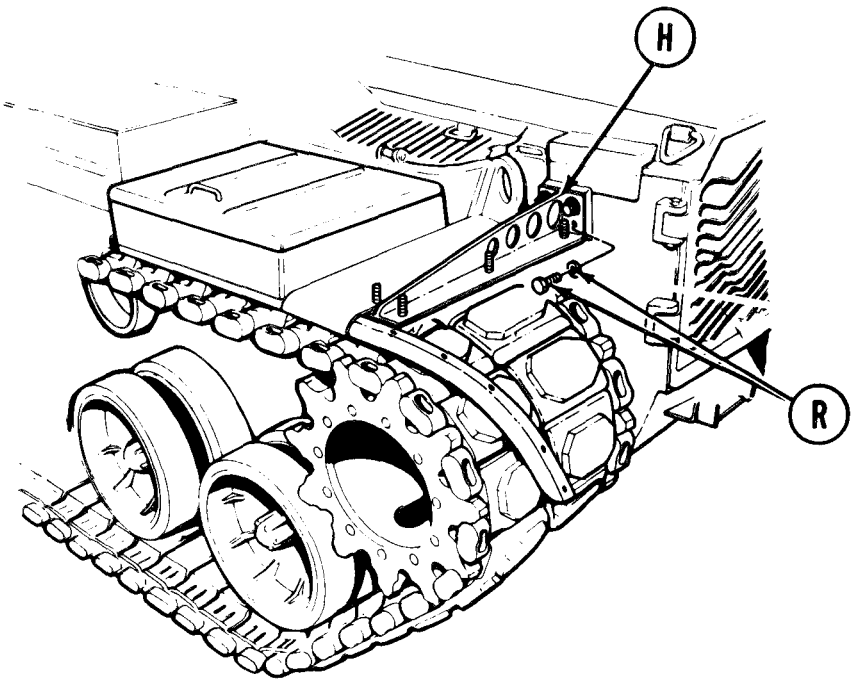


Go on to Sheet 3

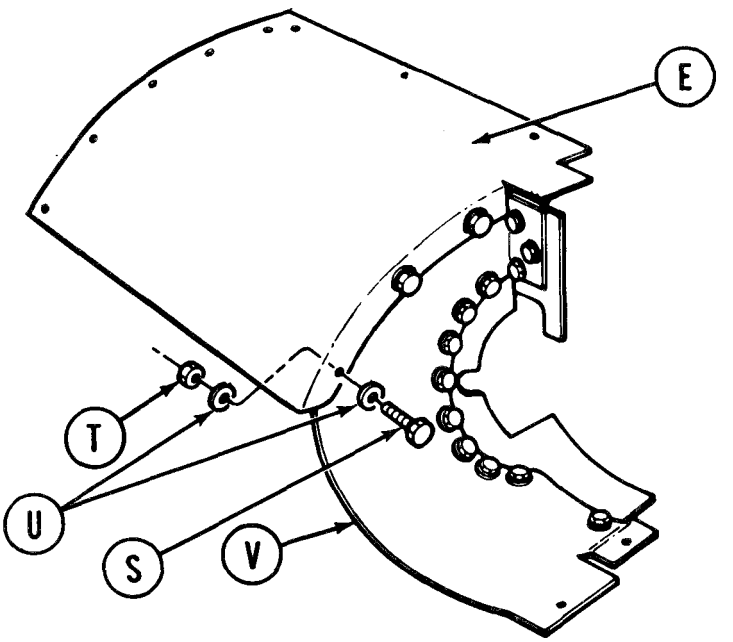
TA249743

FENDER AND SHIELD (REAR) REPLACEMENT (Sheet 3 of 7)

6. Using 1-inch socket, remove four screws and lockwashers (R) holding support No. 5 (H) on vehicle. Remove support No. 5 (H).



7. Using 9/16 inch socket on screw (S) and 9/16 inch wrench on locknut (T), remove three screws (S), nuts (T), and washers (U) holding shield (V) to fender (E). Remove shield (V) from fender (E).



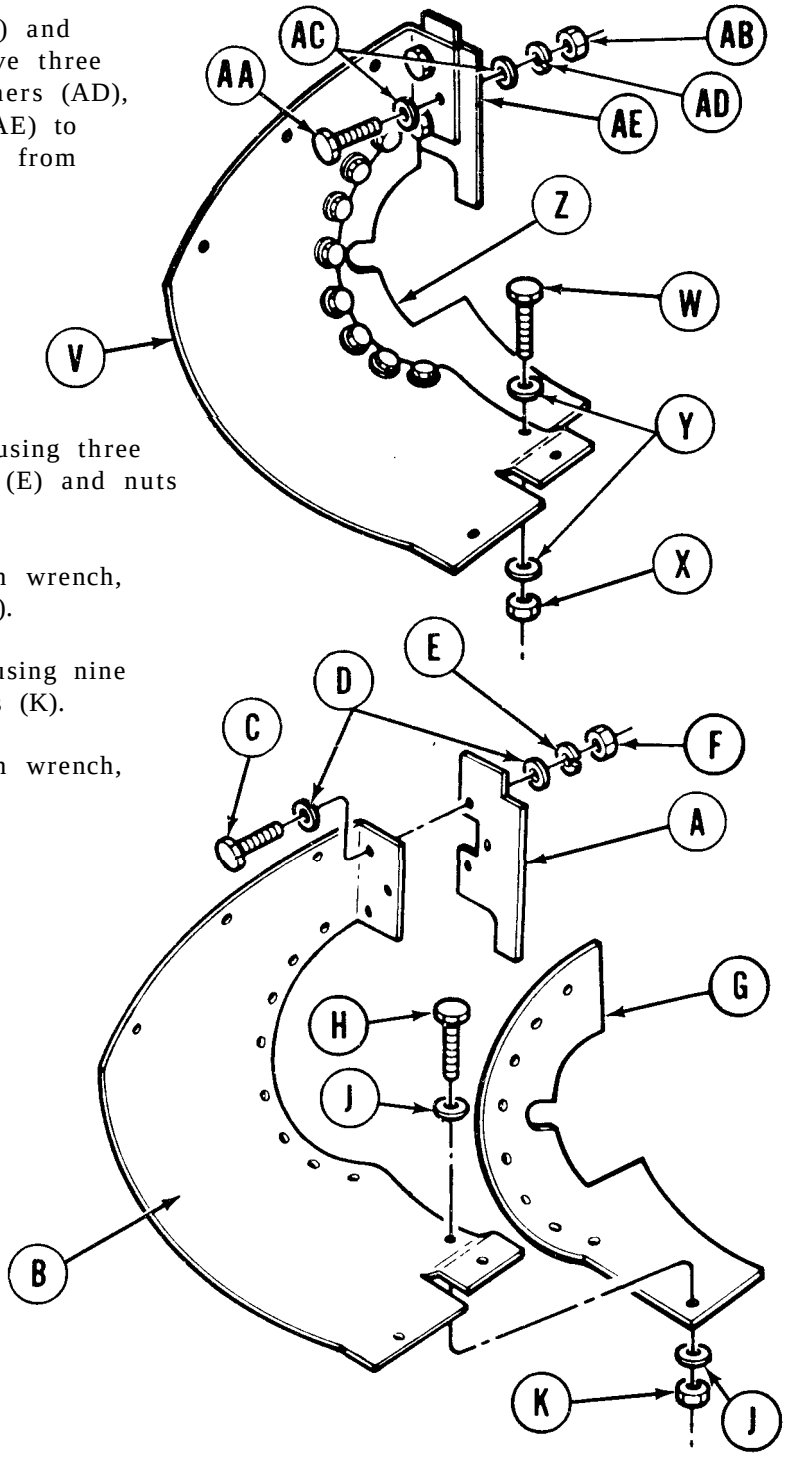
Go on to Sheet 4

TA249744

FENDER AND SHIELD (REAR) REPLACEMENT (Sheet 4 of 7)

8. Using 7/16 inch socket on screw (W) and 7/16 inch wrench on nut (X), remove nine screws (W), washers (Y), and nuts (X) holding anti-squeak (Z) to shield (V). Remove anti-squeak (Z) from shield (W).

9. Using 7/16 inch socket on screw (AA) and 7/16 inch wrench on nut (AB), remove three screws (AA), washers (AC), lockwashers (AD), and nuts (AB), holding anti-squeak (AE) to shield (V). Remove anti-squeak (AE) from shield (V).



INSTALLATION:

1. Install anti-squeak (A) to shield (B) using three screws (C), washers (D), lockwashers (E) and nuts (F).

2. Using 7/16 inch socket and 7/16 inch wrench, tighten three screws (C) and nuts (F).

3. Install anti-squeak (G) to shield (B) using nine screws (H), washers (J), and locknuts (K).

4. Using 7/16 inch socket and 7/16 inch wrench, tighten screws (H) and locknuts (K).

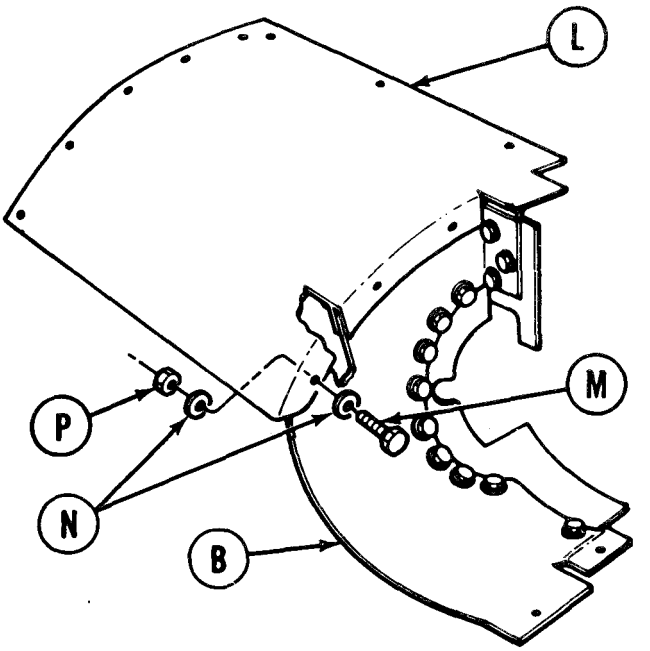
Go on to Sheet 5

TA249745

FENDER AND SHIELD (REAR) REPLACEMENT (Sheet 5 of 7)

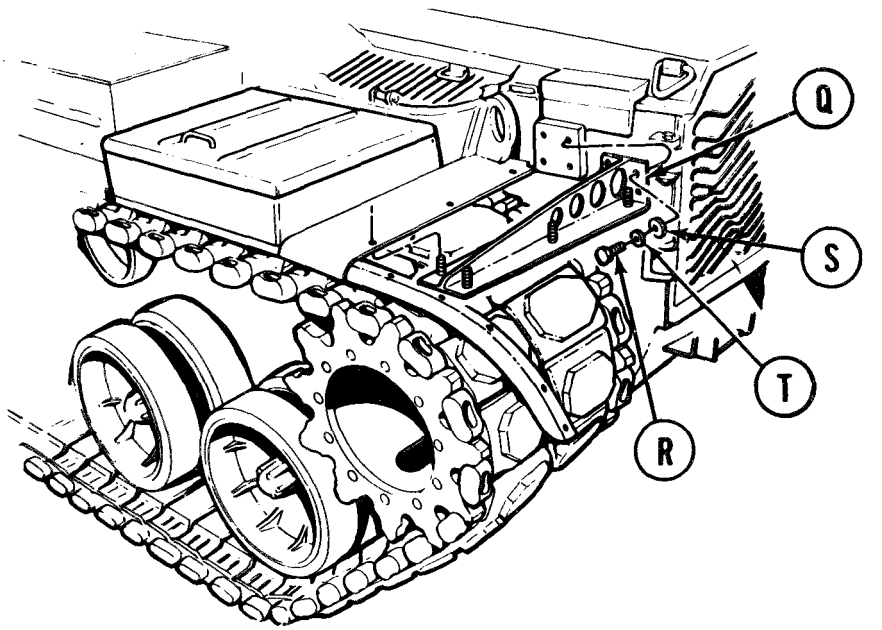
5. Install shield (B) to fender (L) using three screws (M), washers (N), and nuts (P).

6. Using 9/16 inch socket on screw (M) and 9/16 inch wrench on nut (P), tighten screw (M) and nut (P).



7. Install support No. 5 (Q) using four screws (R), washers (S), and lockwashers (T).

8. Using torque wrench and l-inch socket, tighten four screws (R) to 125-130 lb-ft (169-176 N·m).



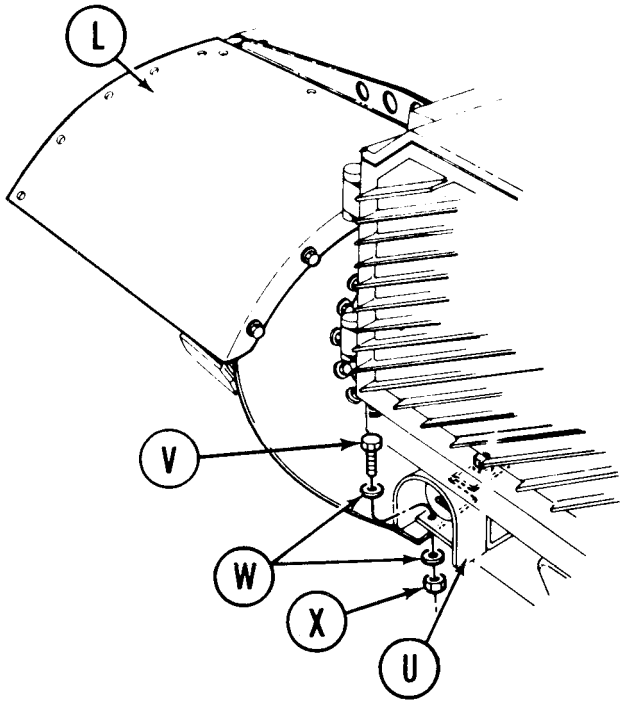
Go on to Sheet 6

TA249746

FENDER AND SHIELD (REAR) REPLACEMENT (Sheet 6 of 7)

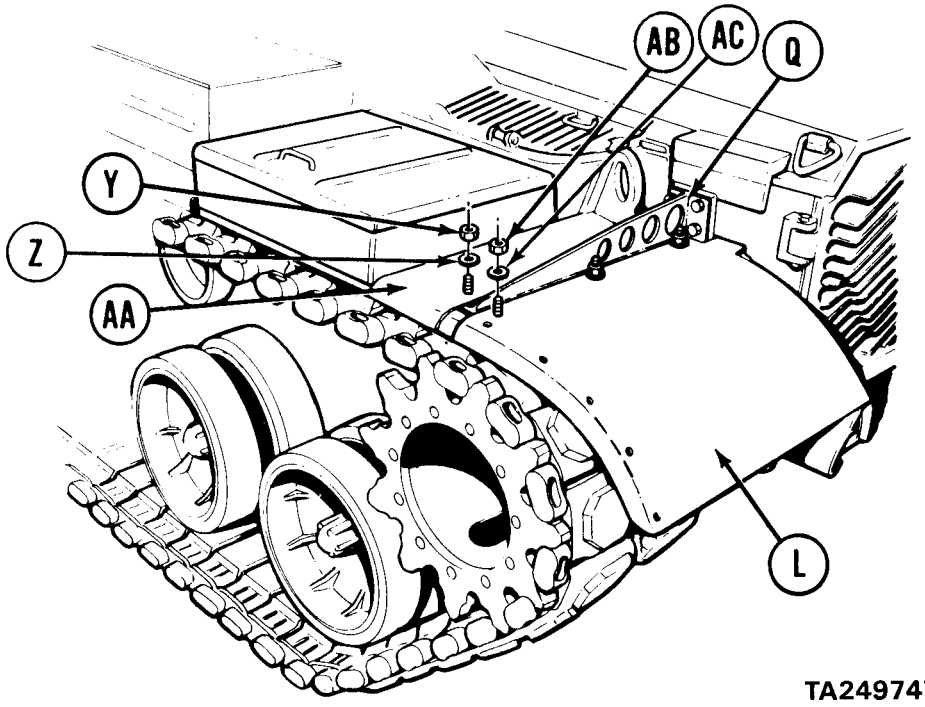
9. Position and secure fender (L) to taillight bracket (U), using two screws (V), washers (W), and locknuts (X).

10. Using 9/16 inch socket on two screws (V) and 9/16 inch wrench on nuts (X), tighten screws and nuts.



11. Using 9/16 inch socket, install three locknuts (Y) and washers (Z) to secure support No. 5 to stowage box apron (AA).

12. Using 9/16 inch socket, install three locknuts (AB) and washers (AC) to secure fender (L) to support No. 5 (Q).



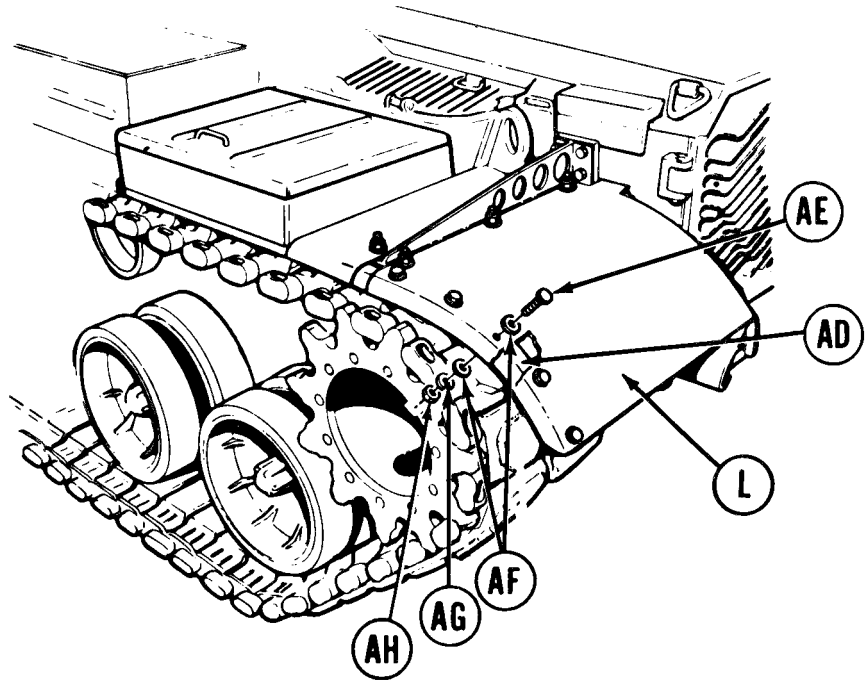
Go on to Sheet 7

TA249747

FENDER AND SHIELD (REAR) REPLACEMENT (Sheet 7 of 7)

13. Install fender (L) to angle bracket (AD) hidden, using five screws (AE), washers (AF), lockwashers (AG), and nuts (AH).

14. Using 9/16 inch socket on screw (AE) and 9/16 inch wrench on nut (AH), tighten screw (AE) and nut (AH).



End of Task

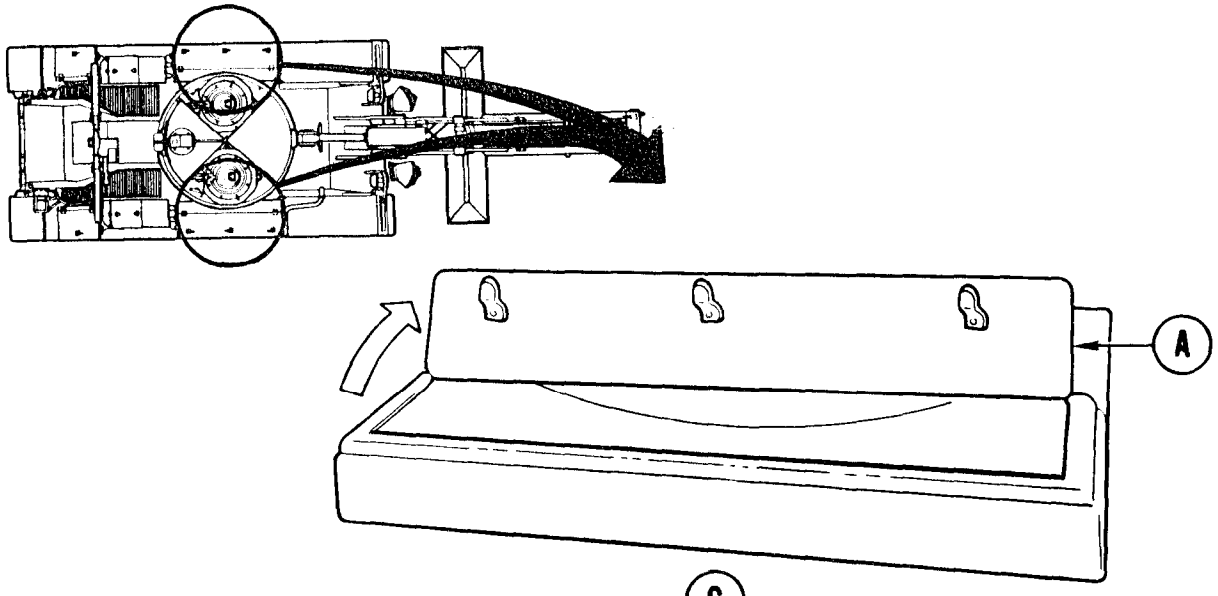
TA249748

FRONT FENDER (CENTER, LEFT AND RIGHT) STOWAGE BOX REPLACEMENT (Sheet 1 of 3)

TOOLS: 9/16 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
9/16 in. combination box and open end wrench
Torque wrench with 1/2 in. drive (0-175 lb-ft)
5/8 in. socket with 1/2 in. drive

PERSONNEL: Two

SUPPLIES: Self-locking nuts (8 required)
Self-locking bolts (4 required)

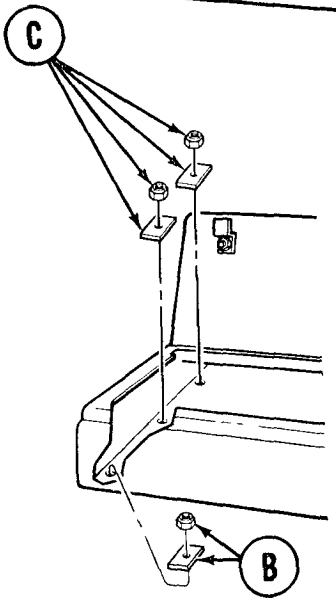


REMOVAL:

NOTE

Left and right stowage boxes are removed in a similar manner. Right side is shown.

1. Open stowage box door (A) for access to hold-down bolts.
2. Using 9/16 socket, remove one nut and plate spacer (B).
3. Using 5/8 socket, remove two nuts and plate spacers (C).

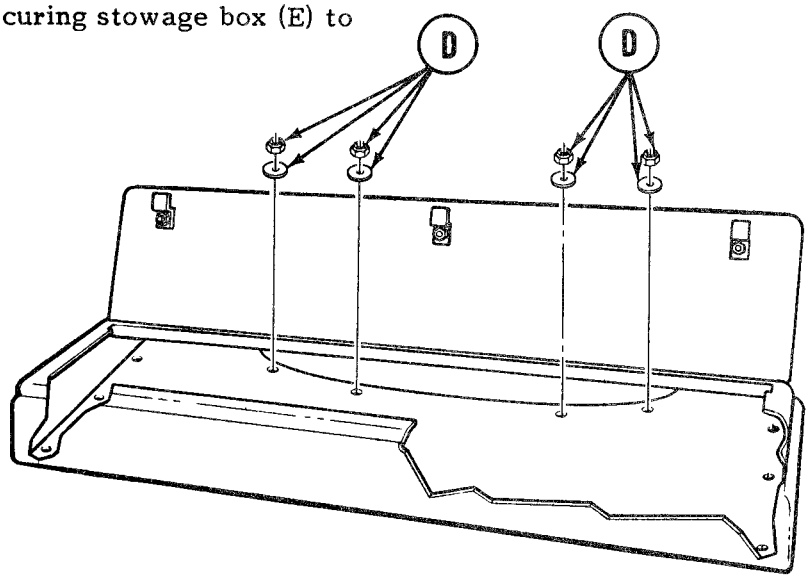


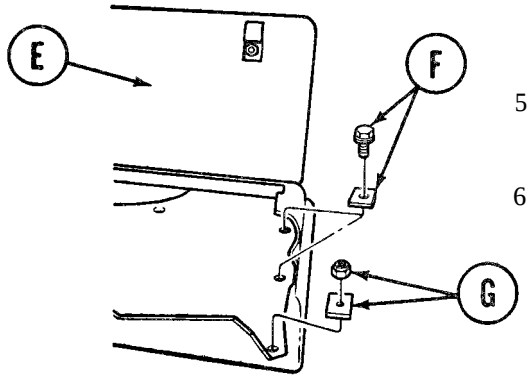
Go on to Sheet 2

TA249749

FRONT FENDER (CENTER, LEFT AND RIGHT) STOWAGE BOX REPLACEMENT (Sheet 2 of 3)

4. Using 9/16 inch socket, remove four nuts and washers (D) securing stowage box (E) to vehicle.





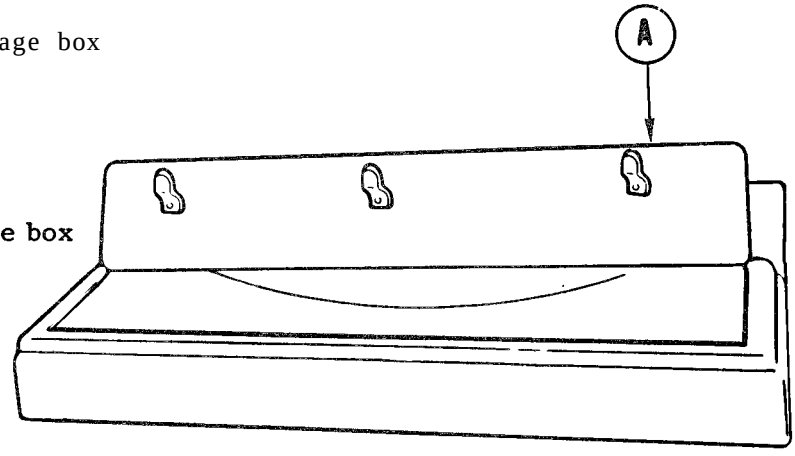
5. Using 5/8 inch socket, remove two bolts and plates (F).

6. Using 9/16 inch socket, remove nuts and

7. Using two persons, remove stowage box (E) from Vehicle.

INSTALLATION:

1. **Using two persons, place stowage box (A) in position on vehicle.**

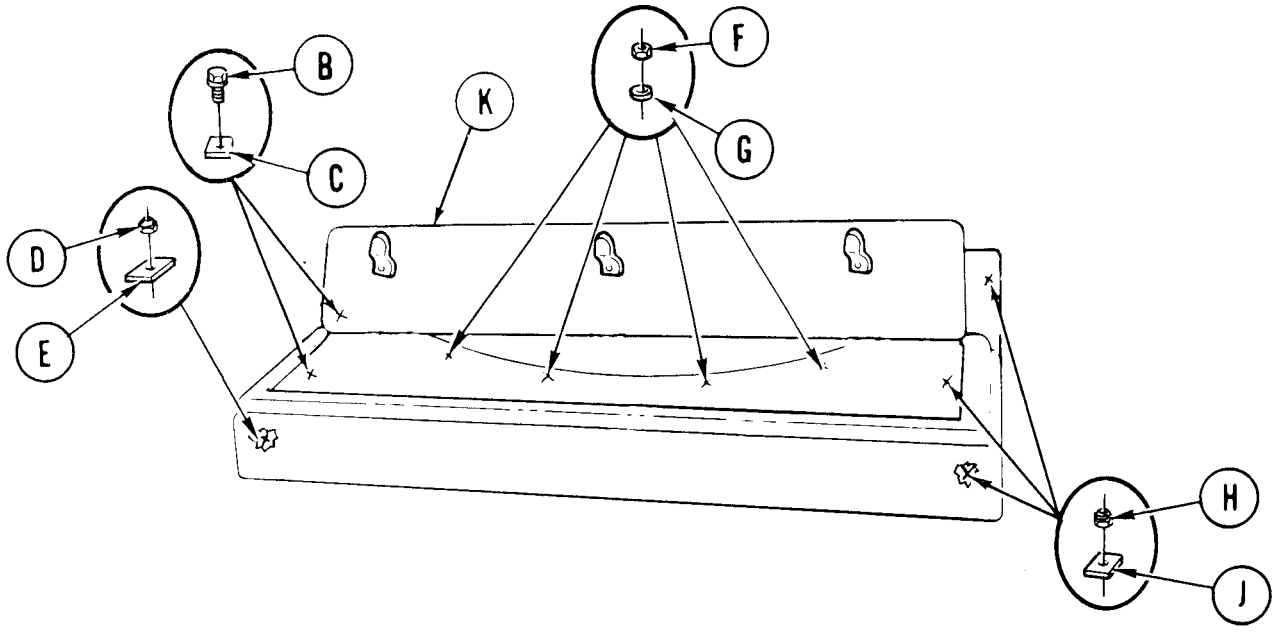


Go on to Sheet 3

FRONT FENDER (CENTER, LEFT AND RIGHT) STOWAGE BOX REPLACEMENT (Sheet 3 of 3)

2. Using 5/8 inch wrench, install bolts (B) and plate spacers (C). Using torque wrench and socket, tighten bolts (B) to 15-20 lb-ft (20-27 N·m).

3. Using 9/16 inch socket, install one nut (D) and plate spacer (E).



4. Using 9/16 inch socket, install four nuts (F) and flat washers (G).

5. Using 5/8 inch socket, install two nuts (H) and plate spacers (J).

6. Close stowage box cover (K).

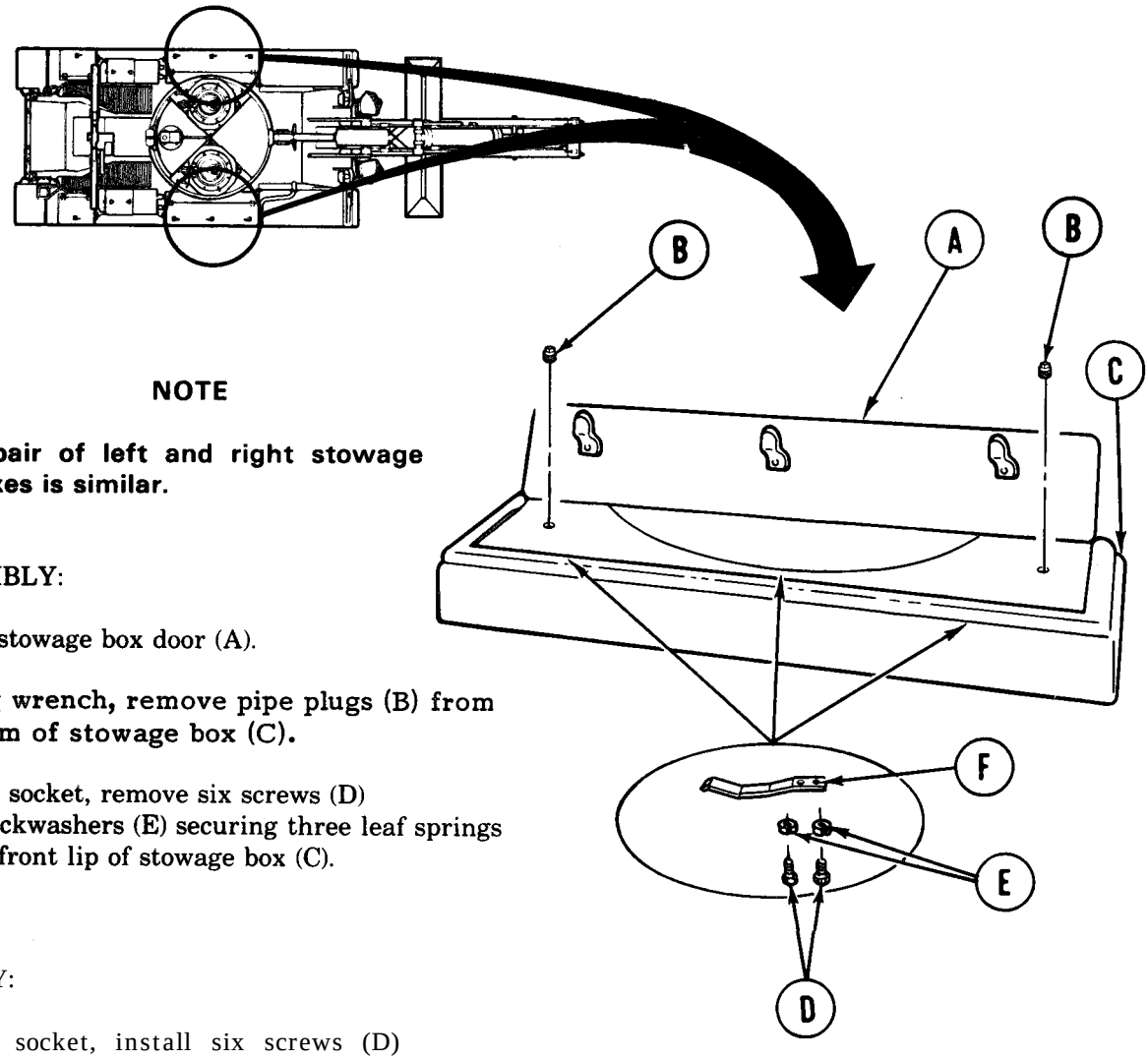
End of Task

TA249751

FRONT FENDER (CENTER LEFT AND RIGHT) STOWAGE BOX REPAIR (Sheet 1 of 1)

TOOLS: 3/8 in. combination box and open end wrench
7/16 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive

SUPPLIES: Lockwashers (6 required)



NOTE

Repair of left and right stowage boxes is similar.

DISASSEMBLY:

1. Open stowage box door (A).
2. Using wrench, remove pipe plugs (B) from bottom of stowage box (C).
3. Using socket, remove six screws (D) and lockwashers (E) securing three leaf springs (F) to front lip of stowage box (C).

ASSEMBLY:

1. Using socket, install six screws (D) and lockwashers (E) to secure three leaf springs (F) to front lip of stowage box (C).
2. Using wrench, install pipe plugs (B).
3. Close stowage box door (A).

End of Task

TA249752

FRONT FENDER (CENTER LEFT AND RIGHT) STOWAGE BOX COVER REPAIR (Sheet 1 of 4)

PROCEDURE INDEX

TOOLS: 9/16 in. combination box and open end wrench
Long round nose pliers
Putty knife
Blacksmith's anvil
Electric drill and drill set
2 lb. hammer
Punch (drive pin 1/8 inch diameter point)
Center punch

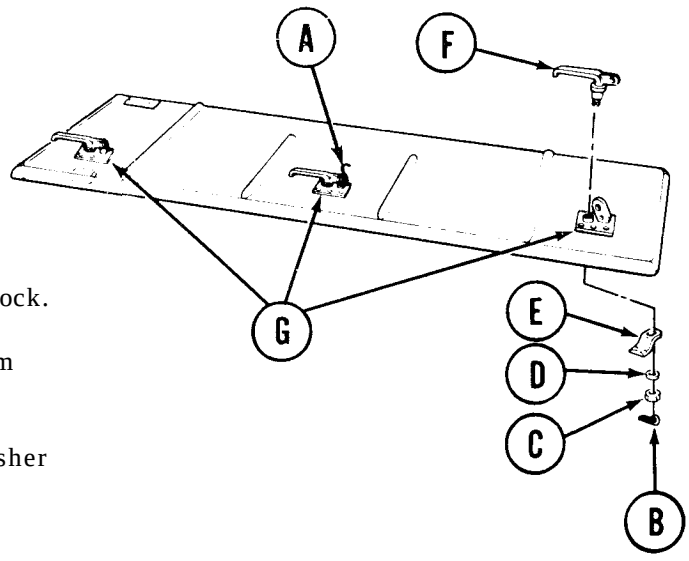
SUPPLIES: Adhesive (Item 2, Appendix D)
Pads (3 required)
Rivets (18 required)
Cotter pin
Lockwasher (12 required)
Washer, shim (as required)
S-chain hook

PRELIMINARY PROCEDURE: Remove stowage box from vehicle (page 16-76)

DISASSEMBLY:

NOTE

Repair of right and left stowage box covers is the same.

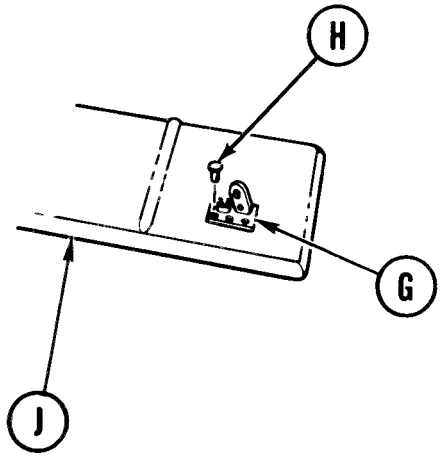


1. Using pliers, remove S-hook (A) from lock.
2. Using pliers, remove cotter pin (B) from latch assembly.
3. Using wrench, remove nut (C), flat washer (D), and tongue (E) from handle (F).
4. Remove handle (F) from lock (G).

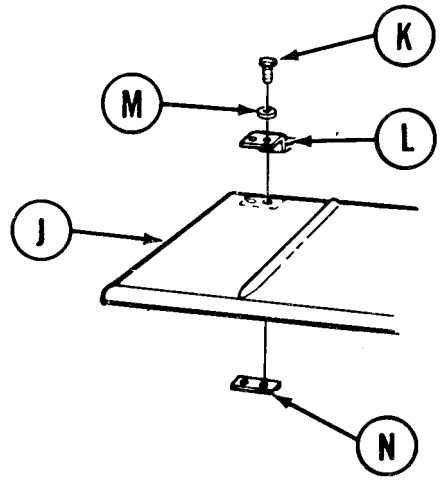
Go on to Sheet 2

TA249753

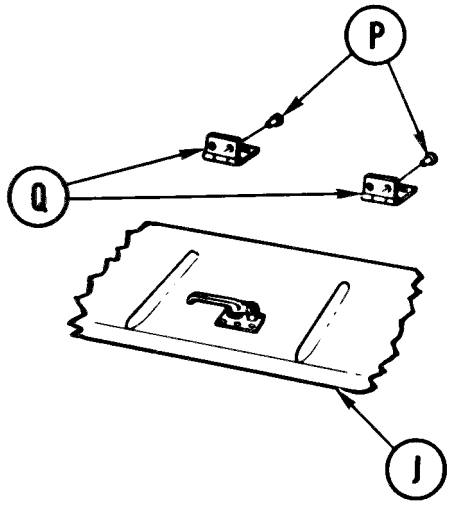
FRONT FENDER (CENTER LEFT AND RIGHT) STOWAGE BOX COVER REPAIR (Sheet 2 of 4)



5. Using electric drill, drill set, punch, and hammer, remove six rivets (H) from lock (G).
6. Remove lock (G) from stowage box cover (J).



7. Using wrench, remove twelve screws (K) and lockwashers (L) from four hinges (M) and six tapping plates (N).
8. Remove stowage box cover (H) from stowage box.



9. Using electric drill, drill set, punch, and hammer, remove four rivets (P) from two middle hinges (Q).
10. Remove two hinges (Q) from stowage box cover (J).

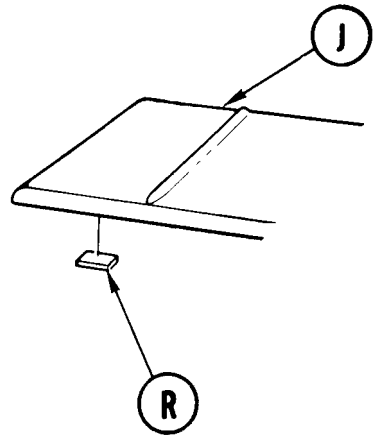
Go on to Sheet 3

TA249754

FRONT FENDER (CENTER LEFT AND RIGHT) STOWAGE BOX COVER REPAIR (Sheet 3 of 4)

11. Using putty knife, remove two pads (R) from bottom side of stowage box cover (J).

12. Restore stowage box cover to serviceable condition by removing dents and straightening to original shape.



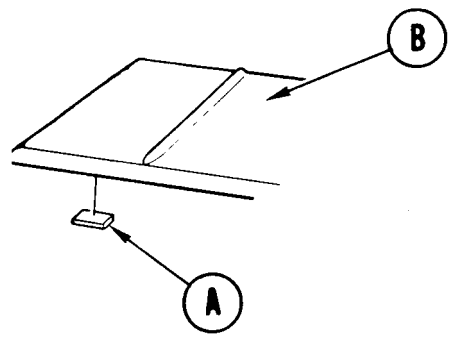
CLEANING AND INSPECTION:

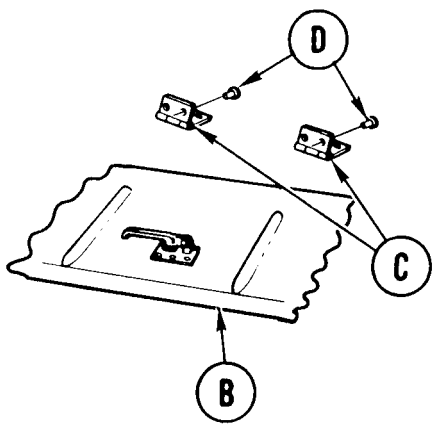
Visually inspect for worn or damaged components and replace as required.

ASSEMBLY:

1. Apply adhesive to two pads (A).

2. Install two pads (A) to bottom of stowage box cover (B).





3. Place two middle hinges (C) in position on stowage box cover (B).

4. Using blacksmith's anvil and hammer, install four new rivets (D).

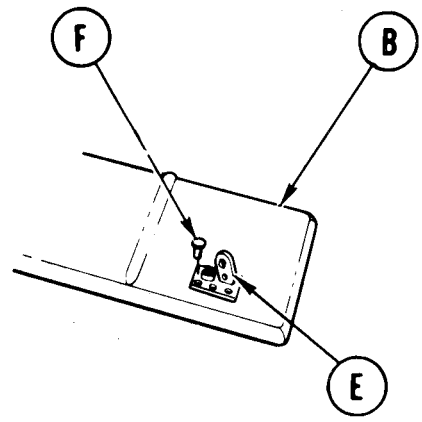
Go on to Sheet 4

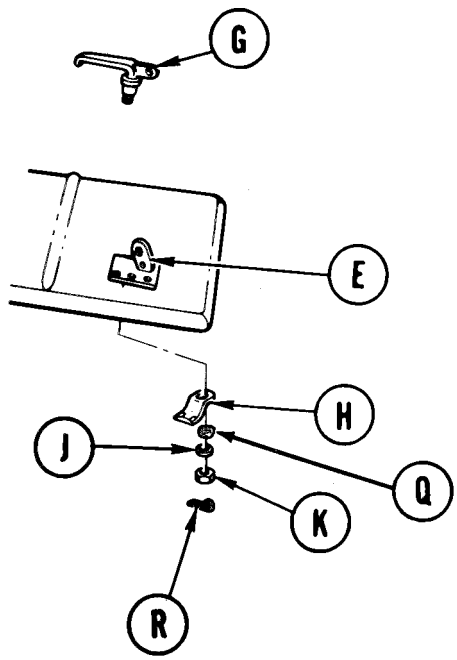
TA249755

FRONT FENDER (CENTER LEFT AND RIGHT) STOWAGE BOX COVER REPAIR (Sheet 4 of 4)

5. Place lock (E) in position on stowage cover (B).

6. Using blacksmith's anvil and hammer, install six new rivets (F).





7. Place handle (G) in position on lock (E).

8. Place tongue (H), washer (J), and nut (K) on handle (G).

9. Place stowage box cover (B) in position on stowage box.

10. Using 9/16 inch wrench, install twelve screws (L) and lockwashers (M) securing four hinges (N) and six tapping plates (P) to cover (B).

11. Close cover (B) and check for positive latching of handle (G). Add shim washers (Q) as necessary to assure positive latching.

12. Using 11/16 inch wrench, tighten nut (K) until hole in handle (G) alines with groove in nut.

13. Using pliers, install new cotter pin (R).

14. Using pliers, install S-hook (S).

15. Install stowage box on vehicle (page 16-77).

End of Task

TA249756

REAR FENDER (LEFT AND RIGHT) STOWAGE BOX COVER REPAIR (Sheet 1 of 3)

TOOLS: 9/16 in. socket with 1/2 in. drive
5/8 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive
9/16 in. combination box and open end wrench
Torque wrench with 1/2 in. drive (0-175 lb-ft)

SUPPLIES: Lockwasher (6 required)
Locknuts (13 required)

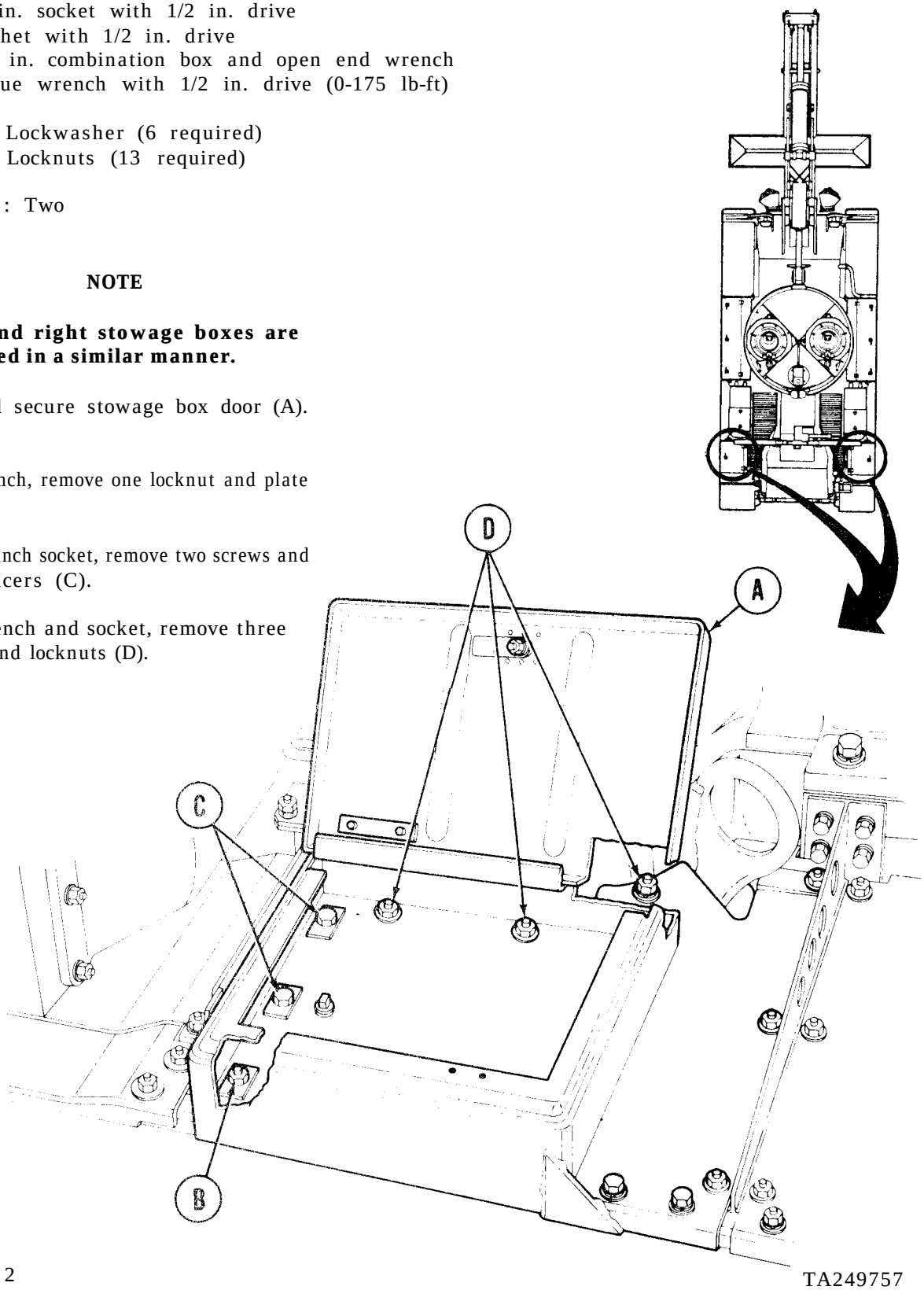
PERSONNEL : Two

REMOVAL:

NOTE

Left and right stowage boxes are removed in a similar manner.

1. Open and secure stowage box door (A).
2. Using wrench, remove one locknut and plate spacer (B).
3. Using 5/8 inch socket, remove two screws and plate spacers (C).
4. Using wrench and socket, remove three washers and locknuts (D).

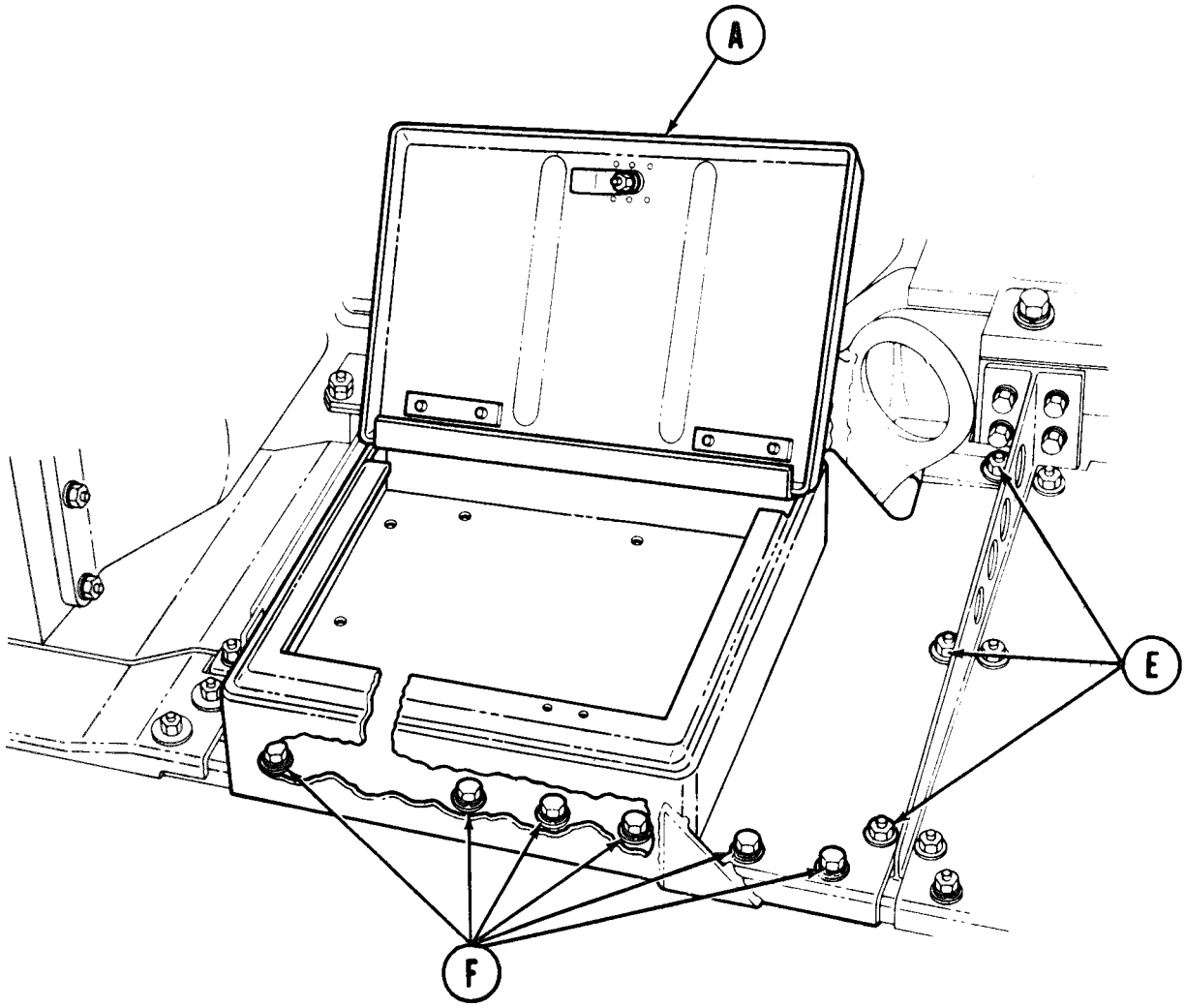


TA249757

Go on to Sheet 2

REAR FENDER (LEFT AND RIGHT) STOWAGE BOX REPLACEMENT (Sheet 2 of 3)

5. Using socket, remove three locknuts and washers (E).



6. Using wrench and socket, remove six screws, nuts, lockwashers, and 12 washers (F).

7. Using two persons, remove stowage box (A) from vehicle.

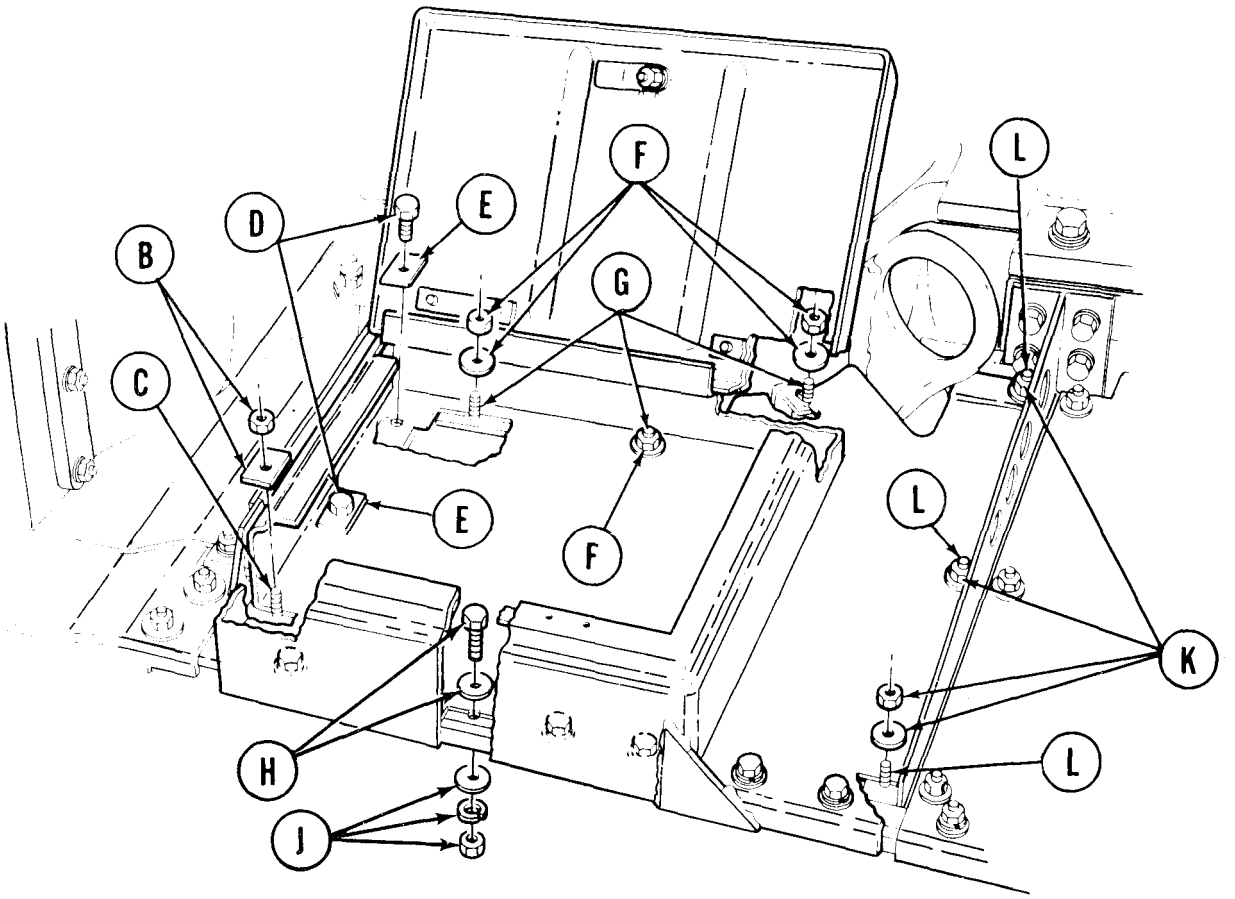
INSTALLATION:

1. Using two persons, place stowage box (A) in position on vehicle.

Go on to Sheet 3

TA249758

REAR FENDER (LEFT AND RIGHT) STOWAGE BOX REPLACEMENT (Sheet 3 of 3)



2. Using fingers, install plate and locknut (B) on stud (C).
3. Using fingers, install two screws (D) and two plates (E).
4. Using fingers, install three washers and locknuts (F) on three studs (G).
5. Using fingers, install six screws and washers (H) and six washers, lockwashers, and nuts (J).
6. Using fingers, install three washers and locknuts (K) on studs (L).
7. Using 9/16 inch socket, tighten seven locknuts (B, F, and K) on seven studs (G and L).
8. Using wrench and socket, tighten eight remaining screws and nuts. Using torque wrench and socket, tighten screws (D) to 15-20 lb-ft (20-27 N·m).
9. Close stowage box cover.

End of Task

TA249759

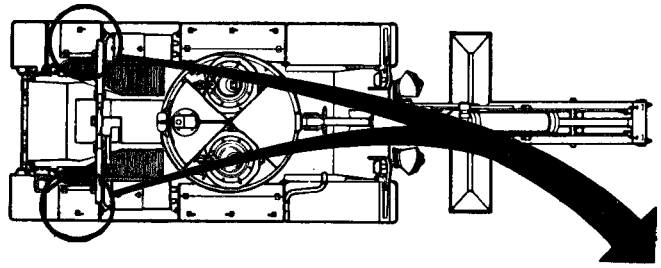
REAR FENDER (LEFT AND RIGHT) STOWAGE BOX REPAIR (Sheet 1 of 1)

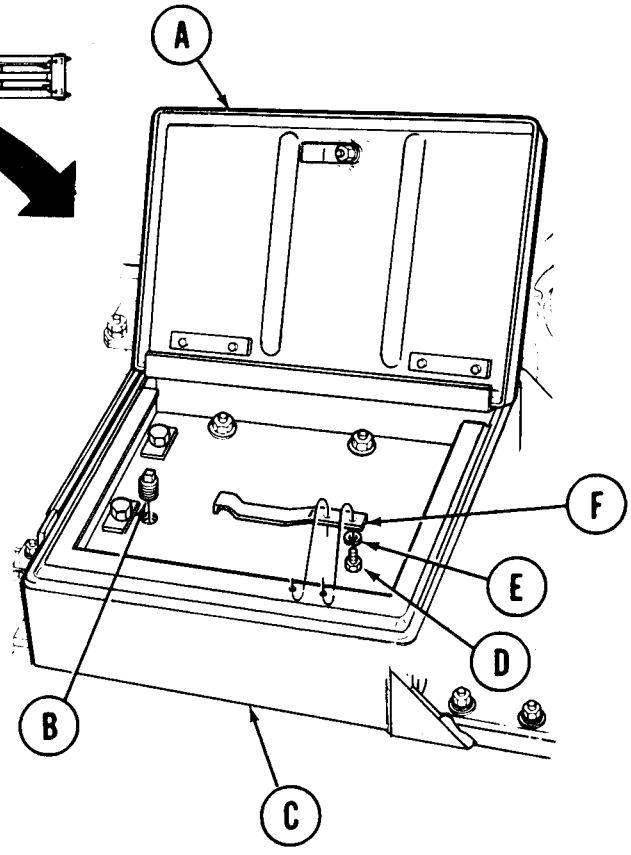
TOOLS: 3/8 in. combination box and open end wrench
7/16 in. socket with 1/2 in. drive
Ratchet with 1/2 in. drive

SUPPLIES: Lockwashers (2 required)
Wire

NOTE

Repair of left and right stowage boxes is similar.





DISASSEMBLY:

1. Open stowage box door (A) and secure door with wire.
2. Using wrench, remove two pipe plugs (B) from bottom of stowage box (C).
3. Using sccket, remove two screws (D) and lockwashers (E) securing leaf spring (F) under front lip of stowage box (C).

ASSEMBLY:

1. Using socket, install two screws (D) and lockwashers (E) to secure leaf spring (F) under front lip of stowage box (C).
2. Using wrench, install two pipe plugs (B).
3. Close stowage box door (A).

End of Task

TA249760

REAR FENDER (LEFT AND RIGHT) STOWAGE BOX COVER REPAIR (Sheet 1 of 4)

PROCEDURE INDEX

TOOLS: 11/16 in. combination box and open end wrench
Long round nose pliers
Putty knife
Blacksmith's anvil
9/16 in. combination box and open end wrench
2 lb. hammer
Punch (drive pin 1/8-inch diameter point)
Electric drill and drill set

SUPPLIES: Adhesive (Item 2, Appendix D)
Cotter pin
Rivets
Lockwasher (8 required)
Pads (2 required)
Washer, shims (as required)

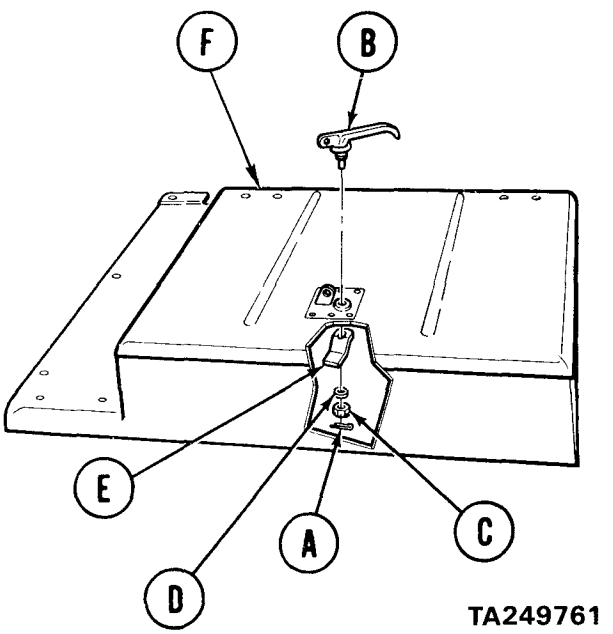
PRELIMINARY PROCEDURE: Remove stowage box from vehicle (page 16-84)

DISASSEMBLY:

NOTE

Repair of both left and right covers is identical.

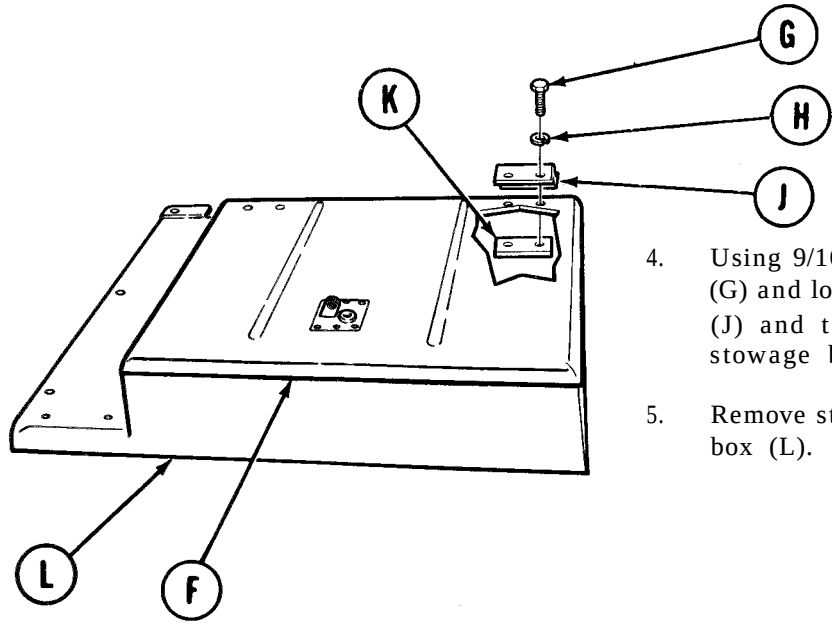
1. Using pliers, remove cotter pin (A) from handle (B).
2. Using 11/16 inch wrench, remove nut (C), washer (D) and tongue (E) from handle (B).
3. Remove handle (B) from stowage box cover (F).



TA249761

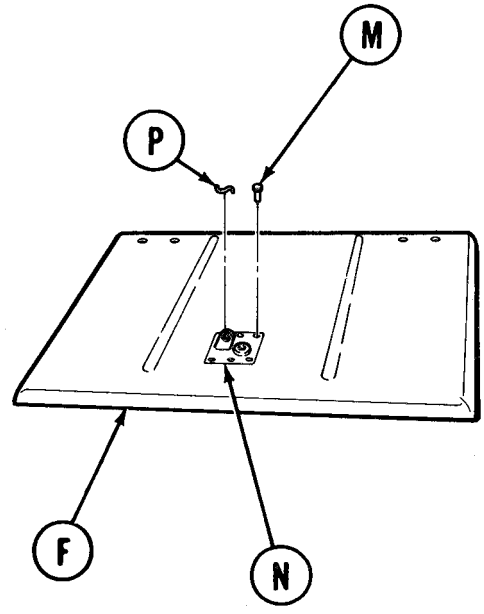
Go on to Sheet 2

REAR FENDER (LEFT AND RIGHTI STOWAGE BOX COVER REPAIR (Sheet 2 of 4)



4. Using 9/16 inch wrench, remove eight screws (G) and lockwashers (H) securing two hinges (J) and tapping plates (K) to cover (F) and stowage box (L).

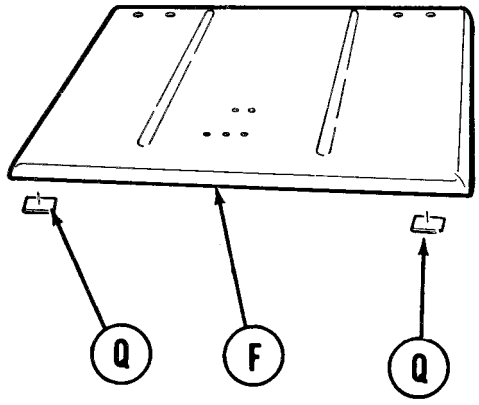
5. Remove stowage box cover (F) from stowage box (L).



6. Using electric drill, hammer, and punch, remove six rivets (M) from lock (N).

7. Remove lock (N) from cover (F).

8. Using pliers, remove S-hook (P) from lock (N).



9. Using putty knife, remove two pads (Q) from bottom of cover (F).

10. Restore rear stowage box cover to serviceable condition by removing dents and straightening to original shape.

Go on to Sheet 3

TA249762

REAR FENDER (LEFT AND RIGHT) STOWAGE BOX COVER REPAIR (Sheet 3 of 4)

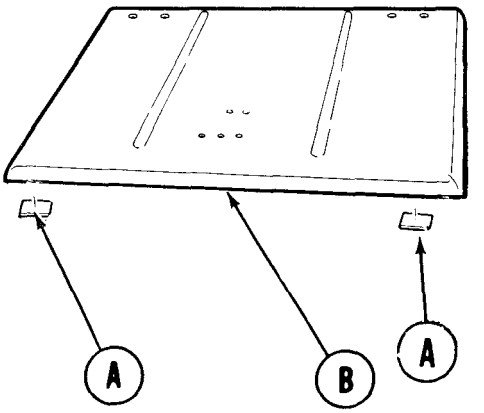
CLEANING AND INSPECTION:

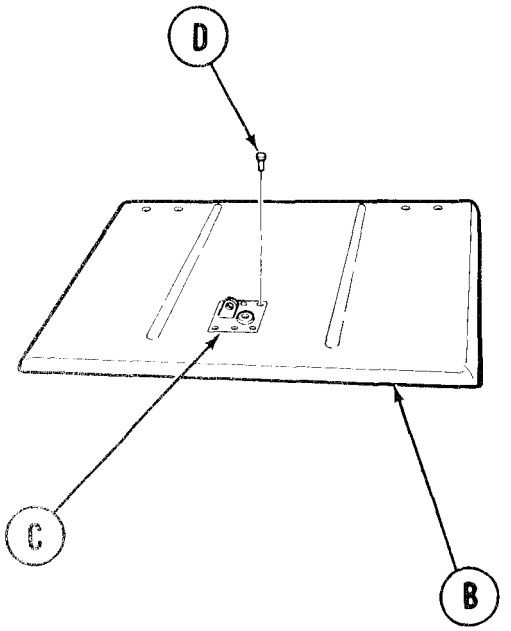
Visually inspect worn or damaged components, Replace as required.

ASSEMBLY:

1. Apply adhesive to two pads (A).

2. Install two pads (A) to bottom side of stowage box cover (B).



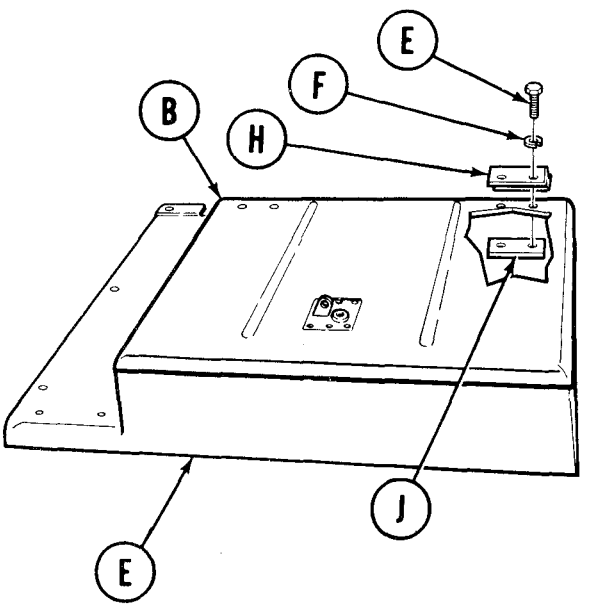


3. Place lock (C) in position on stowage box cover (B).

4. Using blacksmith's anvil and hammer, install six rivets (D).

5. Place stowage box cover (B) in position on stowage box (E).

6. Using 9/16 inch wrench, install eight screws (F) amd lockwashers (G) securing two hinges (H) and tapping plates (J) to stowage box (E) and cover (B).



Go on to Sheet 4

TA249763

REAR FENDER (LEFT AND RIGHT) STOWAGE BOX COVER REPAIR (Sheet 4 of 4)

7. Place handle (K) in position on lock (C).

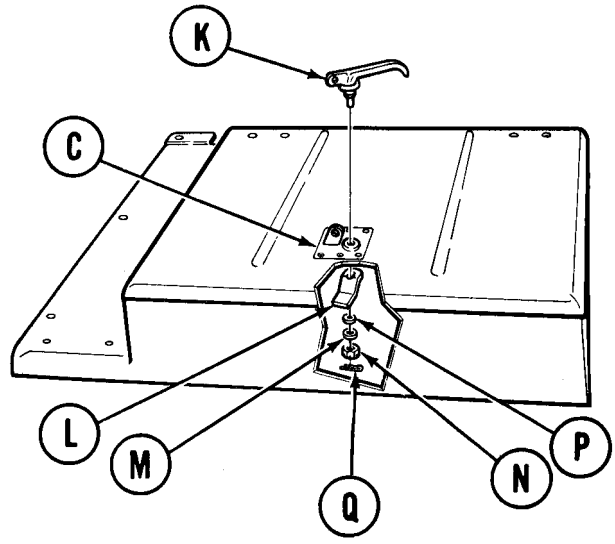
8. Install tongue (L), washer (M), and nut (N) on handle (K).

9. Close cover (B) and check for positive locking of latch assembly. Add shim washers (P) as necessary to assure positive locking.

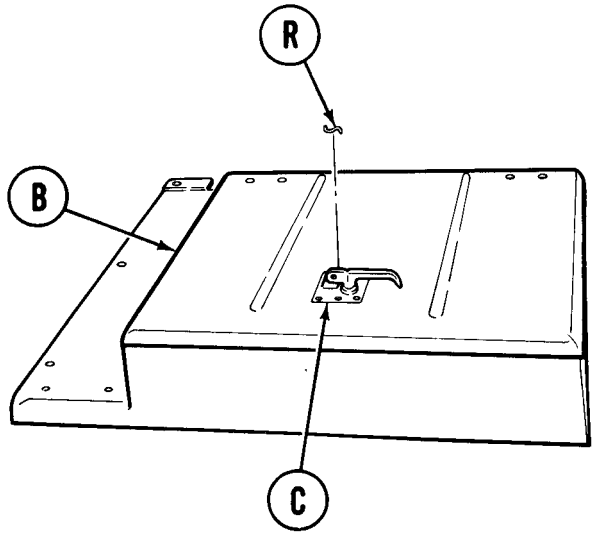
10. Using 11/16 inch socket, tighten nut (N) until hole in handle (K) shaft alines with slot on nut (N).

11. Using pliers, install cotter pin (Q).

12. Using pliers, install S-hook (R) to lock (C).



13. Install stowage box on vehicle



End of Task

TA249764

By Order of the Secretary of the Army:

JOHN A. WICKHAM, JR.
General, United States Army
Chief of Staff

Official:

MILDRED E. HEDBERG
Brigadier General, United States Army
The Adjutant General

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PART I – ALL PUBLICATIONS (EXCEPT RPSTL AND SC/SM) AND BLANK FORMS

PUBLICATION/FORM NUMBER	DATE	TITLE
TM 5-5420-202-20-3	28 October 1985	M60A1 Tank Chassis, Transporting for Bridge, Armored-Vehicle-Launched; Scissoring Type, Class 60

ITEM NO.	PAGE NO.	PARA-GRAPH	LINE NO. *	FIGURE NO.	TABLE NO.	RECOMMENDED CHANGES AND REASON (Provide exact wording of recommended changes, if possible).
	0004 00-2	4-7				Wrong POC is listed. 

**Reference to line numbers within the paragraph or subparagraph.*

TYPED NAME, GRADE OR TITLE	TELEPHONE EXCHANGE/AUTOVON, PLUS EXTENSION	SIGNATURE
Your Name		Your Signature

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PAGE NO.	COLM NO.	LINE NO.	NATIONAL STOCK NUMBER	REFERENCE NO.	FIGURE NO.	ITEM NO.	TOTAL NO. OF MAJOR ITEMS SUPPORTED	RECOMMENDED ACTION

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THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE

1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
1 Meter = 100 Centimeters = 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 = 1,000,000 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

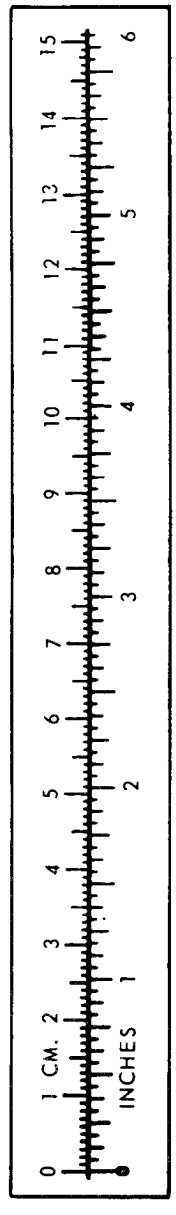
TEMPERATURE

$\frac{5}{9}(°F - 32) = °C$
212° Fahrenheit is equivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius
$\frac{9}{5}\,°C + 32 = °F$

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	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
Kilometers per Liter	Miles per Gallon	2.354
Kilometers per Hour	Miles per Hour	0.621



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