

CAUTION

Be sure fan blades do not hit oil cooler fins. Damage to equipment may occur.

NOTE

- Both fans are removed the same way. Top fan is shown.
- Both fans must be removed from the forklift together.

- (2) Remove four nuts (3) and fan (4) from two brackets (5).

b. Disassembly.

WARNING

Tip of removal tool is very sharp. Use caution when using tool. Failure to comply may result in injury to personnel.

- (1) Insert removal tool into cavity (1) on connector S17 (2) until seated.
- (2) Pull wires (3) and contact (4) back through connector S17 (2) and remove tool.

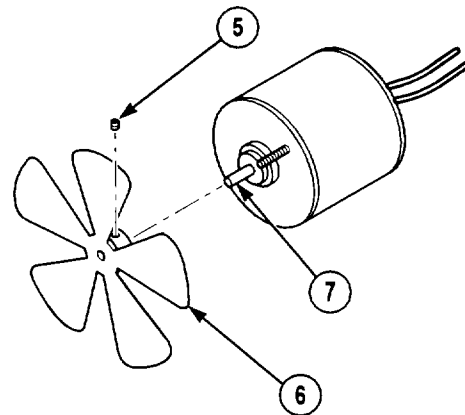
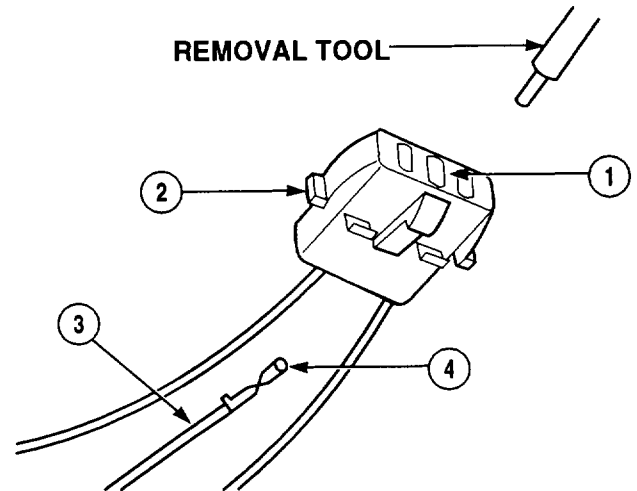
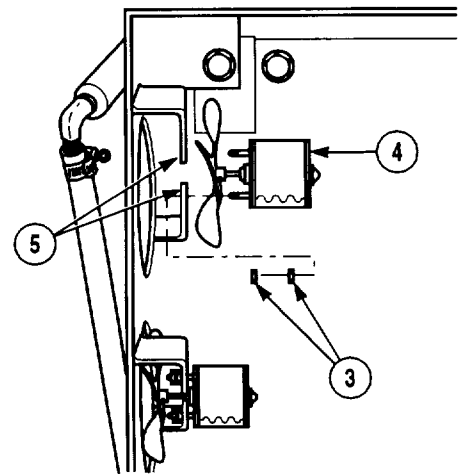
NOTE

- Record position of fan on shaft prior to removal.
- Replace cable ties as required.

- (3) Remove set screw (5) and slide fan blade (6) from shaft (7).

c. Assembly.

- (1) Install fan blade (6) on motor shaft (7) as noted during removal. Tighten set screw (5).



7-37. DRIVE AXLE COOLING FANS REPLACEMENT/REPAIR (CONT).

- (2) Push terminal (4) and wires (3) through connector S17 (2).

d. Installation.

CAUTION

Ensure fan blades do not hit oil cooler fins. Damage to equipment may occur.

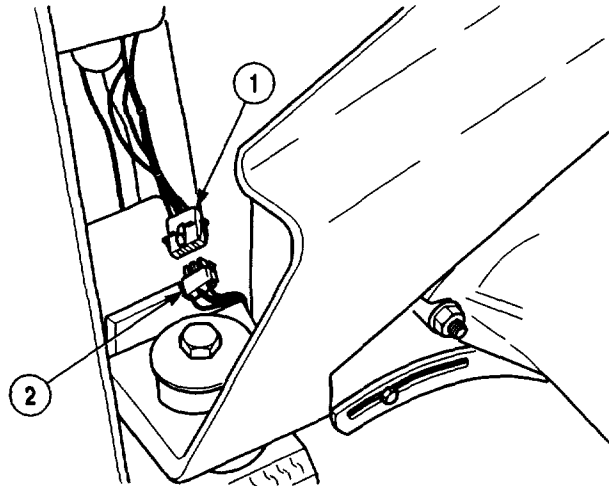
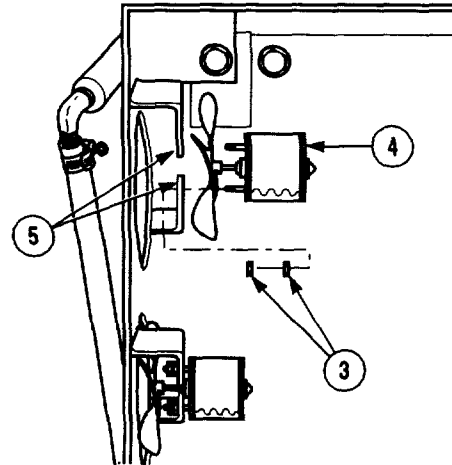
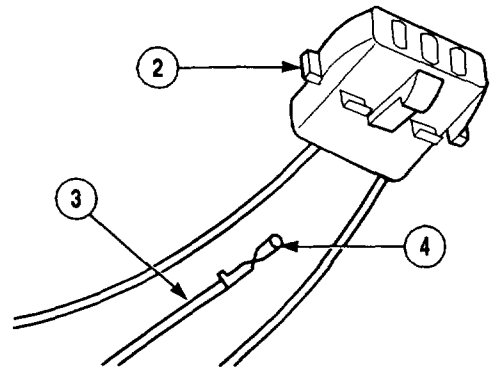
NOTE

Both fans are installed the same way.
Top fan is shown.
Both fans must be installed on the forklift together.

- (1) Install fan (4) on two brackets (5) with four nuts (3).
- (2) Connect connector S17 (2) to connector P17 (1).

Follow-on Maintenance:

- Verify air flow from engine ventilation panel.
- Install engine ventilation panel (Para 6-2).
- Remove wheel chocks (TM 10-3930-669-10)



END OF TASK

7-38. SHUNT ASSEMBLY REPLACEMENT.

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

Materials/Parts

Washers, Lock
Washers, Lock
Washers, Lock (2)
Shims (6)
Washer, Lock

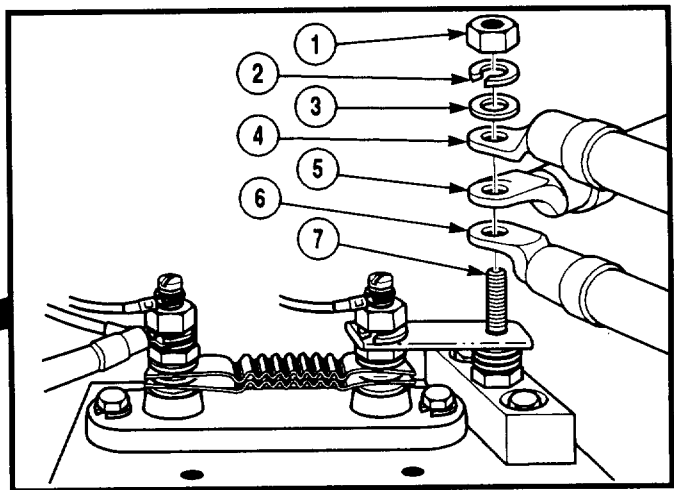
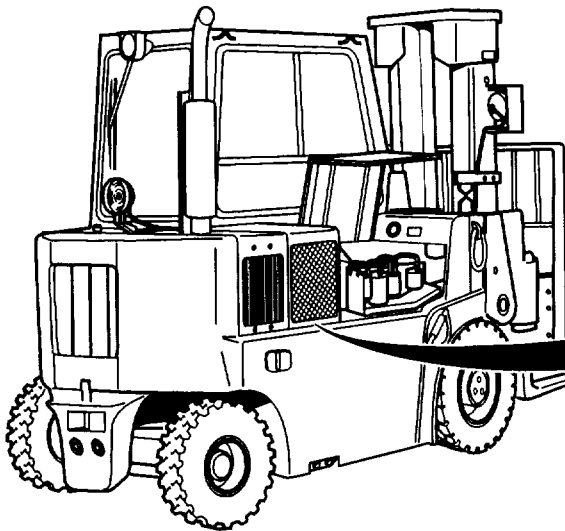
Equipment Condition - Continued

Washers, Lock (2)
Washers, Lock (2)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Relay panel removed (Para 7-51)
Batteries disconnected (Para 7-48)
Engine ventilation panel removed (Para 6-2)

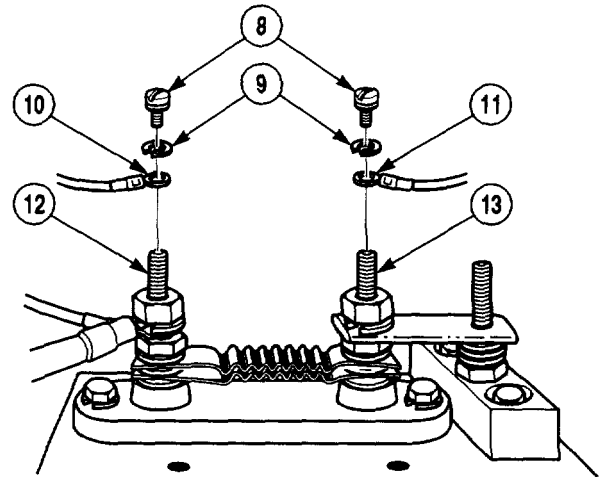
a. Removal.



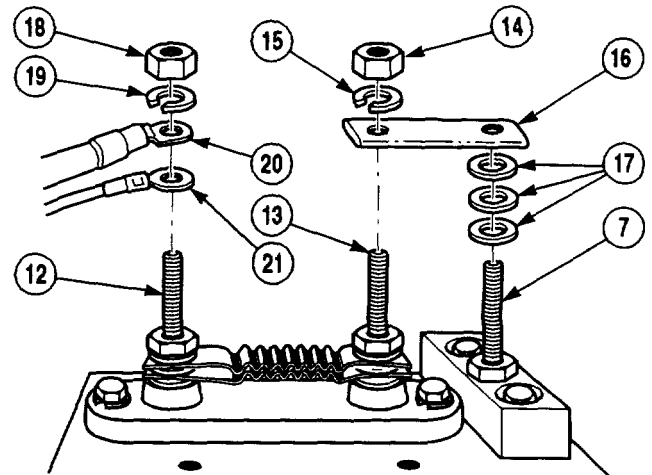
- (1) Remove nut (1), lock washer (2), washer (3), and three cables (4, 5, and 6) from terminal (7). Discard lock washer.

7-38. SHUNT ASSEMBLY REPLACEMENT (CONT).

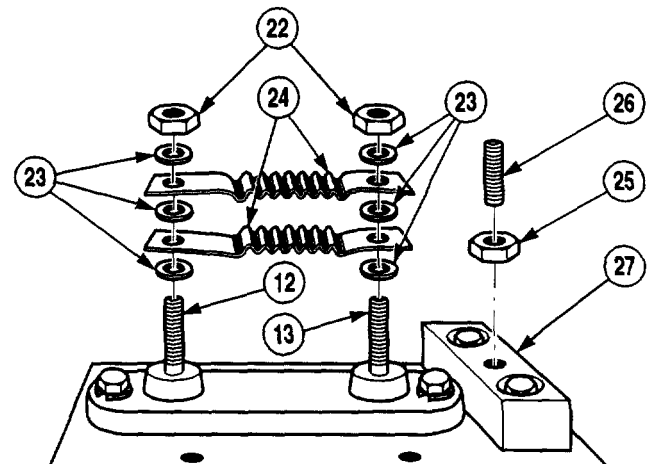
- (2) Remove two screws (8), lock washers (9), and wires (10 and 11) from two terminals (12 and 13). Discard lock washers.



- (3) Remove nut (14), lock washer (15), bar (16), and three washers (17) from two terminals (7 and 13). Discard lock washer.
- (4) Remove nut (18), lock washer (19), and two cables (20 and 21) from terminal (12). Discard lock washer.



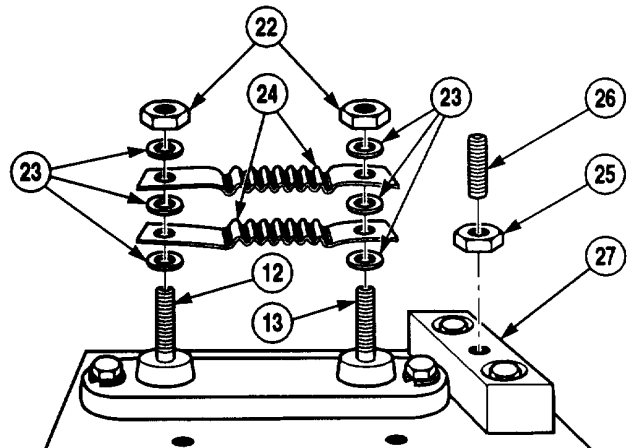
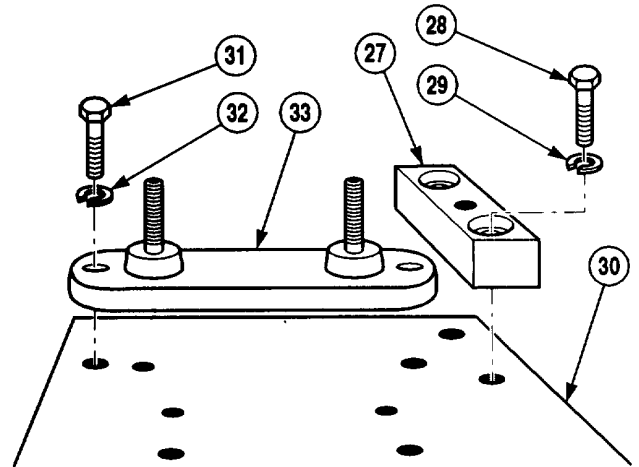
- (5) Remove two nuts (22), six shims (23), and two resistor plates (24) from two terminals (12 and 13). Discard shims.
- (6) Remove nut (25) and stud (26) from base (27).



- (7) Remove two screws (28), lock washers (29), and connector strip (27) from engine hull (30). Discard lock washers.
- (8) Remove two screws (31), lock washers (32), and resistor base (33) from engine hull (30). Discard lock washers.

b. Installation.

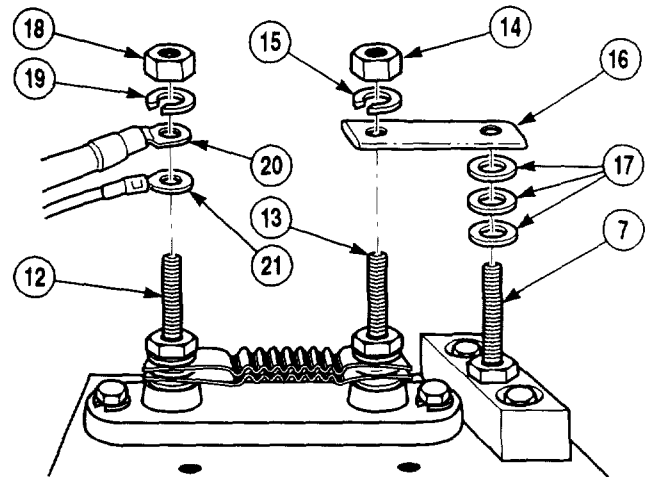
- (1) Install resistor base (33) on engine hull (30) with two lock washers (32) and screws (31).
- (2) Install connector strip (27) on engine hull (30) with two lock washers (29) and screws (28).
- (3) Install stud (26) and nut (25) on base (27).
- (4) Install two resistor plates (24) on two terminals (12 and 13) with six shims (23) and two nuts (22).



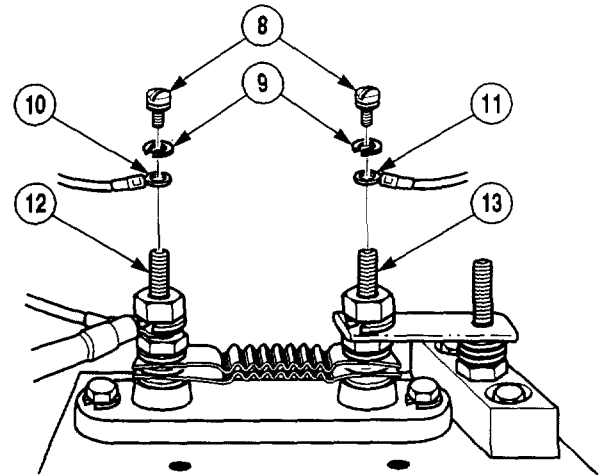
7-38. SHUNT ASSEMBLY REPLACEMENT (CONT).

- (5) Install two cables (20 and 21) on terminal (12) with lock washer (19) and nut (18).

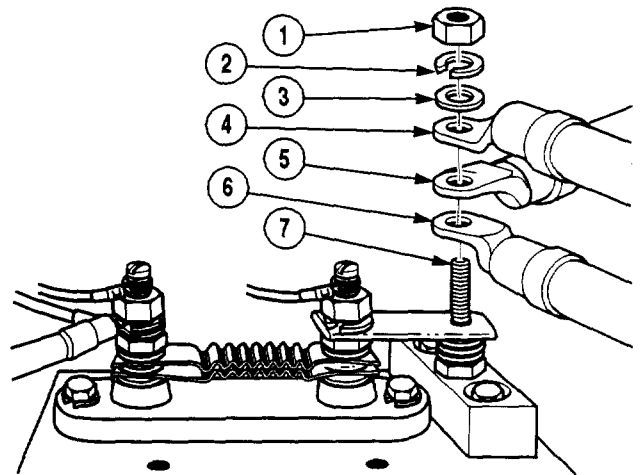
- (6) Install three washers (17) and bar (16) on two terminals (7 and 13) with lock washer (15) and nut (14).



- (7) Install two wires (10 and 11) on two terminals (12 and 13) with two lock washers (9) and screws (8).



- (8) Install three cables (4, 5, and 6) on terminal (7) with washer (3), lock washer (2), and nut (1).



NOTE

Follow-on Maintenance:

- Install relay panel (Para 7-51).
- Install engine ventilation panel (Para 6-2)
- Connect batteries (Para 7-48).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

7-39. BROKEN BELT INDICATOR REPLACEMENT.

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Appendix 1, Item B)

Materials / Parts

Cable Ties (Item 4, Appendix C)

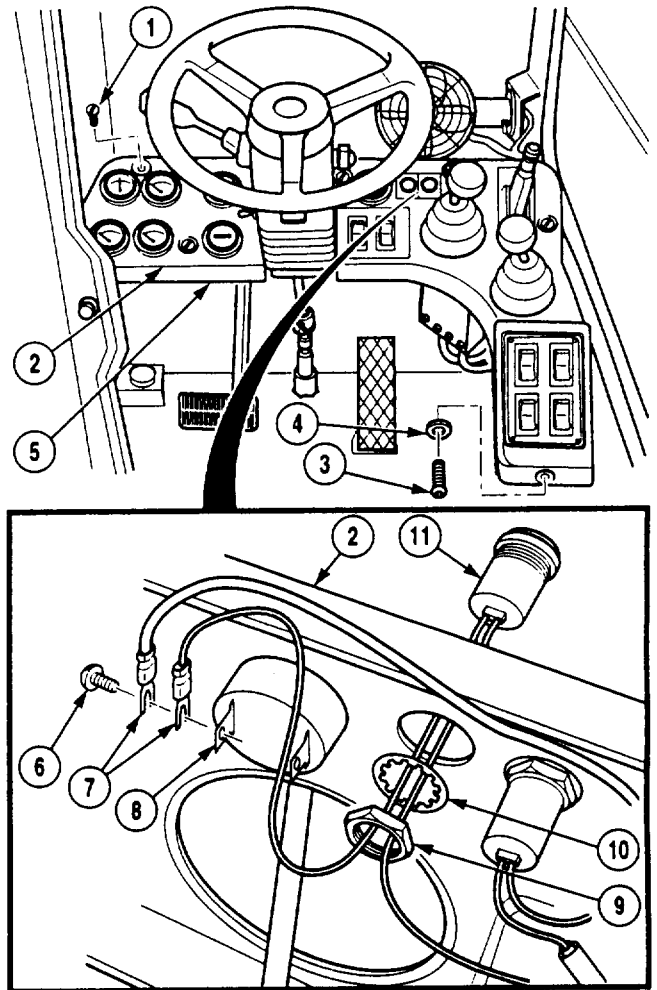
Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Batteries disconnected (Para 7-48)
Cab door opened (TM 10-3930-669-10)

a. Removal

NOTE
Cut cable ties as required.

- (1) Remove four screws (1) from instrument panel (2).
- (2) Remove screw (3) and washer (4), and raise instrument panel (2) from dash frame (5).
- (3) Remove two screws (6) and four wires (7) from broken belt warning buzzer (8).
- (4) Remove nut (9), washer (10), and indicator (11) from instrument panel (2).



7-39. BROKEN BELT INDICATOR REPLACEMENT (CONT).

b. Installation.

- (1) Install indicator (11) in instrument panel (2) with washer (10) and nut (9).
- (2) Install four wires (7) on broken belt warning buzzer (8) with two screws (6).

NOTE

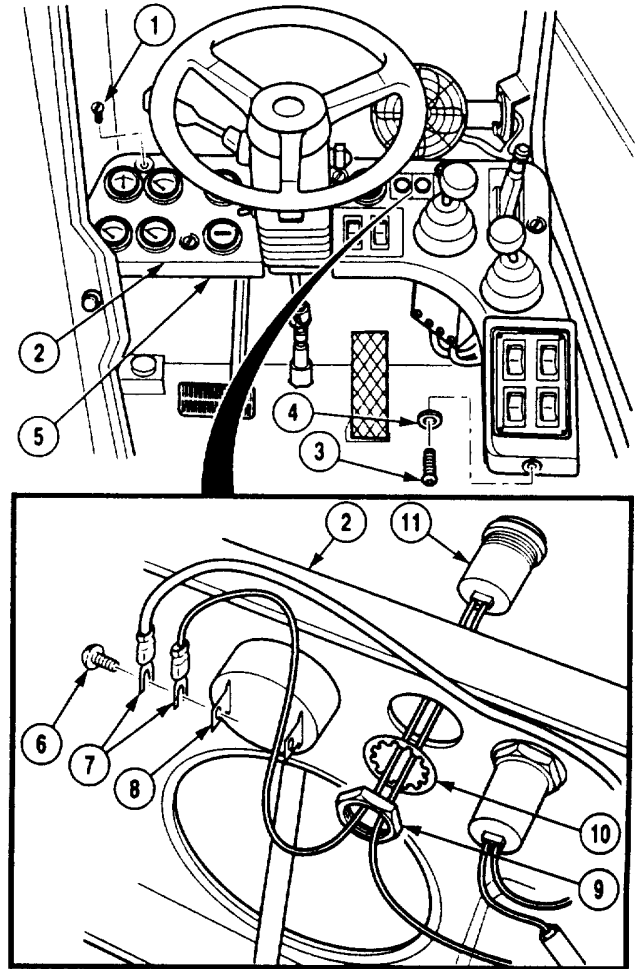
Install cable ties as required.

- (4) Install instrument panel (2) on dash frame (5) with washer (4) and screw (3).
- (5) Install four screws (1) on instrument panel (2).

NOTE

Follow-on Maintenance:

- Close cab door (TM 10-3930-669-10).
- Connect batteries (Para 7-48).
- Remove wheel chocks (TM 10-3930-669-10).



END OF TASK

7-40. BROKEN BELT SENSOR REPLACEMENT.

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP

Tools and Special Tools

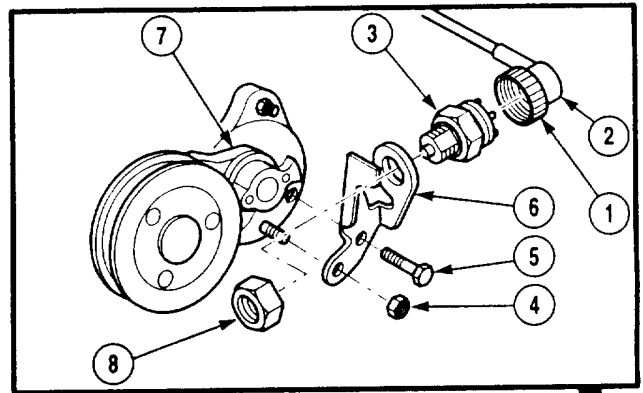
Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Wrench, Torque (0-60 N•m)
(Item 12, Appendix B)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Left-hand rear engine access cover opened
(TM 10-3930-669-10)
Blower belt removed (Para 6-5)

a. Removal

- (1) Loosen cap nut (1) and remove connector (2) from broken belt sensor (3).
- (2) Remove nut (4), screw (5), and bracket (6) from blower belt tensioner (7).
- (3) Remove nut (8) and broken belt sensor (3) from bracket (6).



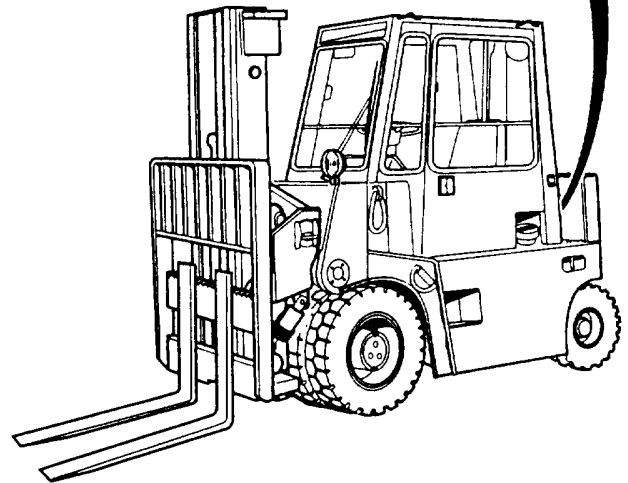
b. Installation.

- (1) Install broken belt sensor (3) on bracket (6) with nut (8).
- (2) Install bracket (6) on blower belt tensioner (7) with nut (4) and screw. Tighten screw to 18 lb-ft (24 N•m).
- (3) Install connector (2) on broken belt sensor (3) and tighten cap nut (1).

NOTE

Follow-on Maintenance:

- Install blower belt (Para 6-5).
- Close left-hand rear engine access cover (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).



END OF TASK

7-41. ENGINE OIL TEMPERATURE SENSOR REPLACEMENT.

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

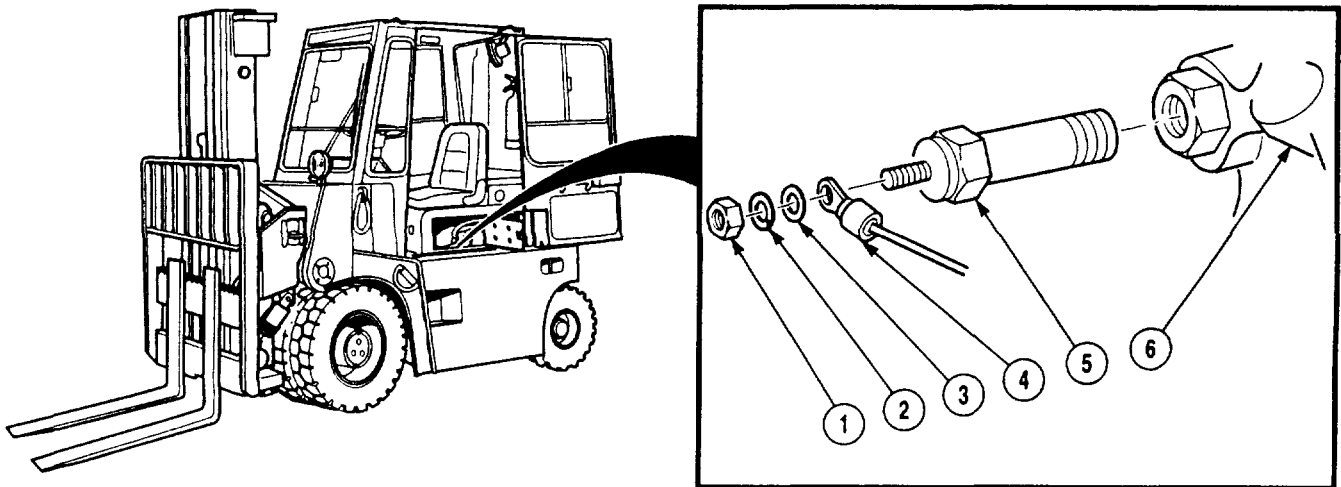
Materials / Parts

Cap and Plug Set (Item 5, Appendix B)
Rags, Wiping (Item 19, Appendix C)
Washer, Lock

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Cab door opened (TM 10-3930-669-10)
Engine access cover opened
(TM 10-3930-669-10)

a. Removal.



WARNING

BURN HAZARD

Allow engine to cool before performing maintenance on the muffler, exhaust pipe, exhaust manifold, or turbocharger. If necessary, use insulated pads and gloves.

- (1) Remove nut (1), lock washer (2), washer (3), and wire (4) from oil temperature sensor (5). Discard lock washer.
- (2) Using a wiping rag, clean area around engine oil temperature sensor (5) and heater valve (6).

NOTE

Cap and plug engine oil temperature sensor and heater valve when removed.

- (3) Remove engine oil temperature sensor (5) from heater valve (6).

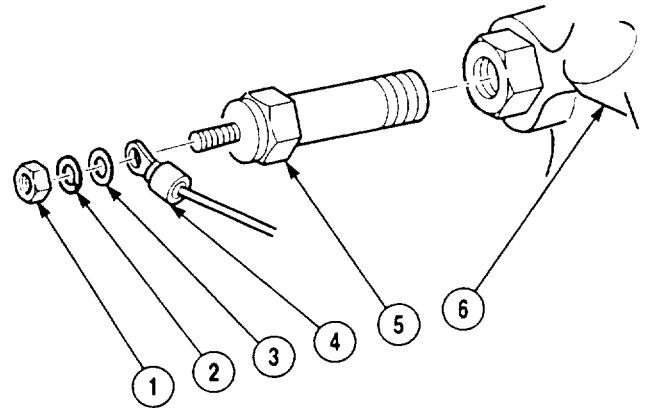
b. Installation.

- (1) Install engine oil temperature sensor (5) in heater valve (6).
- (2) Install wire (4) on oil temperature sensor (5) with washer (3), lock washer (2), and nut (1).

NOTE

Follow-on Maintenance:

- Close engine access cover (TM 10-3930-669-10).
- Close cab door (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).



END OF TASK

7-42. ENGINE OIL PRESSURE SENSOR REPLACEMENT.

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

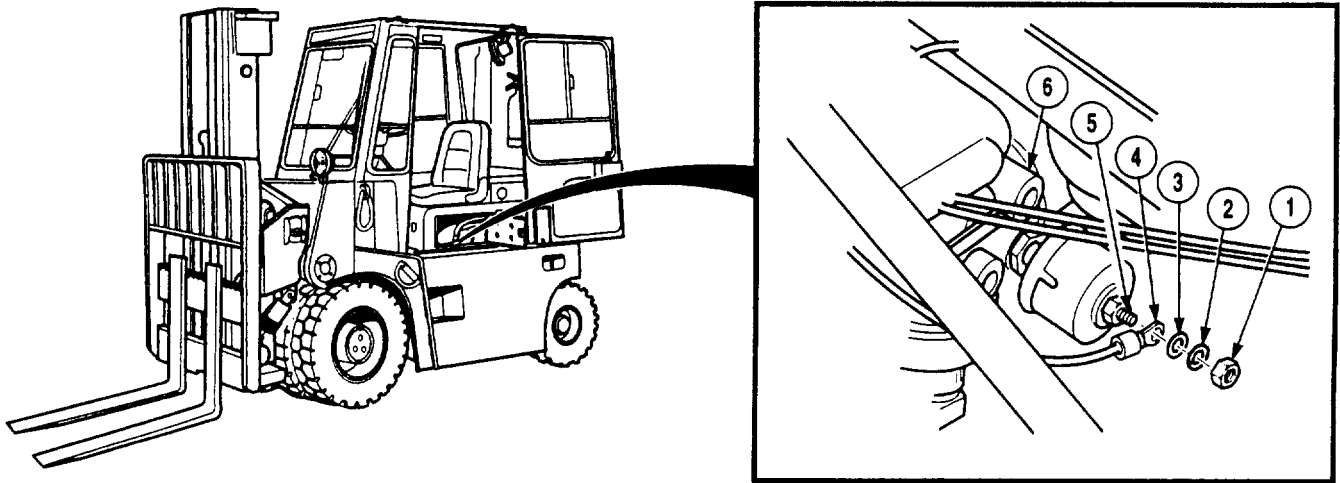
Materials/ Parts

Cap and Plug Set (Item 5, Appendix C)
Rags, Wiping (Item 19, Appendix C)
Washer, Lock

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Cab door opened (TM 10-3930-669-10)
Engine access cover opened
(TM 10-3930-669-10)
Batteries disconnected (Para 7-48)

a. Removal.



WARNING

BURN HAZARD

Allow engine to cool before performing maintenance on the muffler, exhaust pipe, exhaust manifold, or turbocharger. If necessary, use insulated pads and gloves.

- (1) Remove nut (1), lock washer (2), washer (3), and wire (4) from engine oil pressure sensor (5). Discard lock washer.
- (2) Using a wiping rag, clean area around engine oil pressure sensor (5) and heater valve (6).

NOTE

Cap and plug engine oil pressure sensor and heater valve when removed.

- (3) Remove engine oil pressure sensor (5) from heater valve (6).

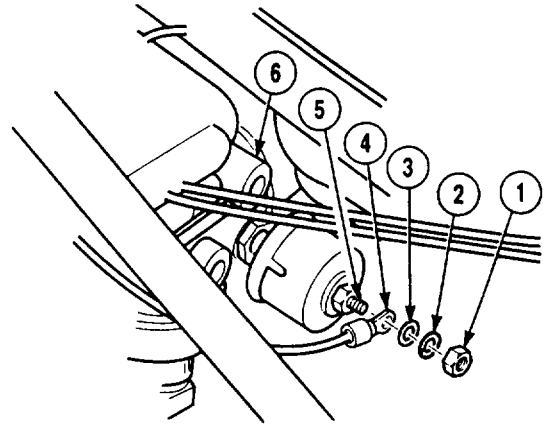
b. Installation.

- (1) Install engine oil pressure sensor (5) in heater valve (6).
- (2) Install wire (4) on engine oil pressure sensor (5) with washer (3), lock washer (2), and nut (1).

NOTE

Follow-on Maintenance:

- Connect batteries (Para 7-48).
- Close engine access cover (TM 10-3930-669-10).
- Close cab door (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).



END OF TASK

7-43. TRANSMISSION OIL TEMPERATURE SENSOR REPLACEMENT.

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

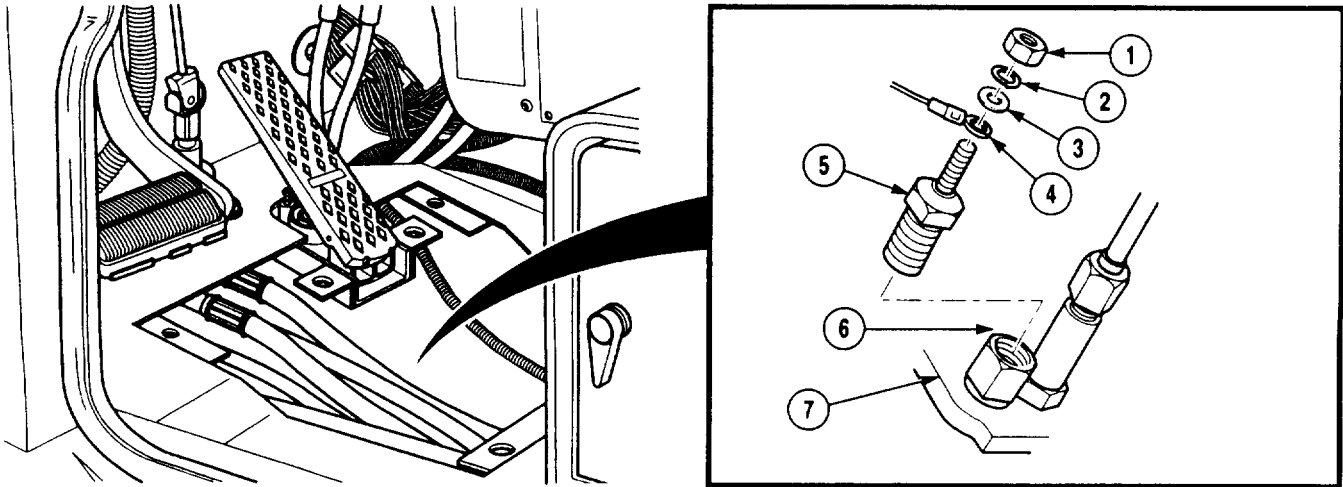
Materials /Parts

Cap and Plug Set (Item 5, Appendix C)
Rags, Wiping (Item 19, Appendix C)
Washer, Lock

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Cab door opened (TM 10-3930-669-10)
Batteries disconnected (Para 7-48)
Cab floor plate removed (Para 15-12)

a. Removal.



WARNING

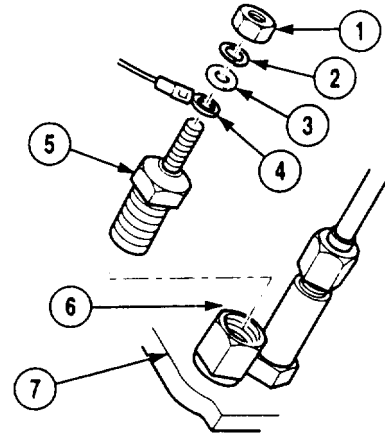
BURN HAZARD

Allow engine to cool before performing maintenance on the muffler, exhaust pipe, exhaust manifold, or turbocharger. If necessary, use insulated pads and gloves.

- (1) Remove nut (1), lock washer (2), washer (3), and wire (4) from oil temperature sensor (5). Discard lock washer.
- (2) Use wiping rag to clean surface dirt away from oil temperature sensor (5) and fitting (6).
- (3) Remove oil temperature sensor (5) from fitting (6) on top of transmission (7).

b. Installation.

- (1) Install oil temperature sensor (5) in fitting (6) on top of transmission (7).
- (2) Install wire (4) on oil temperature sensor (5) with washer (3), lock washer (2), and nut (1).



NOTE

Follow-on Maintenance:

- Connect batteries (Para 7-48).
- Install cab floor plate (Para 15-12).
- Close cab door (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

7-44. GLOW PLUG INDICATOR REPLACEMENT.

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

Materials/Parts

Cable Ties (Item 4, Appendix C)
Tags, Identification (Item 21, Appendix C)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Cab door opened (TM 10-3930-669-10)
Batteries disconnected (Para 7-48)

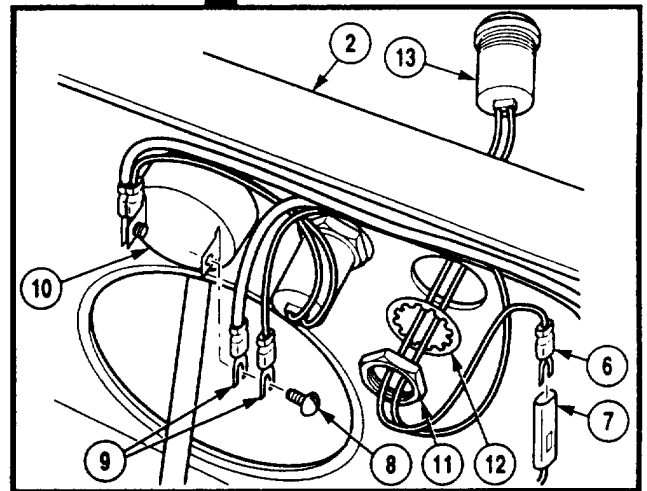
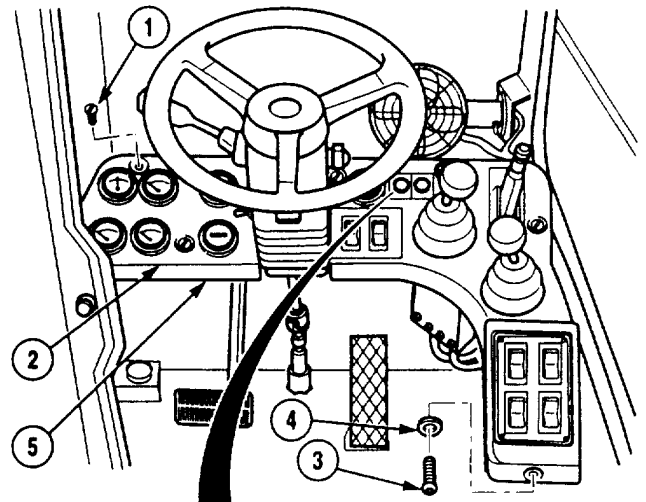
a. Removal.

NOTE
Cut cable ties as required.

- (1) Remove four screws (1) from instrument panel (2).
- (2) Remove screw (3) and washer (4), and raise instrument panel (2) from dash frame (5).

NOTE
Tag and mark all wires prior to removal.

- (3) Disconnect wire (6) from resistor (7).
- (4) Remove screw (8) and two wires (9) from broken belt warning buzzer (10).
- (5) Remove nut (11), washer (12), and indicator (13) from instrument panel (2).



b. Installation.

- (1) Install indicator (13) in instrument panel (2) with washer (12) and nut (11).
- (2) Install two wires (9) on broken belt warning buzzer (10) with screw (8).
- (3) Connect wire (6) on resistor (7).

NOTE

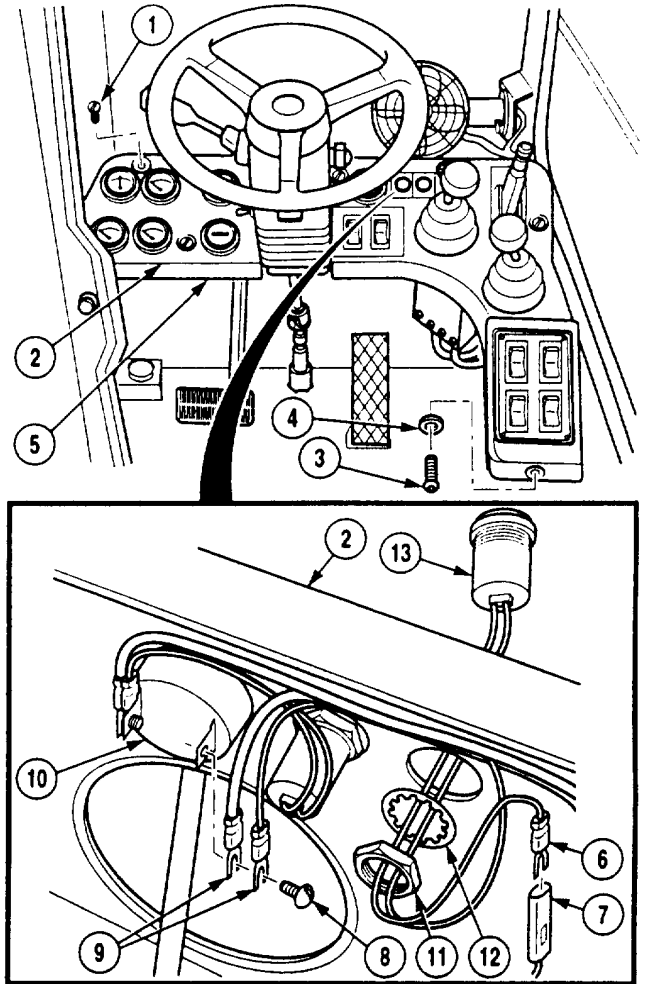
Install cable ties as required.

- (4) Install instrument panel (2) on dash frame (5) with washer (4) and screw (3).
- (5) Install four screws (1) on instrument panel (2).

NOTE

Follow-on Maintenance:

- Close cab door (TM 10-3930-669-10).
- Connect batteries (Para 7-48).
- Remove wheel chocks (TM 10-3930-669-10).



END OF TASK

7-45. HORN REPLACEMENT.

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

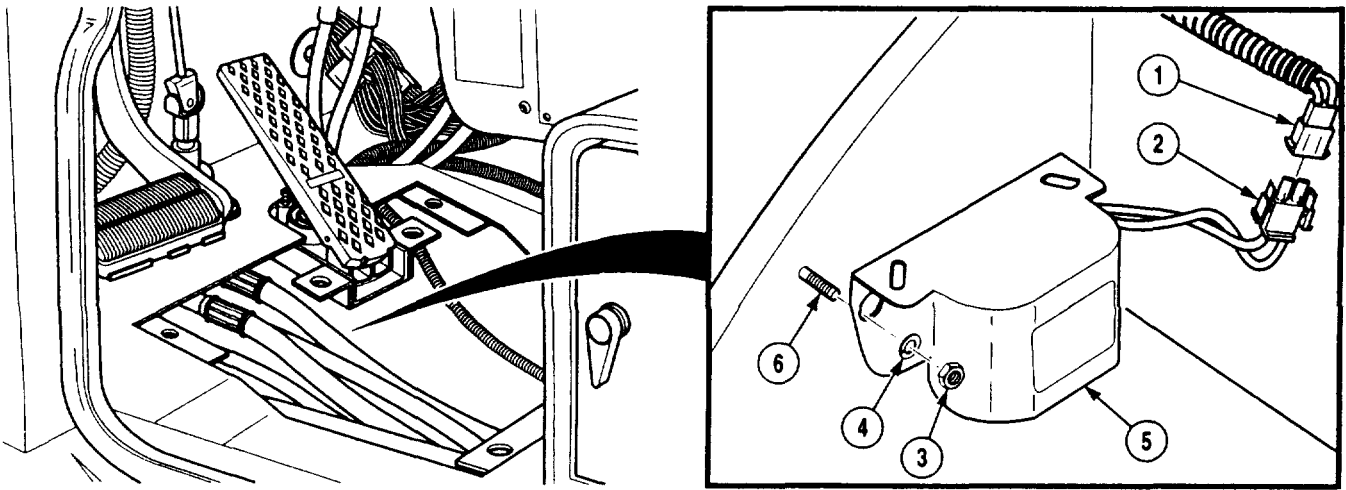
Materials/Parts

Tags, Identification (Item 21, Appendix C)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Cab floor plate removed (Para 15-12)
Batteries disconnected (Para 7-48)

a. Removal.



NOTE

Tag and mark all wires prior to removal.

- (1) Disconnect connector P16 (1) from horn connector (2).
- (2) Remove two nuts (3), washers (4), and horn (5) from engine hull (6).

b. Installation.

NOTE

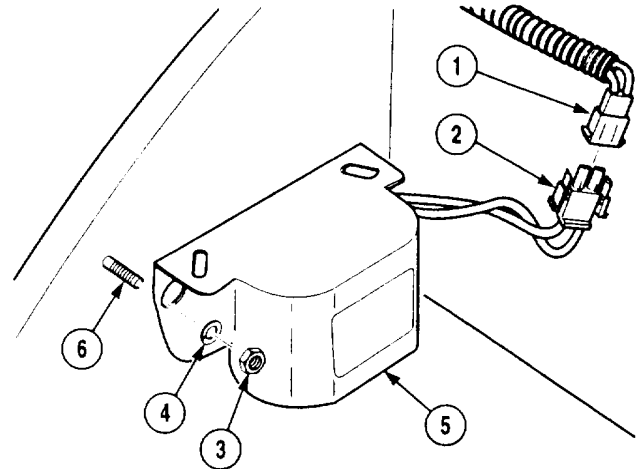
Install wires as marked during removal.

- (1) Install horn (5) on engine hull (6) with two washers (4) and screws (3).
- (2) Connect horn connector (2) on connector P16 (1).

NOTE

Follow-on Maintenance:

- Install cab floor plate (Para 15-12).
- Connect batteries (Para 7-48).
- Remove wheel chocks (TM 10-3930-669-10).



END OF TASK

7-46. HORN BUTTON REPLACEMENT.

This task covers:

- a. Removal b. Cleaning/Inspection c. Installation

INITIAL SETUP*Tools and Special Tools*

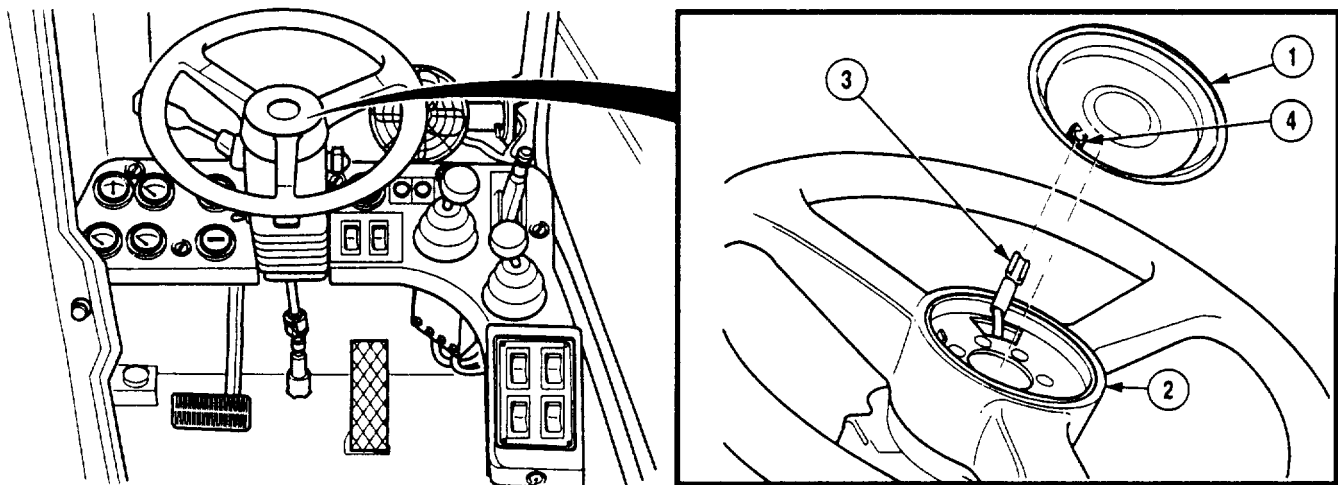
Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

Materials/Parts

Detergent (Item 10, Appendix C)
Rag, Wiping (Item 19, Appendix C)
Solvent, Drycleaning (Item 20, Appendix C)
Nut, Lock

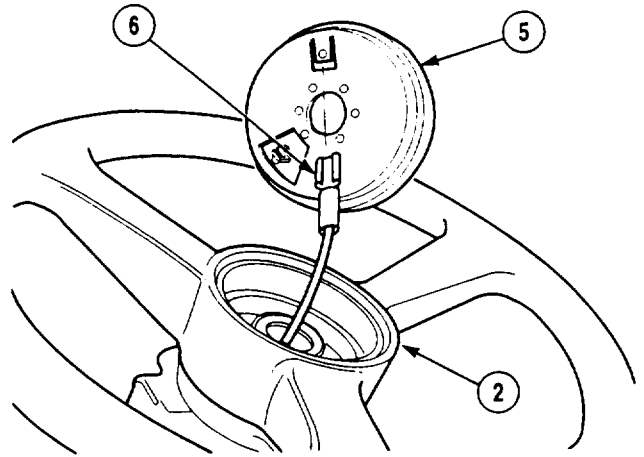
Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Cab door opened (TM 10-3930-669-10)
Batteries disconnected (Para 7-48)

a. Removal.

- (1) Remove horn button (1) from steering wheel hub (2) by gently prying horn button upward.
(2) Disconnect wire connector (3) from horn button terminal (4).

- (3) Remove contact plate (5) from steering wheel hub (2).
- (4) Disconnect wire connector (6) from contact plate (5).



b. Cleaning/Inspection.

WARNING

- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

- (1) Clean all metal parts with drycleaning solvent.
- (2) Clean horn button with wiping cloths and detergent.
- (3) Inspect horn button for cracks or damage.
- (4) Replace damaged parts or notify supervisor.

c. Installation.

- (1) Connect wire connector (6) to contact plate (5).
- (2) Install contact plate (5) in steering wheel hub (2).

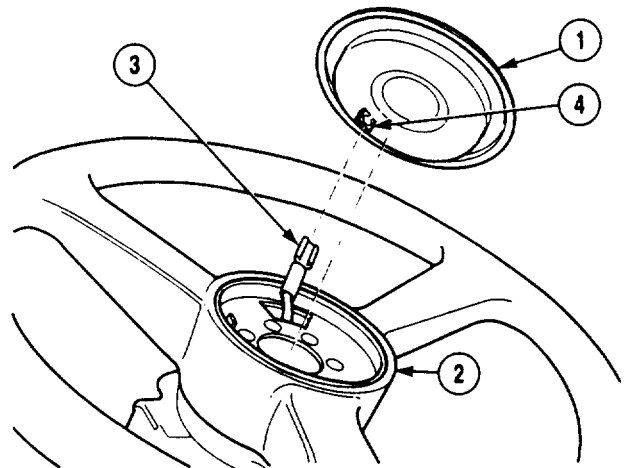
7-46. HORN BUTTON REPLACEMENT (CONT).

- (3) Connect wire connector (3) on horn button terminal (4).
- (4) Install horn button (1) in steering wheel hub (2).

NOTE

Follow-on Maintenance:

- Connect batteries (Para 7-48).
- Close cab door (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).



END OF TASK

7-47. BATTERY REPLACEMENT.

This task covers:

- | | | |
|------------|------------------------|-----------------|
| a. Removal | b. Cleaning/Inspection | c. Installation |
|------------|------------------------|-----------------|

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

References

Maintenance and Repair for Lead-Acid
Storage Batteries, (TM 9-6140-200-14)

Materials/Parts

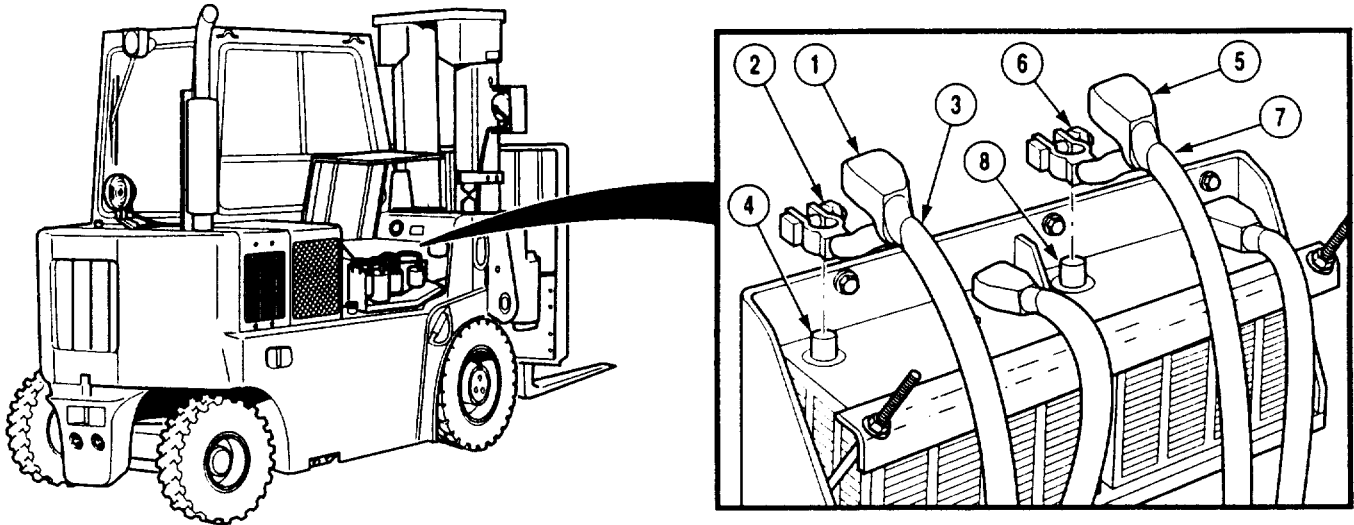
Baking Soda (Item 3, Appendix C)
Compound, Corrosion Preventive
(Item 7, Appendix C)
Detergent (Item 10, Appendix C)
Rags, Wiping (Item 19, Appendix C)
Solvent, Drycleaning (Item 20, Appendix C)
Tags, Identification (Item 21, Appendix C)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Right-hand engine panel removed (Para 15-9)
Right-hand engine access cover open
(TM 10-3930-669-10)

7-47. BATTERY REPLACEMENT (CONT).

a. Removal.



WARNING

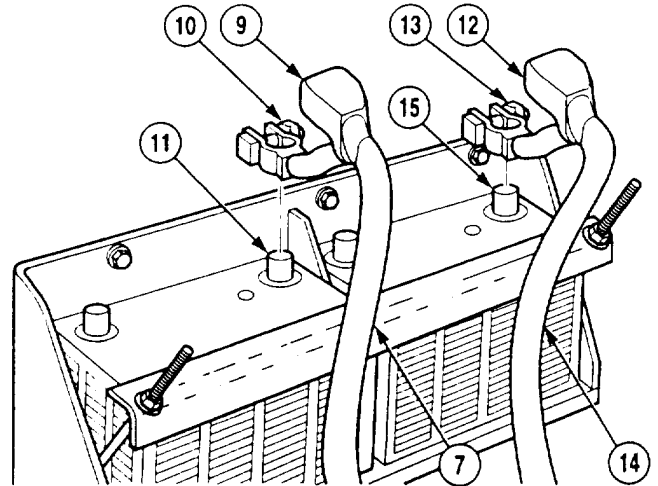
- Battery acid (electrolyte) is extremely harmful. Always wear safety goggles and rubber gloves, and do not smoke when performing maintenance on batteries. Injury will result if acid contacts skin or eyes. Wear rubber apron to prevent clothing being damaged.
- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry contacts battery terminal, a direct short may result in instant heating of tools, damage to equipment, and injury or death to personnel.

NOTE

Tag and mark all wires prior to removal.

- (1) Lift black rubber terminal cover (1) and loosen nut (2) until negative cable (3) can be removed from negative battery terminal (4).
- (2) Lift black rubber terminal cover (5) and loosen nut (6) until negative side of cable (7) can be removed from negative battery terminal (8).

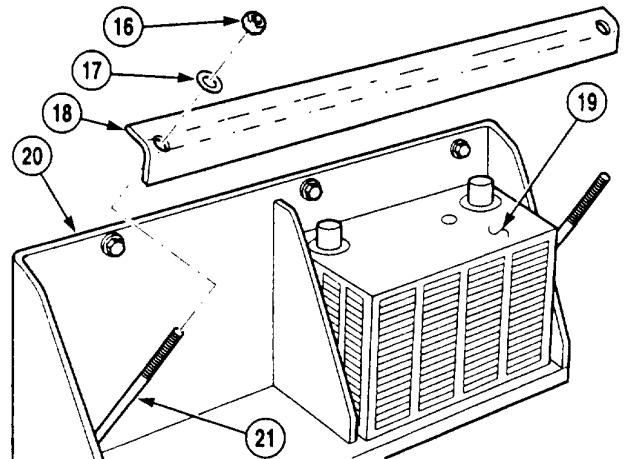
- (3) Lift red rubber terminal cover (9) and loosen nut (10) until positive side of cable (7) can be removed from positive battery terminal (11).
- (4) Lift red rubber terminal cover (12) and loosen nut (13) until positive cable (14) can be removed from positive battery terminal (15).



WARNING

- Battery acid (electrolyte) is extremely harmful. Always wear safety goggles and rubber gloves, and do not smoke when performing maintenance on batteries. Injury will result if acid contacts skin or eyes. Wear rubber apron to prevent clothing being damaged.
- Remove all jewelry such as rings, dogs tags, bracelets, etc. If jewelry contacts battery terminal, a direct short may result in instant heating of tools, damage to equipment, and injury or death to

- (5) Remove two nuts (16), washers (17), and battery hold down clamp (18).
- (6) Remove two batteries (19) from battery box (20).
- (7) Remove two studs (21) from battery box (20).



7-47. BATTERY REPLACEMENT (CONT).

b. *Cleaning/Inspection.*

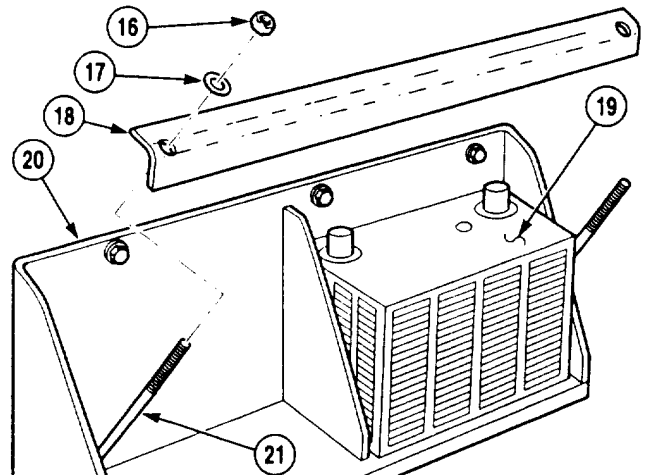
WARNING

- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

- (1) Clean all metal parts with drycleaning solvent.
- (2) Inspect battery hold down clamp for cracks or damage.
- (3) Clean battery box with wiping cloths and detergent.
- (4) Neutralize battery acid on battery box with baking soda.
- (5) Inspect battery box for cracks or breaks.
- (6) Replace damaged parts or notify supervisor.

c. *Installation.*

- (1) Install two studs (21) on battery box (20).
- (2) Install two batteries (19) in battery box (20).
- (3) Install battery hold down clamp (18) and secure with two washers (17) and nuts (16).

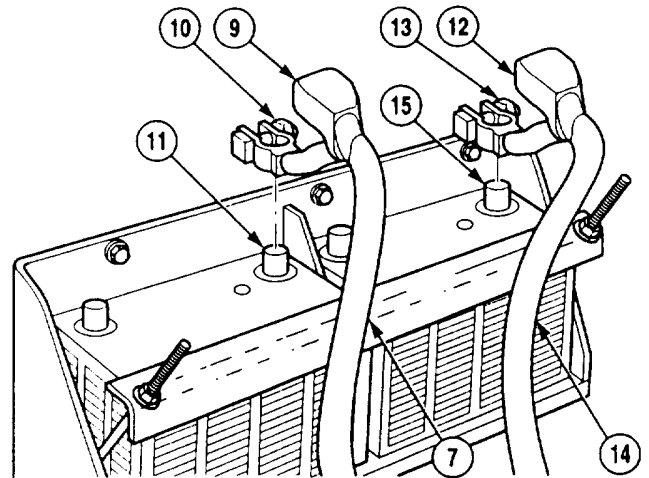


WARNING

- When connecting battery cables to battery, always connect positive terminal before connecting negative terminal. Failure to do so could cause an electrical arc and serious injury to personnel or damage to equipment.
- Battery acid (electrolyte) is extremely harmful. Always wear safety goggles and rubber gloves, and do not smoke when performing maintenance on batteries. Injury will result if acid contacts skin or eyes. Wear rubber apron to prevent clothing being damaged.
- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry contacts battery terminal, a direct short may result in instant heating of tools, damage to equipment, and injury or death to personnel.

WARNING

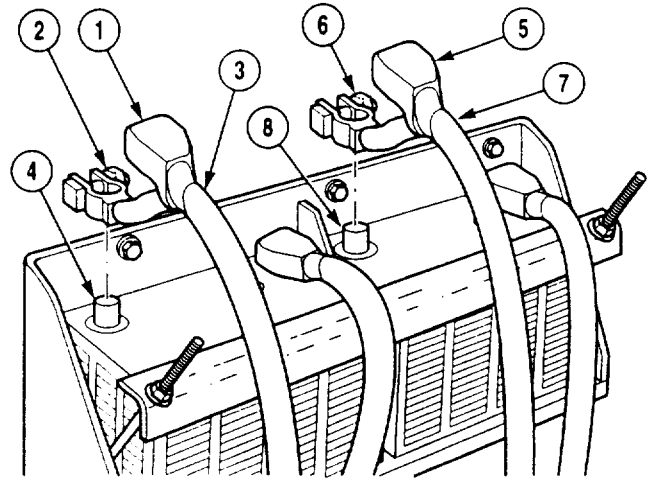
Corrosion inhibitor contains alkali. Do not get in eyes; wear goggles/safety glasses when using. Avoid contact with skin. In case of contact, immediately wash area with soap and water. If eyes are contacted, flush eyes with large amounts of water for at least 15 minutes and get immediate medical attention.



- (4) Coat positive battery terminal (15) with corrosion preventive compound.
- (5) Install positive cable (14) on positive battery terminal (15) and tighten nut (13). Cover positive battery terminal (15) with red rubber terminal cover (12).
- (6) Coat positive battery terminal (11) with corrosion preventive compound.
- (7) Install positive side of cable (7) on positive battery terminal (11) and tighten nut (10). Cover positive battery terminal (11) with red rubber terminal cover (9).

7-47. BATTERY REPLACEMENT (CONT).**WARNING**

Corrosion inhibitor contains alkali. Do not get in eyes; wear goggles/safety glasses when using. Avoid contact with skin. In case of contact, immediately wash area with soap and water. If eyes are contacted, flush eyes with large amounts of water for at least 15 minutes and get immediate medical attention.



- (8) Coat negative battery terminal (8) with corrosion preventive compound.
- (9) Install negative side of cable (7) on negative battery terminal (8) and tighten nut (6). Cover negative battery terminal (8) with black rubber terminal cover (5).

WARNING

- Battery acid (electrolyte) is extremely harmful. Always wear safety goggles and rubber gloves, and do not smoke when performing maintenance on batteries. Injury will result if acid contacts skin or eyes. Wear rubber apron to prevent clothing being damaged.
- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry contacts battery terminal, a direct short may result in instant heating of tools, damage to equipment, and injury or death to personnel.

- (10) Coat negative battery terminal (4) with corrosion preventive compound.
- (11) Install negative cable (3) on negative battery terminal (4) and tighten nut (2). Cover negative battery terminal (4) with black rubber terminal cover (1).

NOTE**Follow-on Maintenance:**

- Install right-hand engine panel (Para 15-9).
- Close right-hand engine access cover (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

7-48. BATTERY CABLE SERVICE.

This task covers:

- | | | |
|------------|------------------------|-----------------|
| a. Removal | b. Cleaning/Inspection | c. Installation |
|------------|------------------------|-----------------|

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Brush, Wire (Item 2, Appendix B)

Materials/ Parts

Baking Soda (Item 3, Appendix C)
Compound, Corrosion Preventive
(Item 7, Appendix C)
Detergent (Item 10, Appendix C)
Rags, Wiping (Item 19, Appendix C)
Solvent, Drycleaning (Item 20, Appendix C)
Tags, Identification (Item 21, Appendix C)

References

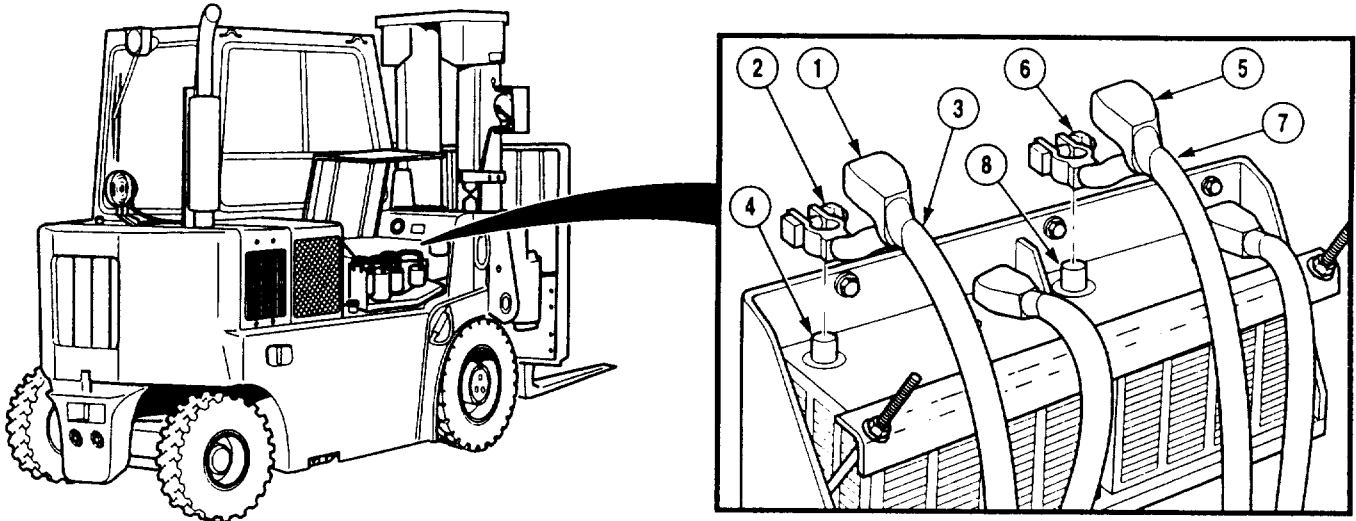
Battery Care and Maintenance

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Right-hand engine access cover opened
(TM 10-3930-669-10)

7-48. BATTERY CABLE SERVICE (CONT).

a. Removal



WARNING

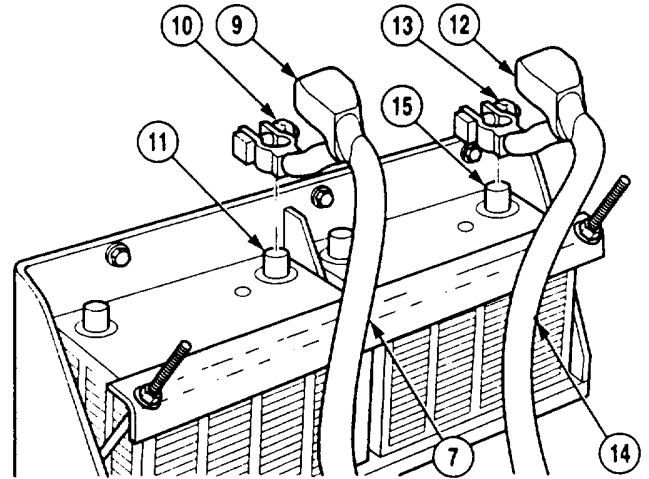
- Battery acid (electrolyte) is extremely harmful. Always wear safety goggles and rubber gloves, and do not smoke when performing maintenance on batteries. Injury will result if acid contacts skin or eyes. Wear rubber apron to prevent clothing being damaged.
- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry contacts battery terminal, a direct short may result in instant heating of tools, damage to equipment, and injury or death to personnel.

NOTE

Tag and mark all wires prior to removal.

- (1) Lift black rubber terminal cover (1) and remove nut (2) until negative cable (3) can be removed from negative battery terminal (4).
- (2) Lift black rubber terminal cover (5) and loosen nut (6), until negative side of cable (7) can be removed negative battery terminal (8).

- (3) Lift red rubber terminal cover (9) and loosen nut (10), until positive side of cable (7) can be removed from positive battery terminal (11).
- (4) Lift red rubber terminal cover (12) and loosen nut (13) until positive cable (14) can be removed from positive battery terminal (15).



b. Cleaning/Inspection.

WARNING

- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.
- Battery acid (electrolyte) is extremely harmful. Always wear safety goggles and rubber gloves, and do not smoke when performing maintenance on batteries. Injury will result if acid contacts skin or eyes. Wear rubber apron to prevent clothing being damaged.
- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry contacts battery terminal, a direct short may result in instant heating of tools, damage to equipment, and injury or death to personnel.

- (1) Neutralize battery acid on cables and battery with baking soda or household ammonia solution.
- (2) Clean all metal parts with drycleaning solvent.
- (3) Clean battery surface with wiping cloths and detergent.
- (4) Clean wire and cable metal ends and battery terminals with a wire brush.
- (5) Inspect cables for cracks or damage.
- (6) Replace damaged parts or notify supervisor.

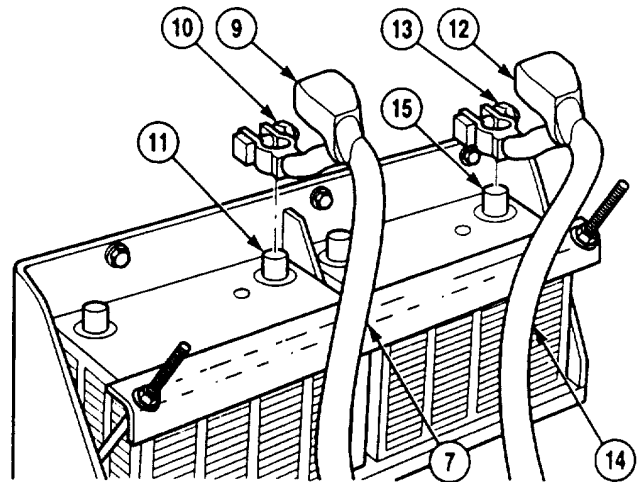
7-48. BATTERY CABLE SERVICE (CONT).

c. Installation.

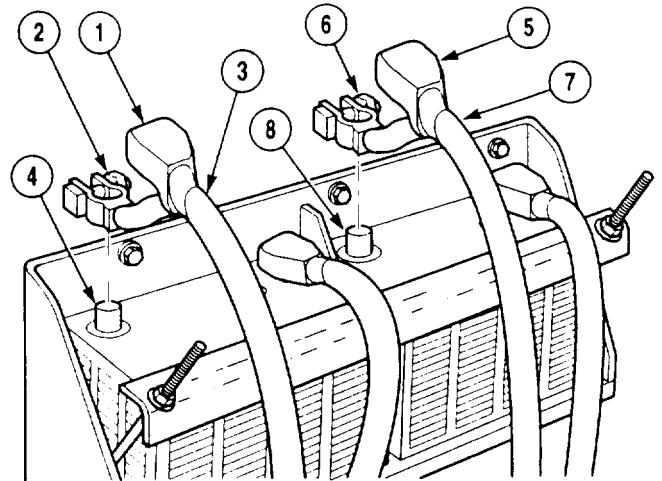
WARNING

- When connecting battery cables to battery, always connect positive terminal before connecting negative terminal. Failure to do so could cause an electrical arc and serious injury to personnel or damage to equipment.
- Battery acid (electrolyte) is extremely harmful. Always wear safety goggles and rubber gloves, and do not smoke when performing maintenance on batteries. Injury will result if acid contacts skin or eyes. Wear rubber apron to prevent clothing being damaged.
- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry contacts battery terminal, a direct short may result in instant heating of tools, damage to equipment, and injury or death to personnel.
- Corrosion inhibitor contains alkali. Do not get in eyes; wear goggles/safety glasses when using. Avoid contact with skin. In case of contact, immediately wash area with soap and water. If eyes are contacted, flush eyes with large amounts of water for at least 15 minutes and get immediate medical attention.

- (1) Coat positive battery terminal (15) with corrosion preventive compound.
- (2) Install positive cable (14) on positive battery terminal (15) and tighten nut (13). Cover positive battery terminal (15) with red rubber terminal cover (12).
- (3) Coat positive battery terminal (11) with corrosion preventive compound.
- (4) Install positive side of cable (7) on positive battery terminal (11) and tighten nut (10). Cover positive battery terminal (11) with red rubber terminal cover (9).



- (5) Coat negative battery terminal (8) with corrosion preventive compound.
- (6) Install negative side of cable (7) on negative battery terminal (8) and tighten nut (6). Cover negative battery terminal (8) with black rubber terminal cover (5).
- (7) Coat negative battery terminal (4) with corrosion preventive compound.
- (8) Install negative cable (3) on negative battery terminal (4) and tighten nut (2). Cover negative battery terminal (4) with black rubber terminal cover (1).



NOTE

Follow-on Maintenance:

- **Close right-hand engine access cover**
(TM 10-3930-669-10).
- **Remove wheel chocks**
(TM 10-3930-669-10).

END OF TASK

7-49. ENGINE GROUND STRAP REPLACEMENT.

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Wrench, Torque (0 to 175 lb-ft [0-237 N•m])
(Item 2, Appendix B)

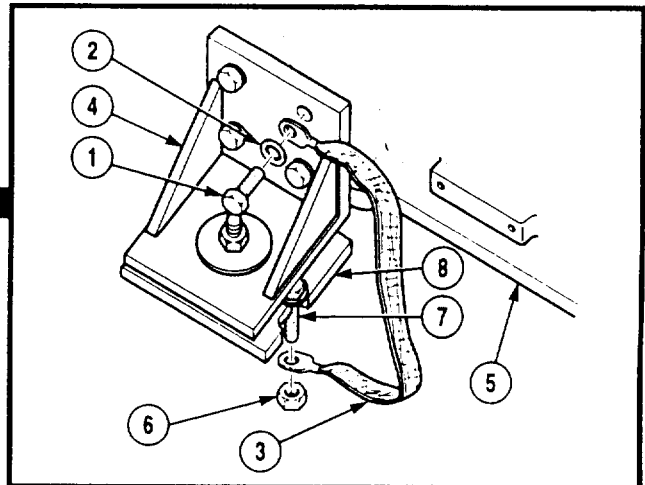
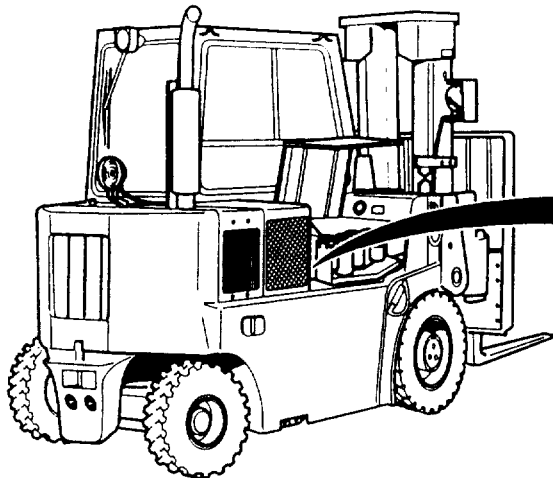
Materials/ Parts

Nut, Lock

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Engine ventilation panel removed (Para 6-2)
Batteries disconnected (Para 7-48)

a. Removal



WARNING

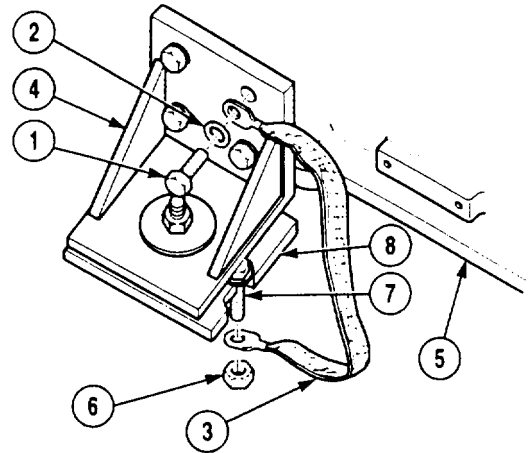
BURN HAZARD

Allow engine to cool before performing maintenance on the muffler, exhaust pipe, exhaust manifold, or turbocharger. If necessary, use insulated pads and gloves.

- (1) Remove screw (1), washer (2), and engine ground strap (3) from engine mount (4) and engine (5).
- (2) Remove lock nut (6) and engine ground strap (3) from screw (7) and forklift (8). Discard lock nut.

b. Installation.

- (1) Install engine ground strap (3) on forklift (8) with screw (7) and lock nut (6). Tighten lock nut to 36 lb-ft (49 N•m).
- (2) Install engine ground strap (3) on engine mount (4) and engine (5) with washer (2) and screw (1). Tighten screw to 63 lb-ft (86 N•m).



NOTE

Follow-on Maintenance:

- Connect batteries (Para 7-48).
- Install engine ventilation panel (Para 6-2).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

7-50. BROKEN BELT WARNING BUZZER REPLACEMENT.

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

Materials / Parts

Tags, Identification (Item 21, Appendix C)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Cab door opened (TM 10-3930-669-10)
Batteries disconnected (Para 7-48)

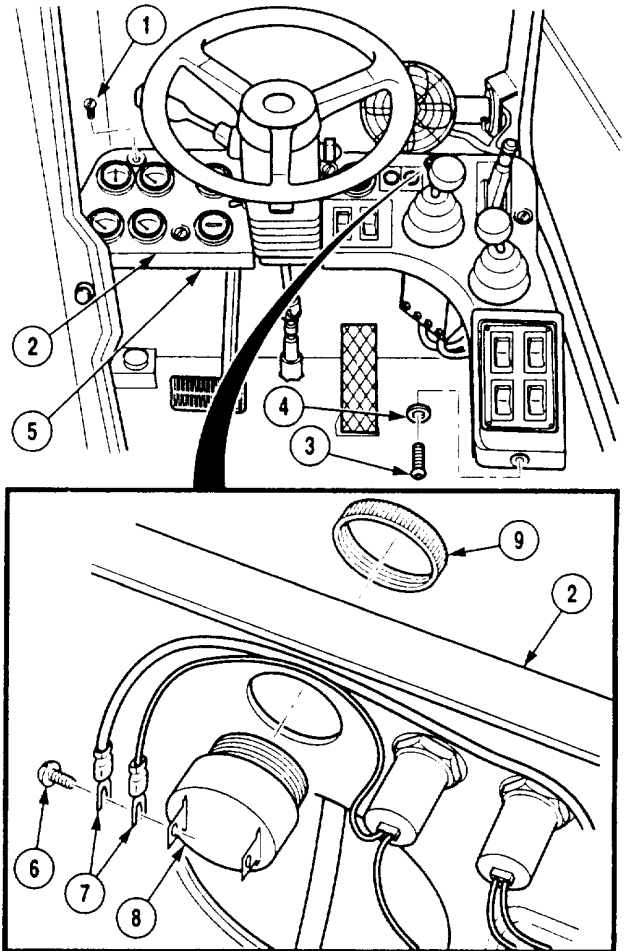
a. Removal

- (1) Remove four screws (1) from instrument panel (2).
- (2) Remove screw (3) and washer (4), and raise instrument panel (2) from dash frame (5).

NOTE

Tag and mark all wires prior to removal.

- (3) Remove two screws (6) and four wires (7) from buzzer (8).
- (4) Remove retaining ring (9) and buzzer (8) from instrument panel (2).



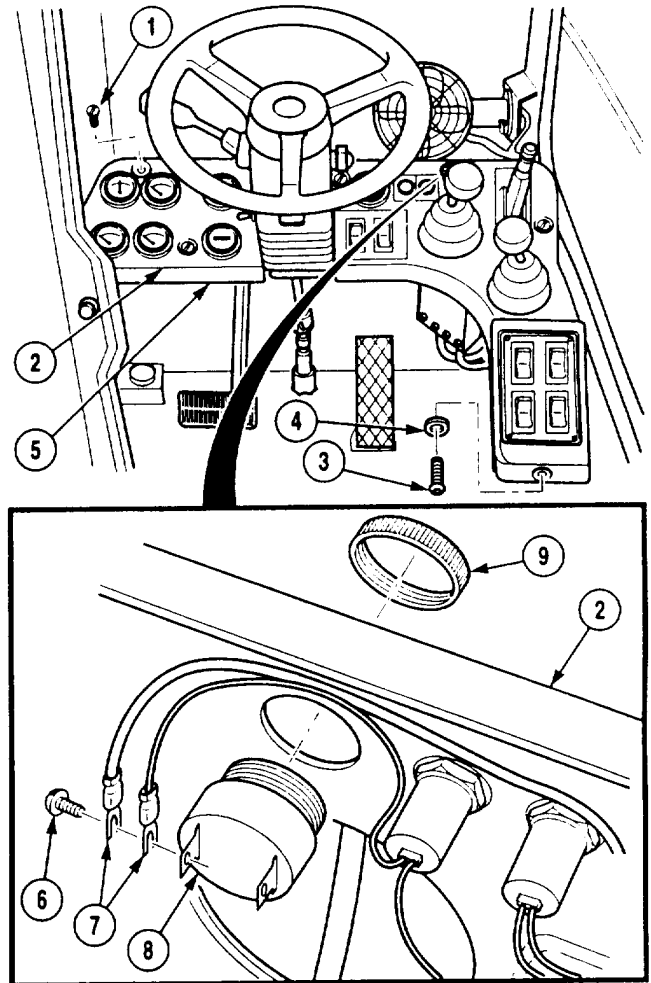
b. Installation.

- (1) Install buzzer (8) in instrument panel (2) with retaining ring (9).
- (2) Install four wires (7) on buzzer (8) with two screws (6).
- (3) Install instrument panel (2) on dash frame (5) with washer (4) and screw (3).
- (4) Install four screws (1) on instrument panel (2).

NOTE

Follow-on Maintenance:

- Close cab door (TM 10-3930-669-10).
- Connect batteries (Para 7-48).
- Remove wheel chocks (TM 10-3930-669-10).



END OF TASK

7-51. RELAY PANEL REPLACEMENT.

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Tool Kit, Electrical (Item 2, Appendix B)

Materials /Parts

Tags, Identification (Item 21, Appendix C)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Engine ventilation panel removed (Para 6-2)
Batteries disconnected (Para 7-48)

a. Removal

WARNING

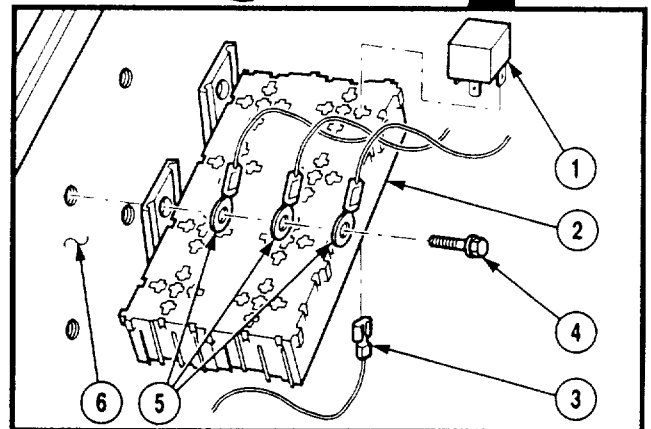
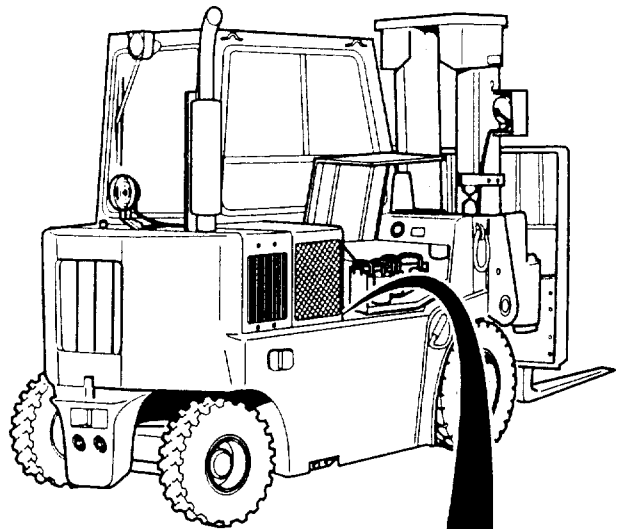
Remove or disconnect batteries and turn master battery disconnect switch off prior to performing maintenance in immediate battery area or working on electrical system. Such disconnections prevent electrical shock to personnel or equipment.

- (1) Remove seven relays (1) from relay panel (2).

NOTE

Tag and mark all wires before removal.

- (2) Remove 28 wires (3) from relay panel (2).
- (3) Remove four screws (4), six wires (5), and relay panel (2) from engine compartment (6).



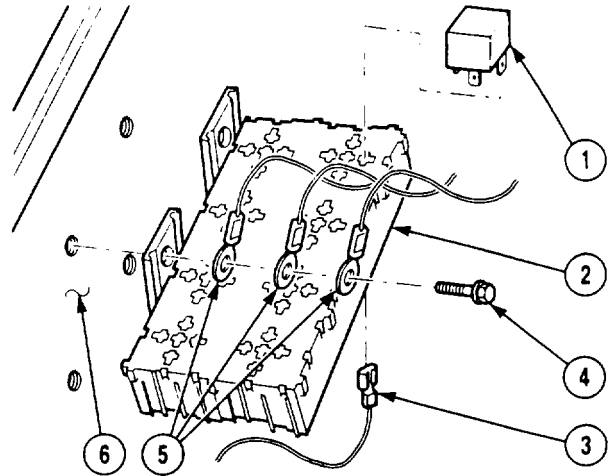
b. Installation.

- (1) Install relay panel (2) and six wires (5) on engine compartment (6) with four screws (4).
- (2) Install 28 wires (3) on relay panel (2).
- (3) Install seven relays (1) on relay panel (2).

NOTE

Follow-on Maintenance:

- Install engine ventilation panel (Para 6-2).
- Connect batteries (Para 7-48).
- Remove wheel chocks (TM 10-3930-669-10).



END OF TASK

7-52. NATO PLUG REPLACEMENT.

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP*Tools and Special Tools*

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

Materials/Parts

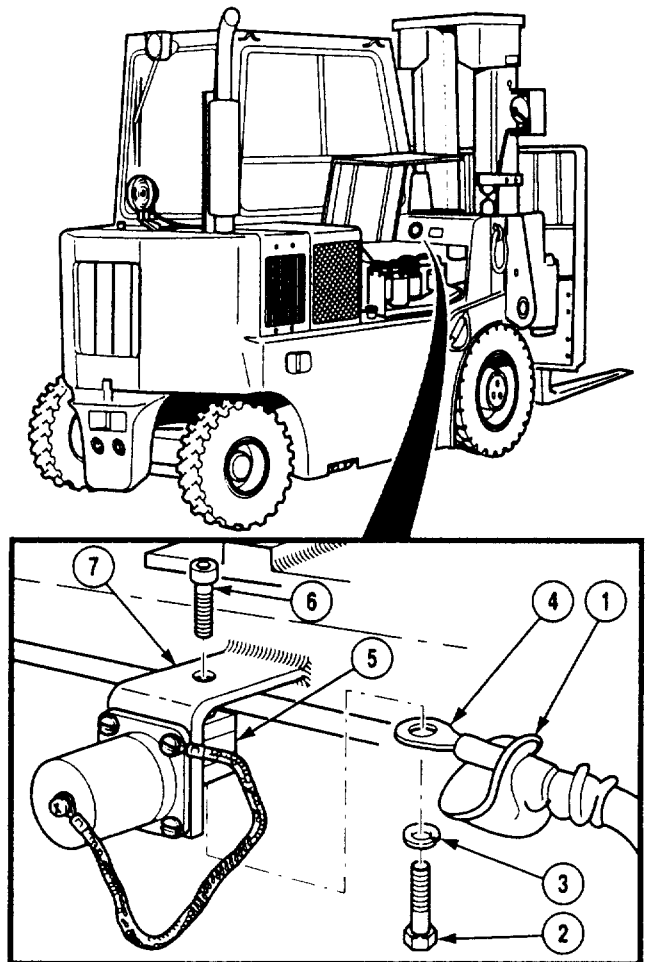
Washer, Lock (4)
Washer, Lock
Washer, Lock

Equipment Condition

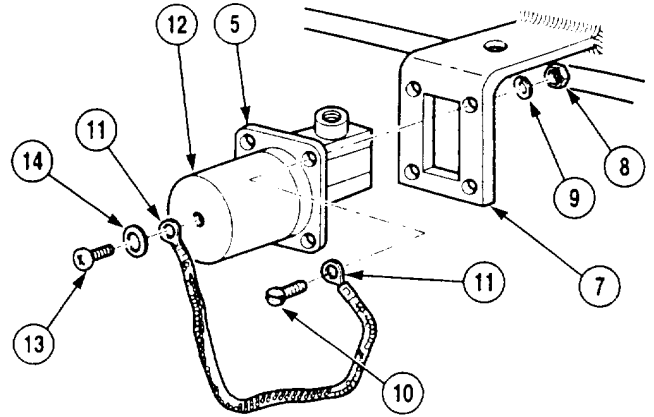
Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Batteries disconnected (Para 7-48)
Right-hand engine panel removed
(Para 15-9)

a. Removal

- (1) Lift back terminal cover (1) and remove screw (2), lock washer (3), and cable (4) from NATO plug (5). Discard lock washer.
- (2) Remove screw (6) from forklift (7) and NATO plug (5).

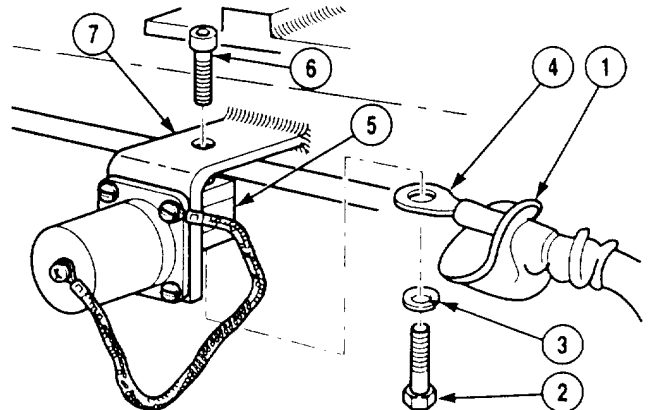


- (3) Remove four nuts (18), lock washers (9), screws (10), lanyard (11), and NATO plug (5) from forklift (7). Discard lock washers.
- (4) Remove cap (12) from NATO plug (5).
- (5) If damaged, remove screw (13), lock washer (14), and lanyard (11) from cap (12). Discard lock washer.



b. Installation.

- (1) If removed, install lanyard (11) on cap (12) with lock washer (14) and screw (13).
- (2) Install cap (12) on NATO plug (5).
- (3) Install NATO plug (5) on forklift (7) with lanyard (11), four screws (10), lock washers (9), and nuts (8).
- (4) Install screw (6) on forklift (7) and NATO plug (5).
- (5) Install cable (4) on NATO plug (5) with lock washer (3) and screw (2). Lift terminal cover (1).



NOTE

Follow-on Maintenance:

- Connect batteries (Para 7-48).
- Install right-hand engine panel (Para 15-9).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

7-53. GENERAL CABLE REPLACEMENT.

This task covers:

- | | | |
|-------------------------------|---------------------------------|-------------------------------|
| a. NATO Cable Removal | d. Battery Cable Removal | g. Starter Cable Installation |
| b. Starter Cable Removal | e. Battery Cable Installation | h. NATO Cable Installation |
| c. Cab Buss Bar Cable Removal | f. Cab Shunt Cable Installation | |

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

Materials /Parts

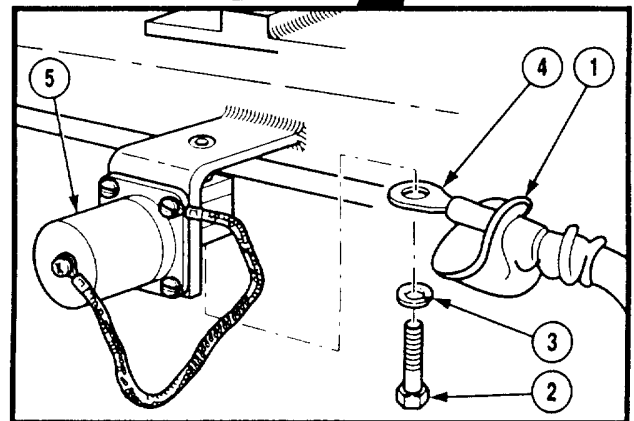
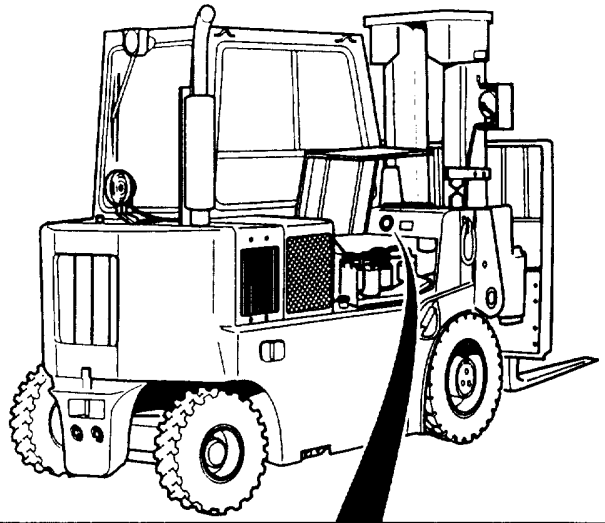
Washer, Lock (2)
Washer, Lock
Washer, Lock

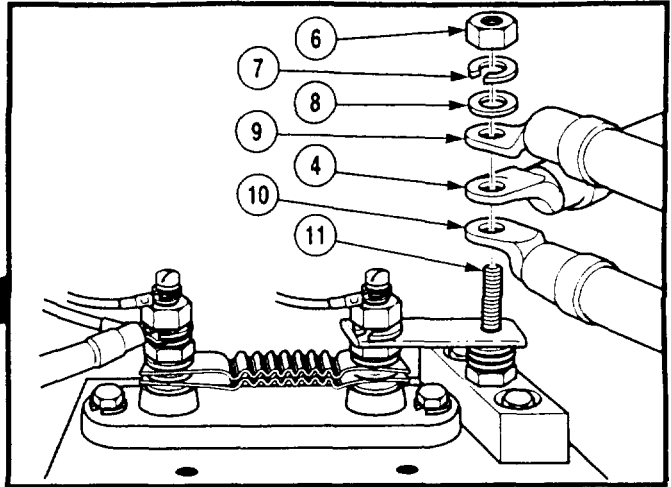
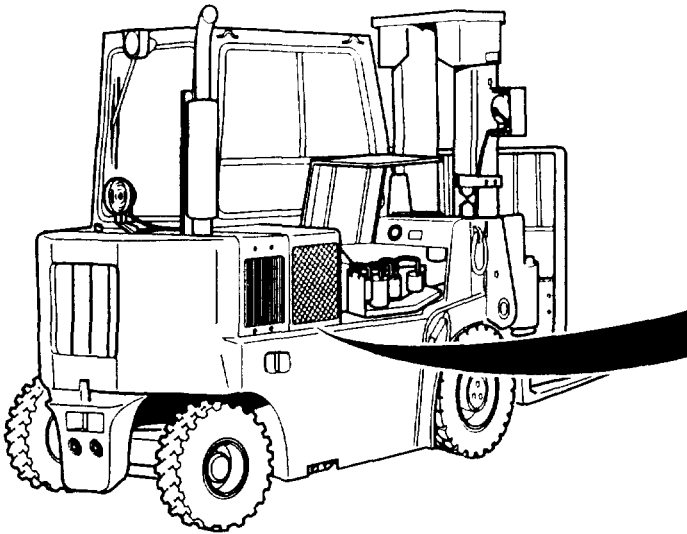
Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Batteries disconnected (Para 7-48)
Engine ventilation panel removed
(Para 6-2)

a. NATO Plug Cable Removal.

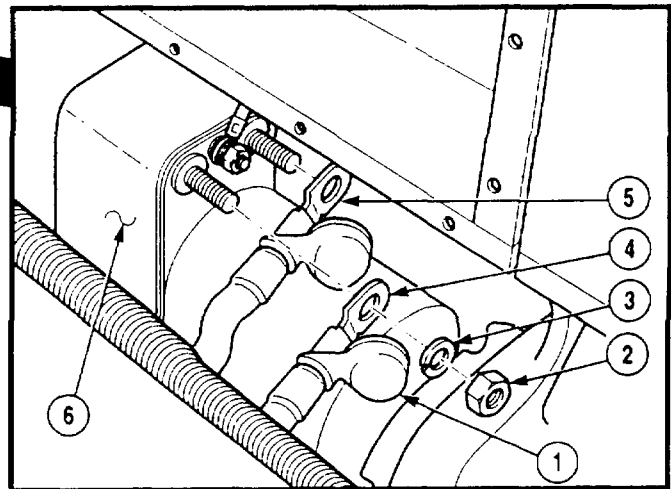
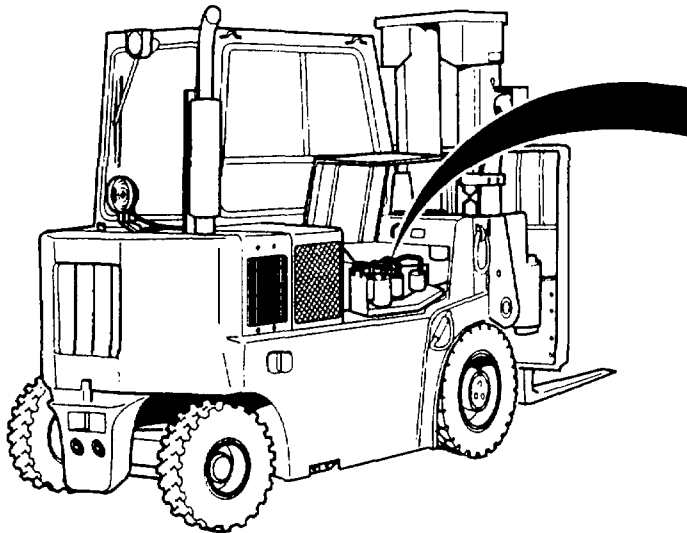
- (1) Remove right-hand engine panel (Para 15-9).
- (2) Lift back terminal cover (1) and remove screw (2), lock washer (3), and cable (4) from NATO plug (5). Discard lock washer.





- (3) Remove nut (6), lock washer (7), washer (8), and three cables (9, 4, and 10) from shunt terminal (11). Discard lock washer.

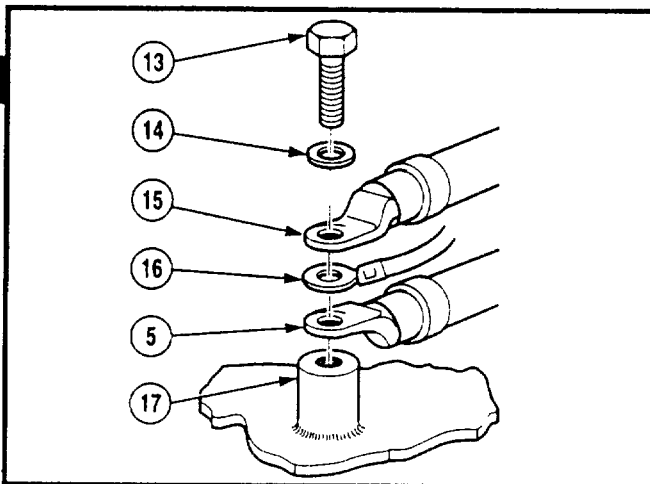
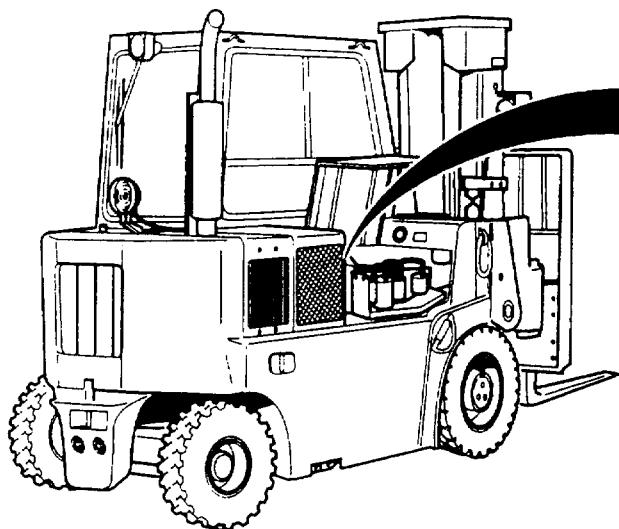
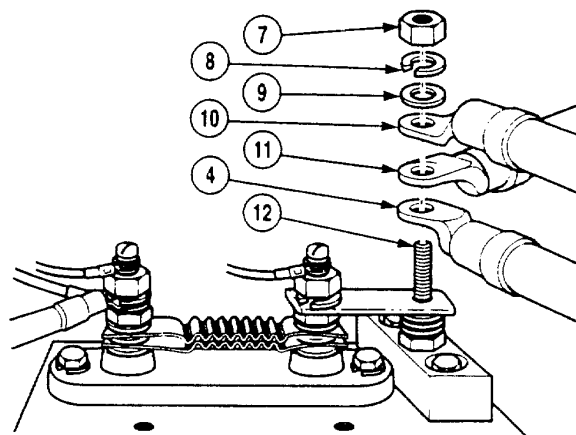
b. Starter Cable Removal.



- (1) Lift back two terminal covers (1) and remove two nuts (2), lock washers (3), and two cables (4 and 5) from starter solenoid (6). Discard lock washers.

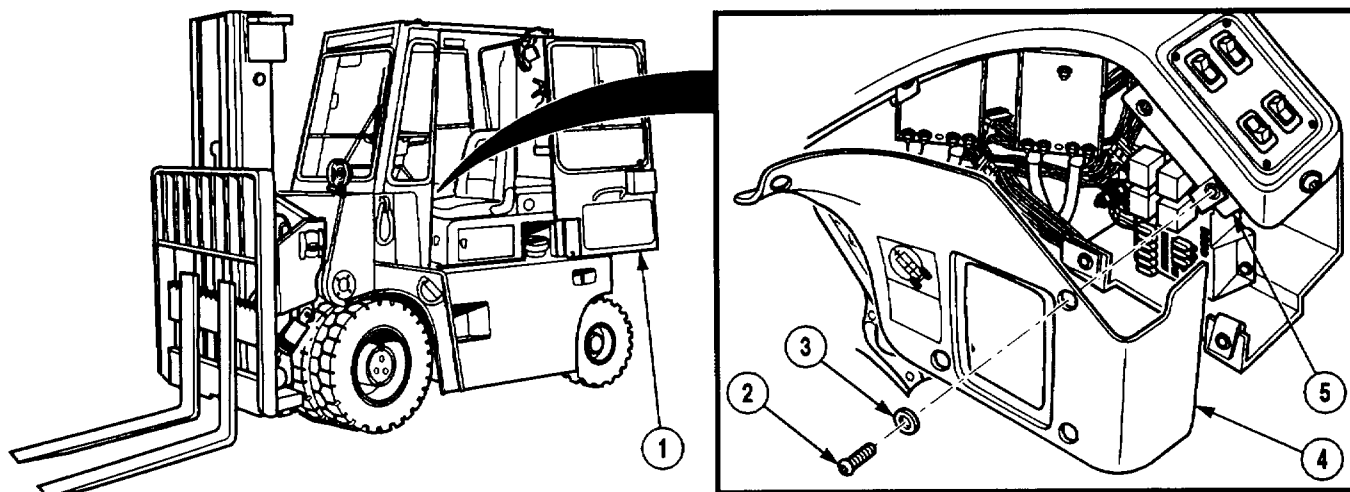
7-53. GENERAL CABLE REPLACEMENT (CONT)

- (2) Remove nut (7), lock washer (8), washer (9), and three cables (10, 11, and 4) from shunt terminal (12). Discard lock washer.



- (3) Remove screw (13), washer (14), and three cables (15, 16, and 5) from ground mount (17).

c. Cab Buss Bar Cable Removal.

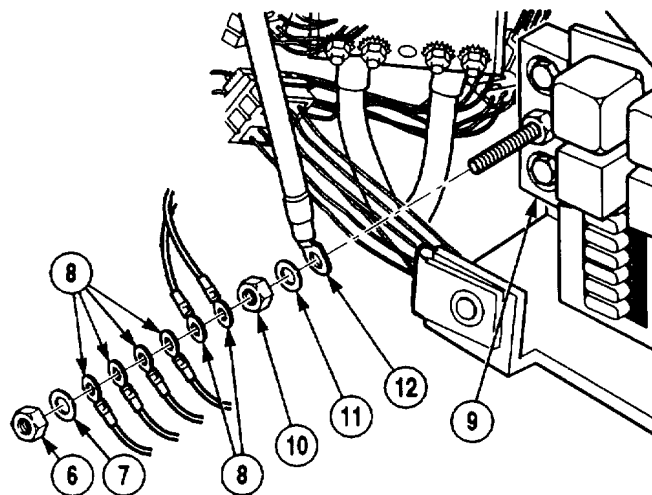


(1) Open cab door (1).

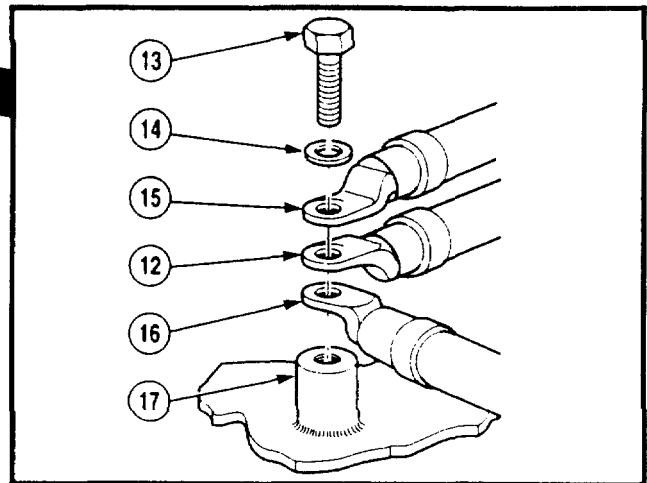
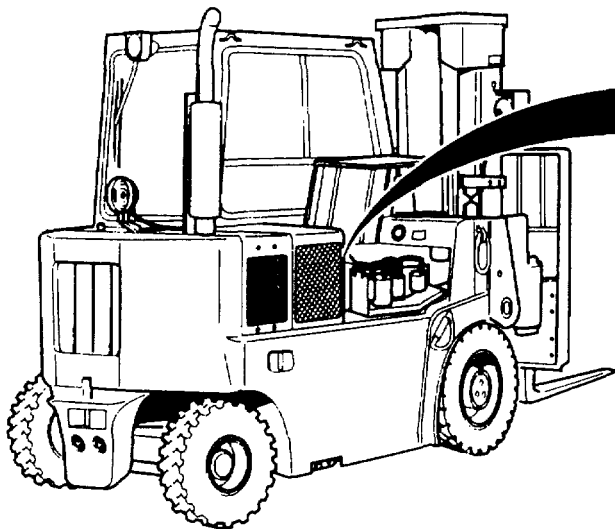
(2) Remove seven screws (2), washers (3), and lower dash panel (4) from dash frame (5).

(3) Remove nut (6), washer (7), and six wires (8) from cab shunt (9).

(4) Remove nut (10), washer (11), and cable (12) from cab shunt (9).

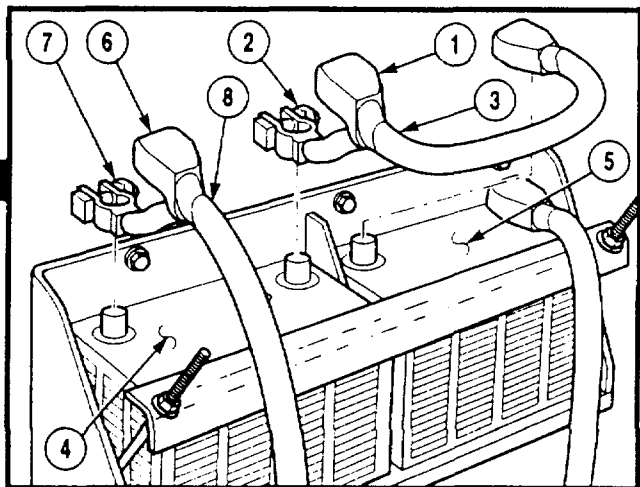
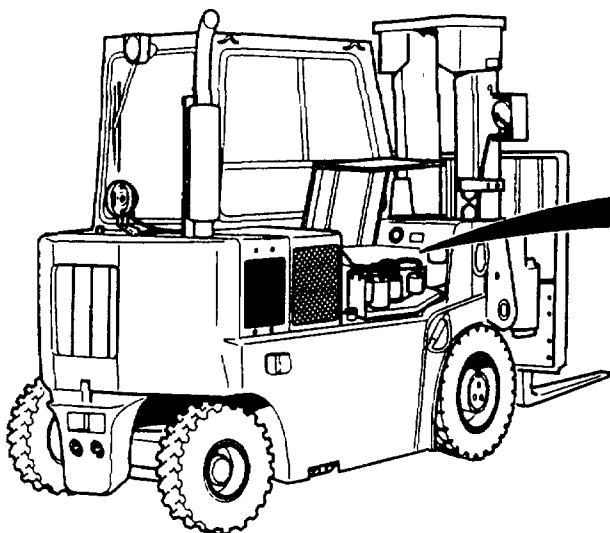


7-53. **GENERAL CABLE REPLACEMENT (CONT).**



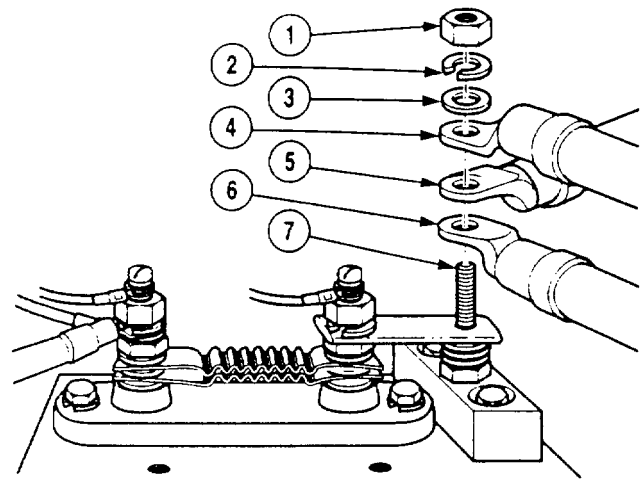
(5) Remove screw (13), washer (14), and three cables (15, 12, and 16) from ground mount (17).

d. Battery Cable Removal.

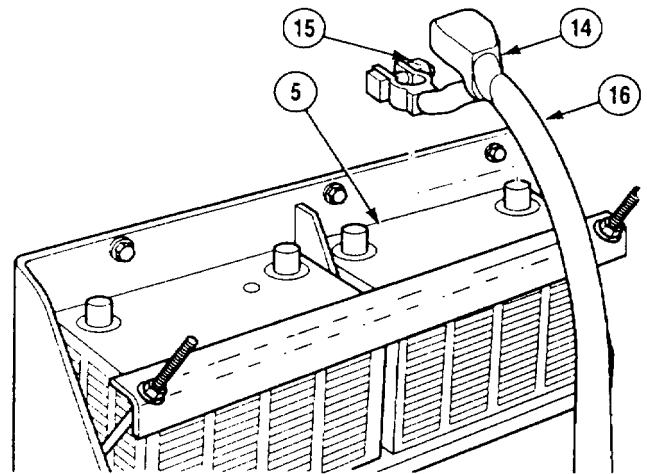


- (1) Lift back two terminal covers (1), loosen two nuts (2), and remove cable (3) from two batteries (4 and 5).
- (2) Lift back terminal cover (6), loosen nut (7), and remove cable (8) from battery (4).

- (3) Remove nut (9), lock washer(10), washer (11), and three cables (8, 12, and 13) from shunt terminal (14). Discard lock washer.



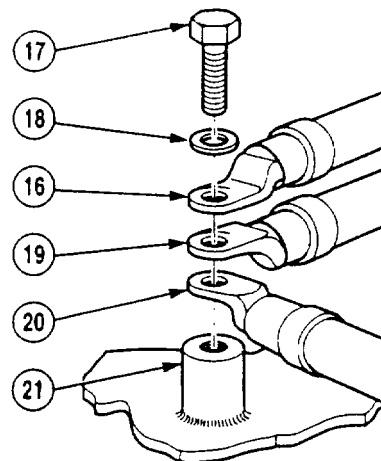
- (4) Lift back terminal cover (14), loosen nut (15), and remove cable (16) from battery 15).



- (5) Remove screw (17), washer (18), and three cables (16, 19, and 20) from ground mount (21).

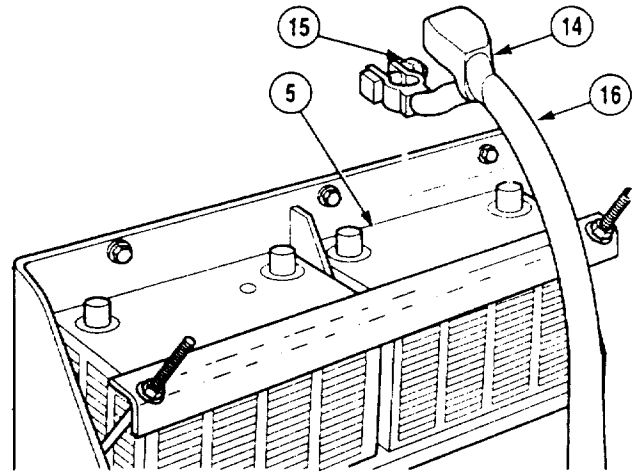
e. Battery Cable Installation.

- (1) Install three cables (20, 19, and 16) on ground mount (21) with washer (18) and screw (17).

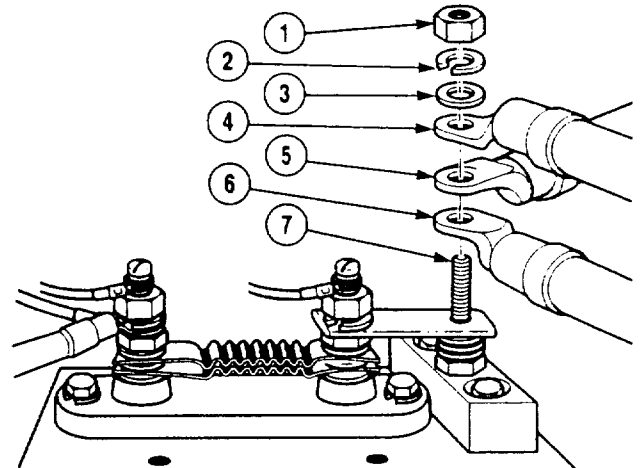


7-53. GENERAL CABLE REPLACEMENT (CONT).

- (2) Install cable (16) on battery (5) and tighten nut (15). Lift terminal cover (14).

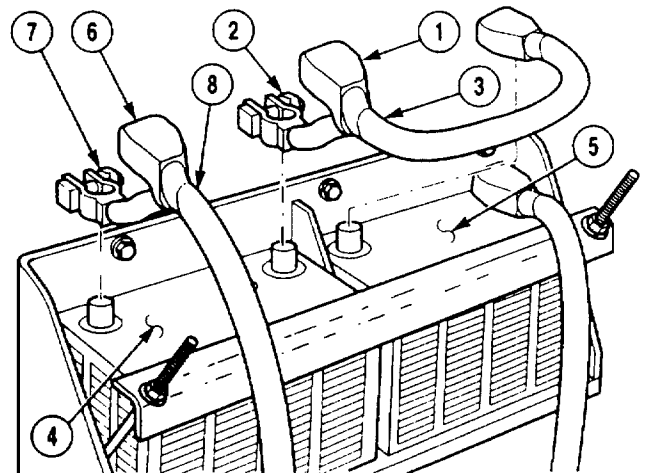


- (3) Install three cables (13, 12, and 8) on shunt terminal (14) with lock washer (10), washer (11), and nut (9).



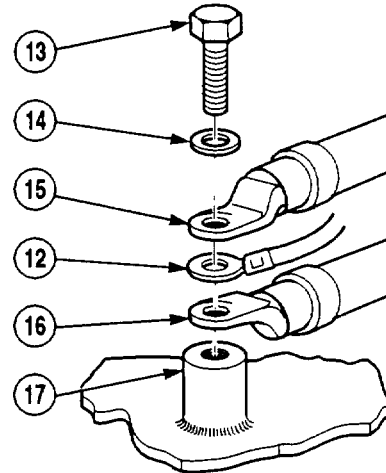
- (4) Install cable (8) on battery (4) and tighten nut (7). Lift terminal cover (6).

- (5) Install cable (3) on two batteries (4 and 5) and tighten two nuts (2). Lift two terminal covers (1).

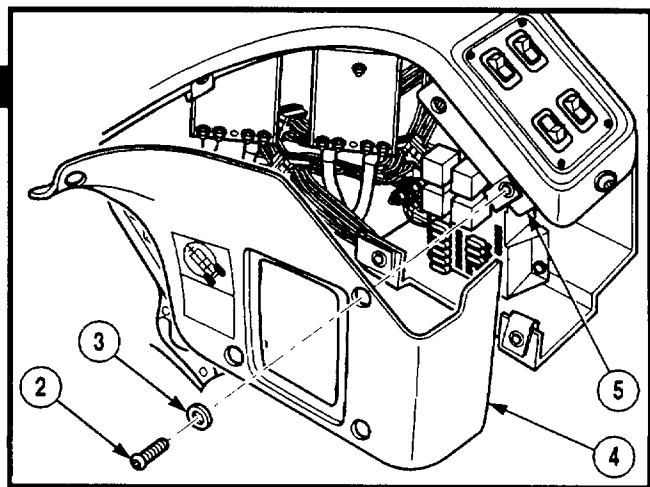
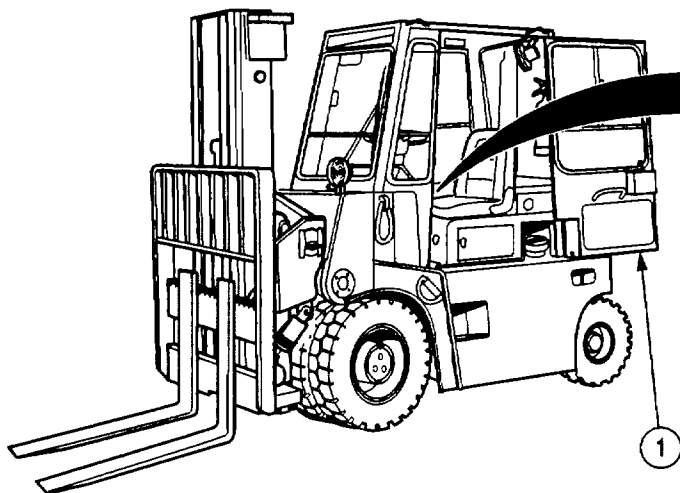
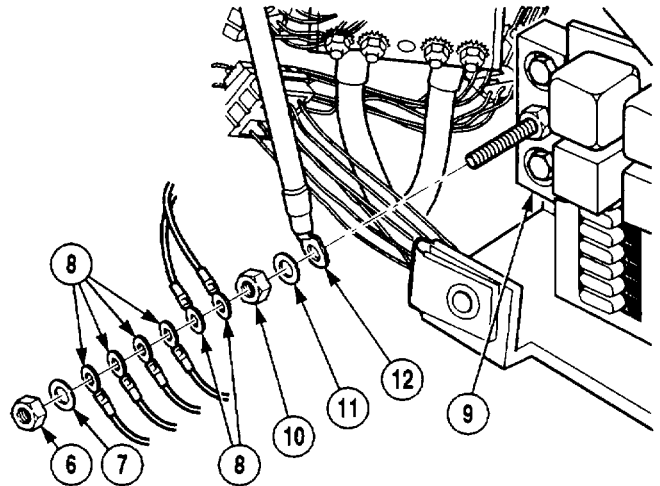


f. Cab Shunt Cable Installation.

- (1) Install three cables (15, 12, and 16) on ground mount (17) with washer (14) and screw (13).



- (2) Install cable (12) on cab shunt (9) with washer (11) and nut (10).
- (3) Install six wires (8) on cab shunt (9) with washer (7) and nut (6).

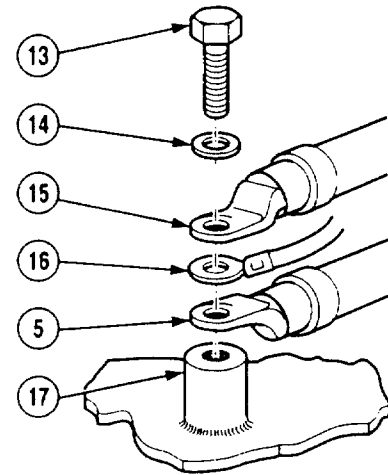


- (4) Install lower dash panel on dash frame (5) with seven washers (3) and screws (2).
- (5) Close cab door (1)

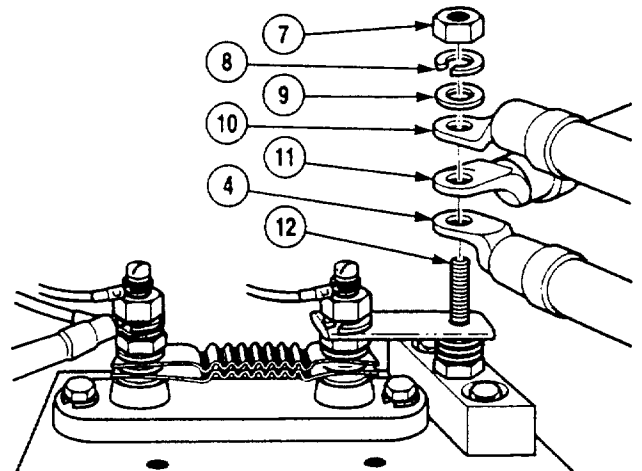
7-53. GENERAL CABLE REPLACEMENT (CONT).

g. Starter Cable Installation.

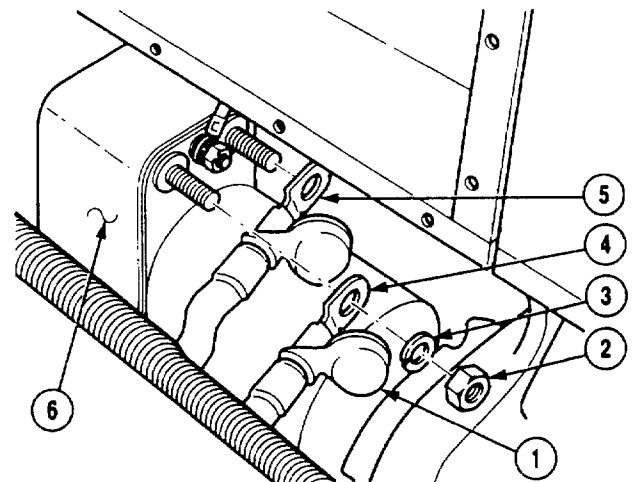
- (1) Install three cables (5, 16, and 15) on ground mount (17) with washer (14) and screw (13).



- (2) Install three cables (4, 11, and 10) on shunt terminal (12) with lock washer (8) and nut (7).

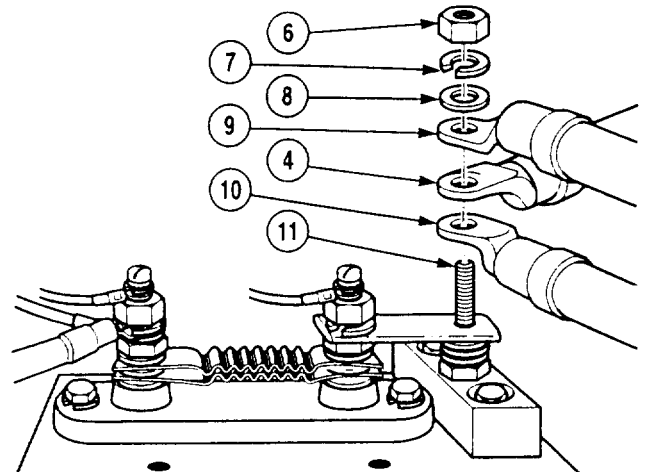


- (3) Install two cables (5 and 4) on starter solenoid (6) with two lock washers (3) and nuts (2). Lift two terminal covers (1).

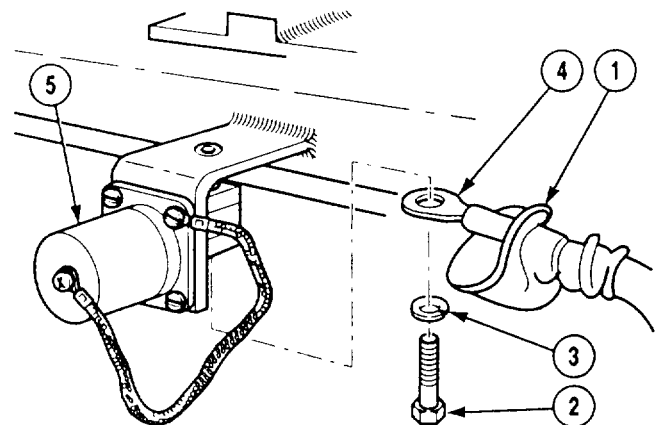


h. NATO Cable Installation.

- (1) Install three cables (10, 4, and 9) on shunt terminal (11) with washer (8), lock washer (7), and nut (6).



- (2) Install cable (4) on NATO plug (5) with lock washer (3) and screw (2). Lift terminal cover (1).
- (3) Install right-hand engine panel (Para 159).



NOTE
Follow-on Maintenance:

- Connect batteries (Para 7-48).
- Install engine ventilation panel (para 6-2).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

7-54. GENERAL CONNECTOR REPAIR.

This task covers:

- a. Type 1 Connector Repair b. Type 2 Connector Repair c. Type 3 Connector Repair

INITIAL SETUP*Tools and Special Tools*

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Tool Kit, Electric (Item 2, Appendix B)

References

TM 43-0158

Equipment Condition

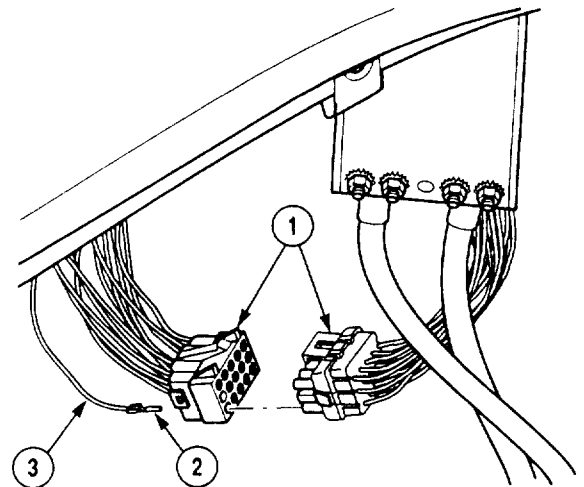
Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Batteries disconnected (Para 7-48)

NOTE

- Number of wires may vary in connector. All connector types are repaired the same way.
- If wire is damaged or too short, or if a single wire connector needs repaired, refer to TM 43-0158.

a. Type 1 Connector Repair.**(1) Disassembly.**

- (a) Disconnect connector (1).
- (b) Using terminal removal tool, remove terminal (2) from connector (1).
- (c) Cut and remove terminal (2) from wire (3).



7-54. GENERAL CONNECTOR REPAIR (CONT).

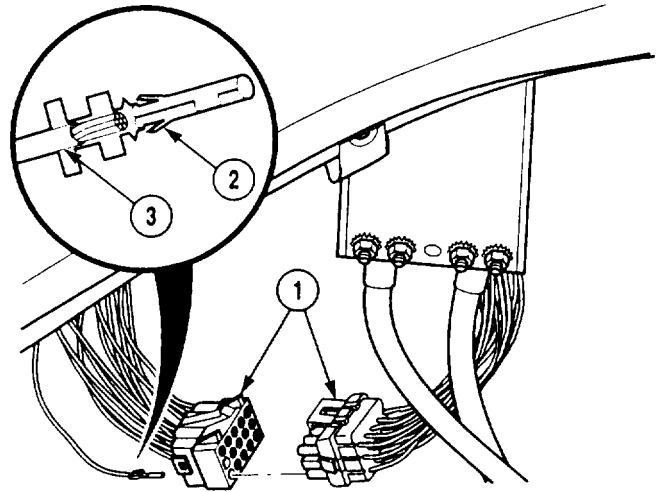
(2) *Assembly.*

- (a) Strip end of wire (3) leaving 1/4 in. (0.64 cm) of bare wire.

NOTE

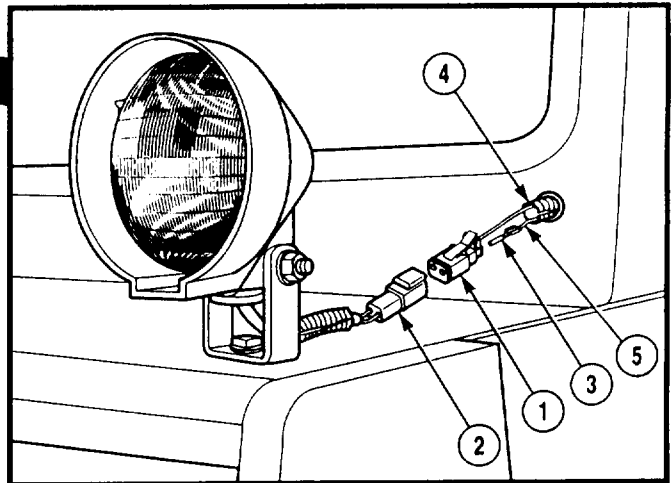
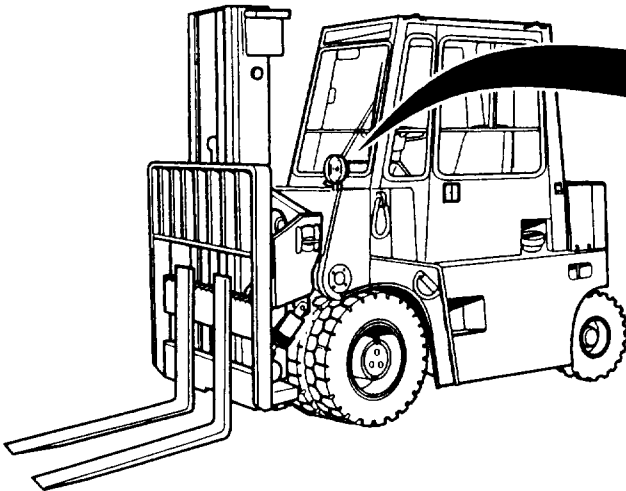
Wire should be positioned so larger wings of terminal will crimp around insulation and smaller wings will crimp around exposed bare wire.

- (b) Push terminal (2) open and position wire (3).
 (c) Crimp terminal (2) on wire (3).
 (d) Install terminal (2) in connector (1).
 (e) Connect connector (1).



b. Type II Connector Repair.

(1) *Disassembly.*



- (a) Disconnect connector (1) from front worklight connector (2).
 (b) Using terminal removal tool, remove terminal (3) from connector (1).
 (c) Remove conduit (4) from wire (5).
 (d) Cut and remove terminal (3) from wire (5).

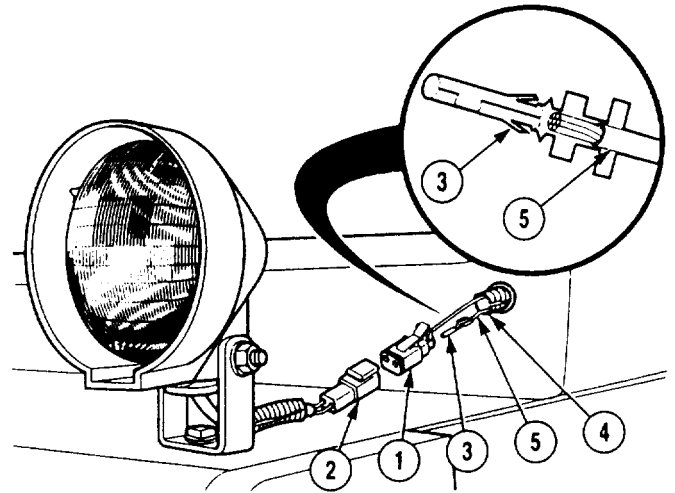
(2) *Assembly.*

- (a) Strip end of wire (5) leaving 1/4 in. (0.64 cm) of bare wire.

NOTE

Wire should be positioned so larger wings of terminal will crimp around insulation and smaller wings will crimp around exposed bare wire.

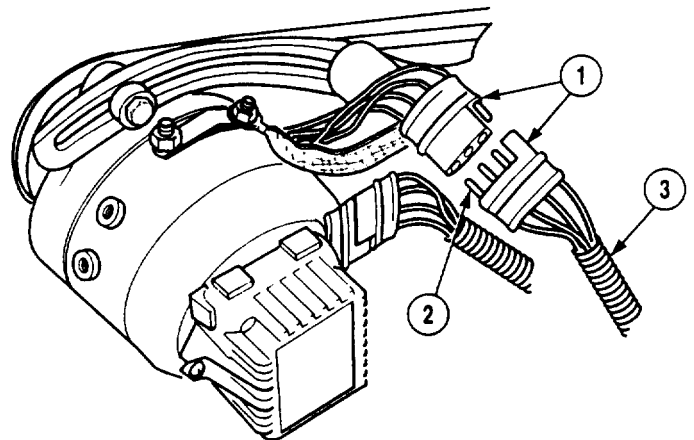
- (b) Push terminal (3) open and position wire (5).
 (c) Crimp terminal (3) on wire (5).
 (d) Install conduit (4) on wire (5).
 (e) Install terminal (3) in connector (1).
 (f) Connect front worklight connector (2) on connector (1).



c. Type III Connector Repair.

(1) *Disassembly.*

- (a) Disconnect connector (1).
 (b) Using terminal removal tool, remove terminal (2) from connector (1).
 (c) Cut and remove terminal (2) from wire (3).



(2) *Assembly.*

- (a) Strip end of wire (3) leaving 1/4 in. (0.64 cm) of bare wire.

NOTE

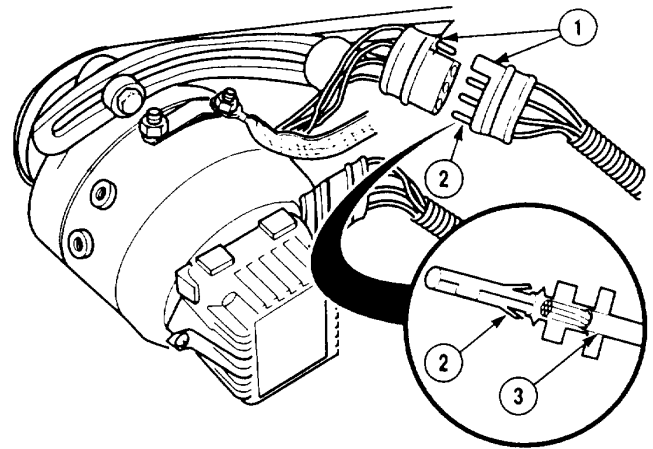
Wire should be positioned so larger wings of terminal will crimp around insulation and smaller wings will crimp around exposed bare wire.

- (b) Push terminal (2) open and position wire (3).
- (c) Crimp terminal (2) on wire (3).
- (d) Install terminal (2) in connector (1).
- (e) Connect connector (1).

NOTE

Follow-on Maintenance:

- Connect batteries (Para 7-48).
- Remove wheel chocks (TM 10-3930-669-10).



END OF TASK

CHAPTER 8

TRANSMISSION SYSTEM MAINTENANCE

Para	Contents	Page
8-1	Introduction.....	8-1
8-2	Transmission Oil and Filter Replacement.....	8-2
8-3	Transmission AOAP Valve Replacement	8-6
8-4	Transmission Oil Cooler and Hose Replacement	8-7
8-5	Transmission Oil Filter Adapter Replacement	8-17

8-1. NTRODUCTION.

This chapter contains maintenance instructions for removing, replacing, repairing, and installing transmission components authorized by the Maintenance Allocation Chart (MAC) at the Unit Maintenance level.

8-2. TRANSMISSION OIL AND FILTER REPLACEMENT.

This task covers:

- a. Removal b. Cleaning/Inspection c. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Funnel, Flexible Spout
(Item 2, Appendix B)
Pan, Drain (12 qt) (Item 11, Appendix B)

Materials/Parts

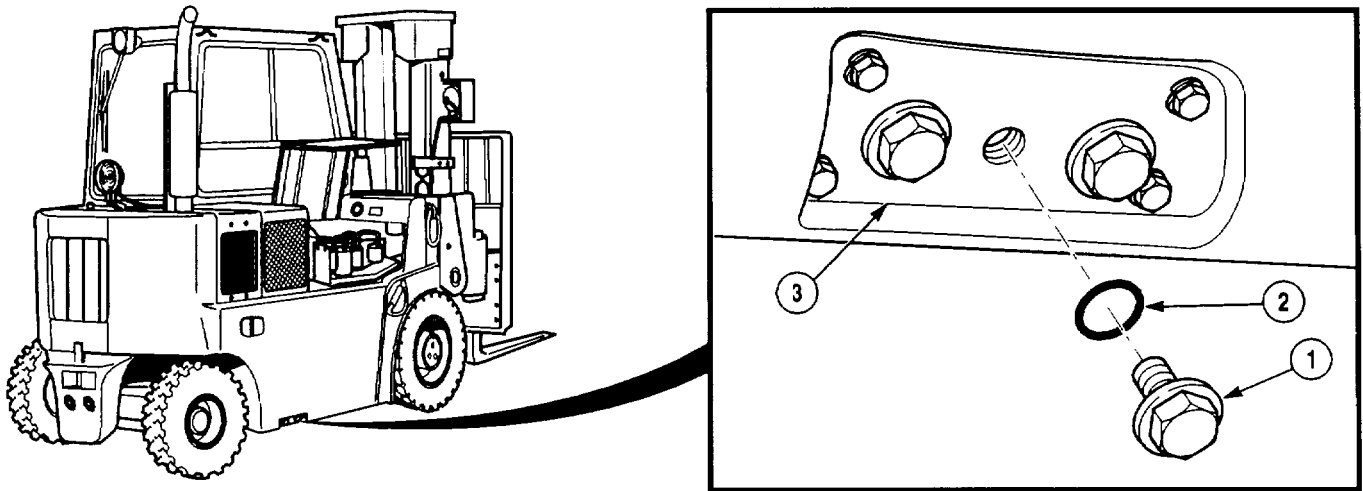
Oil, Transmission (Item 25, Appendix C)
Rags, Wiping (Item 19, Appendix C)
Solvent, Dry-cleaning (Item 20, Appendix C)
Filter, Transmission

Materials/Parts - Continued

Packing, Preformed
Packing, Preformed

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Cab door opened (TM 10-3930-669-10)
Cab engine access door open
(TM 10-3930-669-10)

a. Removal.

- (1) Start engine (TM 10-3930-669-10) and run for five minutes.
- (2) Shut off engine (TM 10-3930-669-10).

WARNING

- Transmission oil may be hot when drained. Do not come in contact with hot oil. Failure to do so may result in injury to personnel.
- Transmission oil is slippery and can cause falls. To avoid injury, wipe up spilled oil with rags.

NOTE

- Forklift should be on level surface to ensure oil level can be checked correctly and that all oil is drained.
 - Position suitable drain pan with an 8 qt (8 l) capacity under drain plug prior to start of procedure.
 - Transmission oil will come out immediately when drain plug is removed.
 - Allow five minutes for transmission oil to settle before draining.
- (3) Remove drain plug (1) and preformed packing (2), from drain plate (3). Discard preformed packing.

8-2. TRANSMISSION OIL AND FILTER REPLACEMENT (CONT).**WARNING**

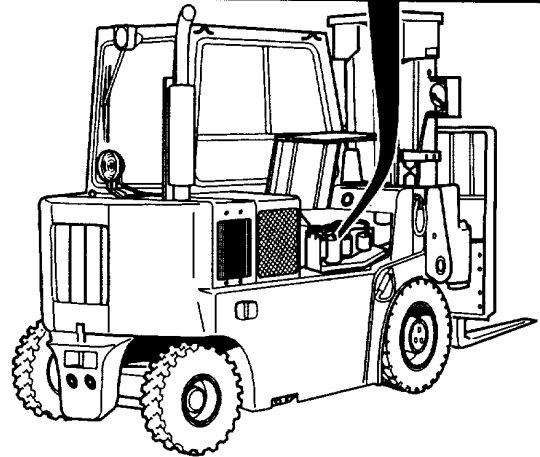
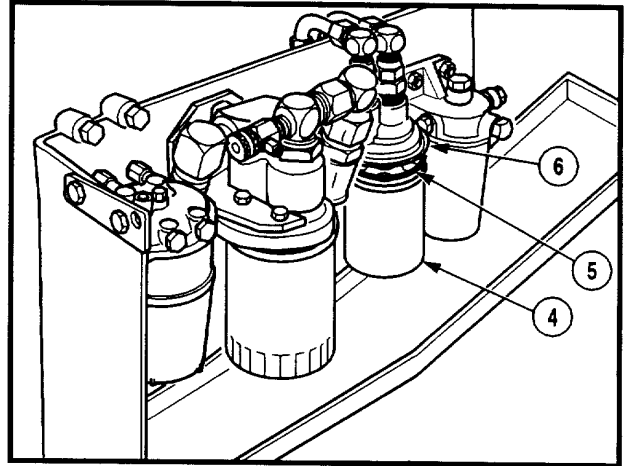
Transmission oil is flammable.
Ensure engine is cool to prevent fire.
Injury or death to personnel could result.

- (4) Position wiping rags under filter (4) to catch excess transmission oil.
- (5) Using wiping rags, clean area around filter.

CAUTION

Area around filter must be very clean.
Any contaminants entering filter
adapter will damage equipment.

- (6) Remove filter (4) and preformed packing (5) from transmission oil filter adapter (6). Discard filter and preformed packing.

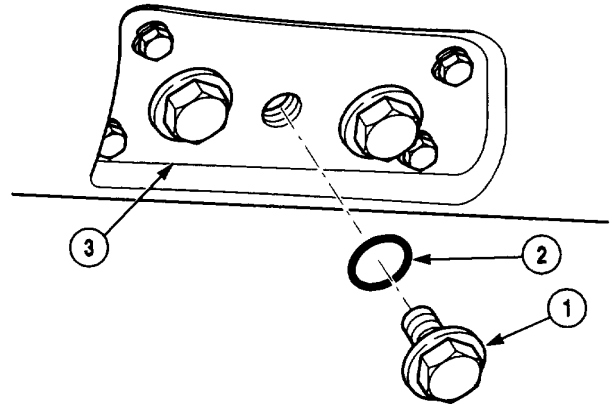
**b. Cleaning/Inspection.**

- (1) Inspect drain plug for stripped threads and damage.
- (2) Replace damaged parts or notify supervisor.

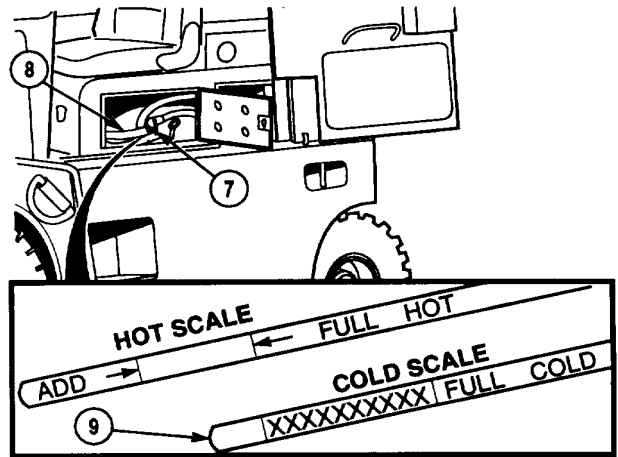
c. Installation.

- (1) Coat preformed packing (5) with a light coat of clean transmission oil (LO 10-3930-669-12).
- (2) Install filter (4) with preformed packing (5) on transmission oil filter adapter (6). Tighten filter one-half to three-fourths turn after preformed packing contacts transmission.
- (3) Remove wiping rags from under filter (4).

- (4) Coat preformed packing (2) with a light coat of clean transmission oil.
- (5) Install preformed packing (2) and drain plug (1) in drain plate (3).



- (6) Remove dipstick (7) from transmission dipstick tube (8) and wipe with clean wiping rag.
- (7) Fill transmission with 7 qt (7 l) of transmission oil in dipstick tube (8).



CAUTION

Check dipstick for dirt or other contamination before installing in dipstick tube. Wipe any contamination away using a clean wiping rag or damage to equipment may result.

- (8) Insert dipstick (7) in dipstick tube (8).
- (9) Start engine (TM 10-3930-669-10) and run for five minutes.
- (10) With engine running and transmission in neutral, remove dipstick (7) from transmission dipstick tube (8) and check oil level.
- (11) Add transmission oil as necessary (LO 10-3930-669-12) until oil level is at the FULL mark (9) on dipstick (7).
- (12) Stop engine (TM 10-3930-669-10).

NOTE

Follow-on Maintenance:

- Close cab engine access door (TM 10-3930-669-10).
- Close cab door (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

8-3. TRANSMISSION AOAP VALVE REPLACEMENT.

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP

Tools and Special Tools

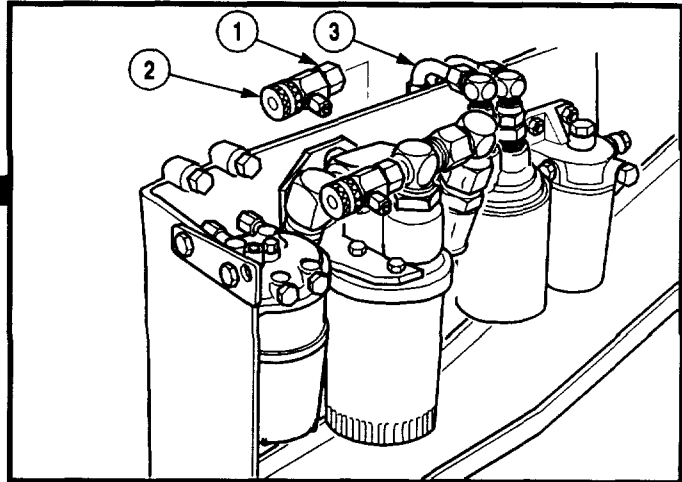
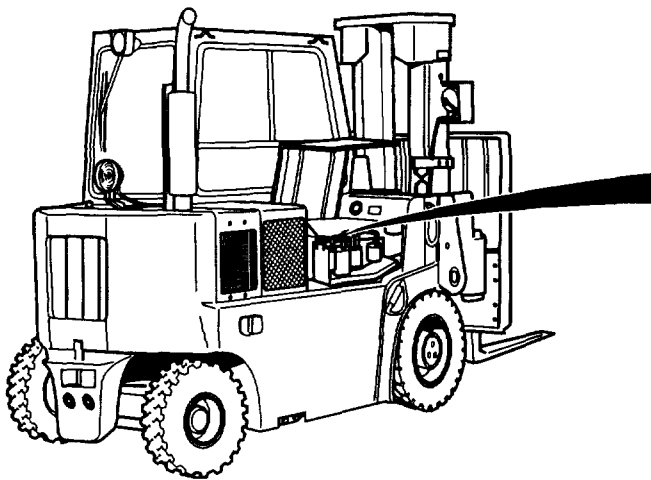
Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)

Equipment Condition - Continued

Wheels chocked (TM 10-3930-669-10)
Batteries disconnected (Para 7-48)



- a. **Removal.** Loosen fitting (1) and remove transmission AOAP valve (2) from fitting (3).
- b. **Installation.** Install transmission AOAP valve (2) in fitting (3) and tighten fitting (1).

NOTE

Follow-on Maintenance:

- Connect batteries (Para 7-48).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

8-4. TRANSMISSION OIL COOLER AND TUBE REPLACEMENT.

This task covers:

- a. Removal b. Cleaning/Inspection c. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Wrench, Torque (0 to 175 lb-ft [0-237 N.m])
(Item 2, Appendix B)
Funnel, Flexible Spout (Item 2, Appendix B)
Pan, Drain (12 qt) (Item 11, Appendix B)
Wrench, Torque (0-60 N.m)
(Item 12, Appendix B)

Materials/Parts

Ties, Cable (Item 4, Appendix C)
Rags, Wiping (Item 19, Appendix C)
Solvent, Dry-cleaning (Item 20, Appendix C)

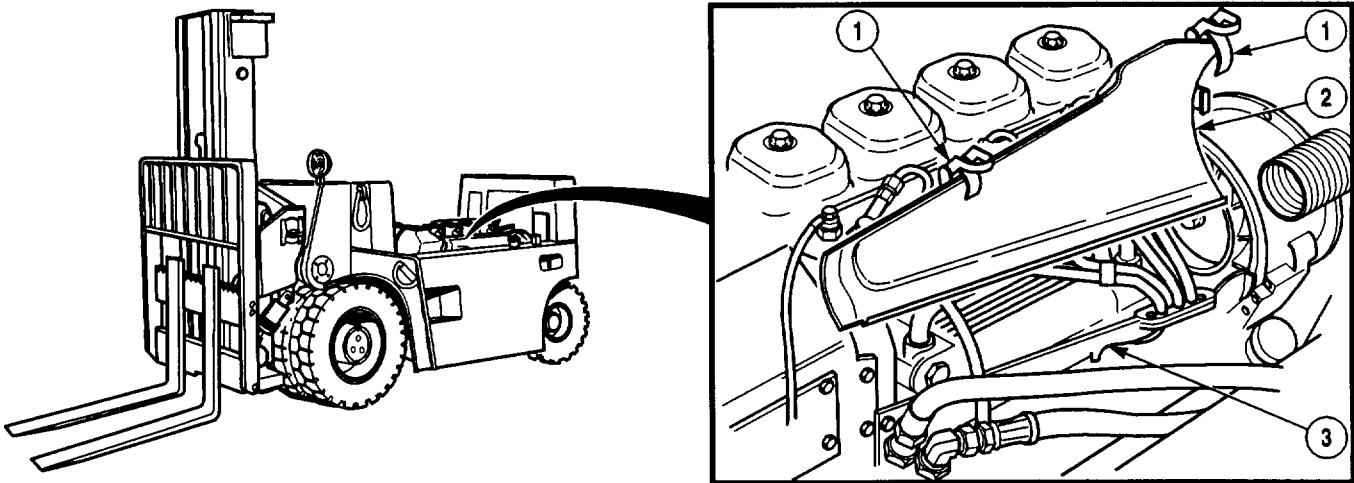
Materials/Parts - Continued

Tag, Identification (Item 21, Appendix C)
Packing, Preformed
Seal
Seals (4)
Washer Lock
Washer Lock (2)

Equipment Condition

Wheels chocked (TM 10-3930-669-10)
Cab removed (Para 15-2)

a. Removal.



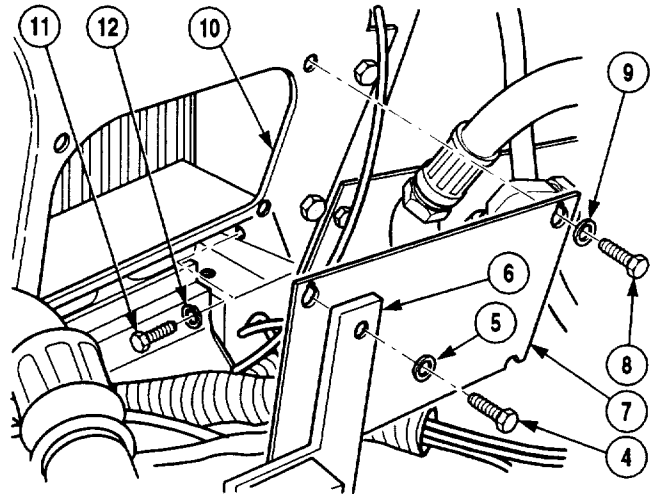
NOTE

Remove cable ties as necessary.

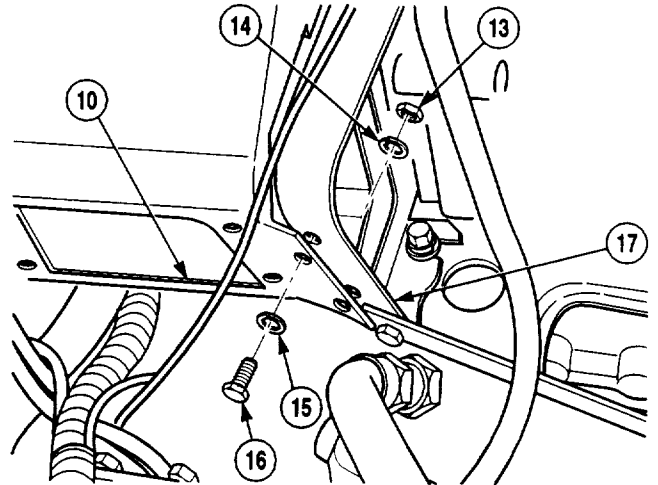
- (1) Unlock two latches (1) and remove cover (2) from engine (3).

8-4. TRANSMISSION OIL COOLER AND HOSE REPLACEMENT (CONT).

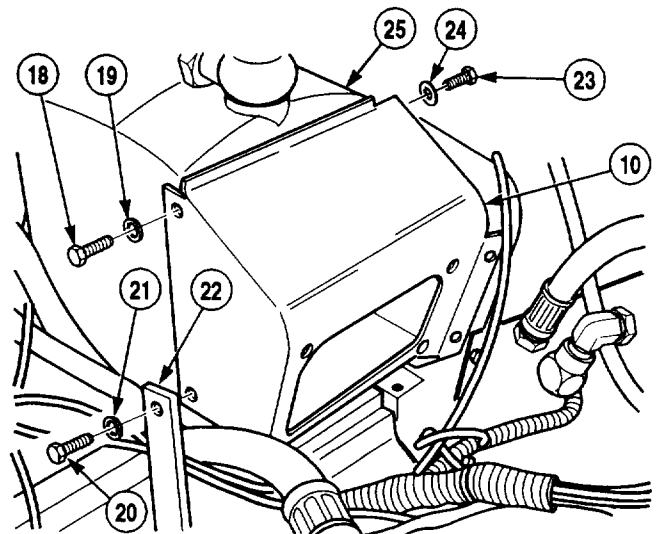
- (2) Remove two screws (4), washers (5), and bracket (6) from cover (7).
- (3) Remove two screws (8), washers (9), and cover (7) from hood (10).
- (4) Remove screw (11) and lock washer (12) from hood (10). Discard lock washer.



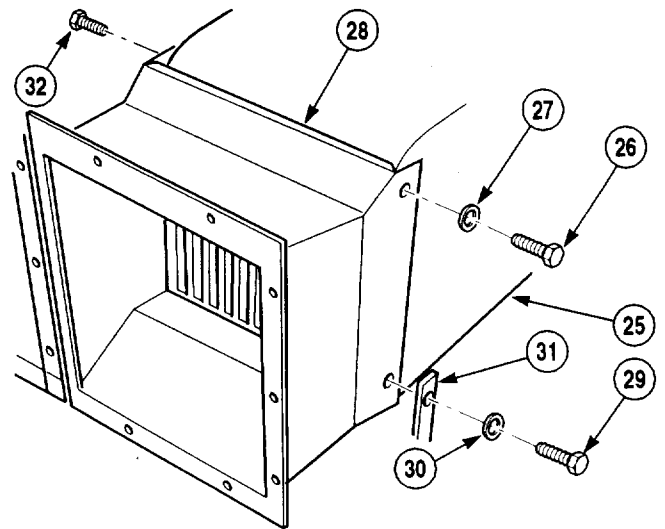
- (5) Remove two nuts (13), lock washers (14), washers (15), and screws (16) from hood (10) and plate (17). Discard lock washers.



- (6) Remove screw (18) and washers (19) from hood (10).
- (7) Remove screw (20), washer (21), and bracket (22) from hood (10).
- (8) Remove screw (23), washer (24), and hood (10) from transmission oil cooler (25).



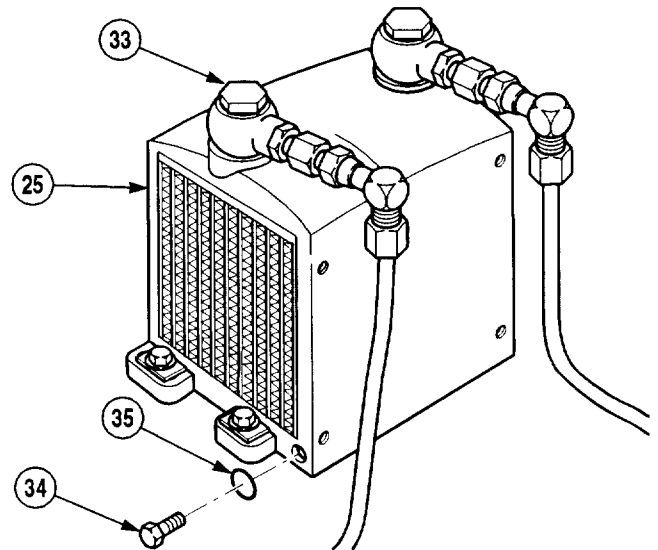
- (9) Remove screw (26) and washer (27) from oil cooler duct (28).
- (10) Remove screw (29), washer (30), and bracket (31) from oil cooler duct (28).
- (11) Remove screw (32) and oil cooler duct (28) from transmission oil cooler (25).



WARNING

**Oil is slippery and can cause falls.
To avoid injury, wipe up spilled oil
with rags.**

- (12) Loosen screw (33) on transmission oil cooler (25).
- (13) Remove drain plug (34) and preformed packing (35) from transmission oil cooler (25) and drain oil into drain pan. Discard preformed packing.

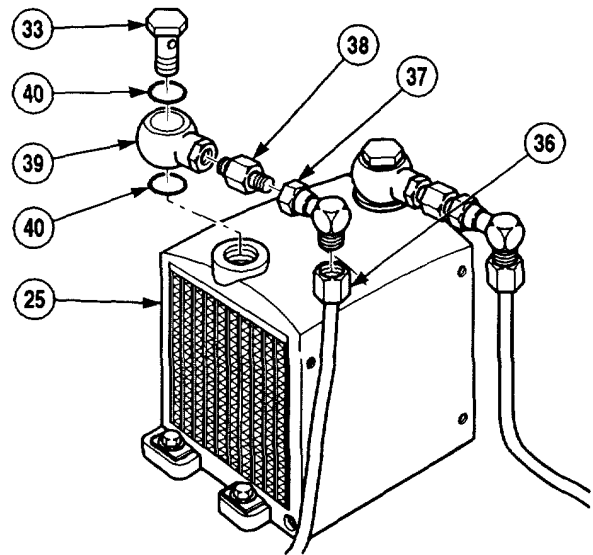


8-4. TRANSMISSION OIL COOLER AND TUBE REPLACEMENT (CONT).

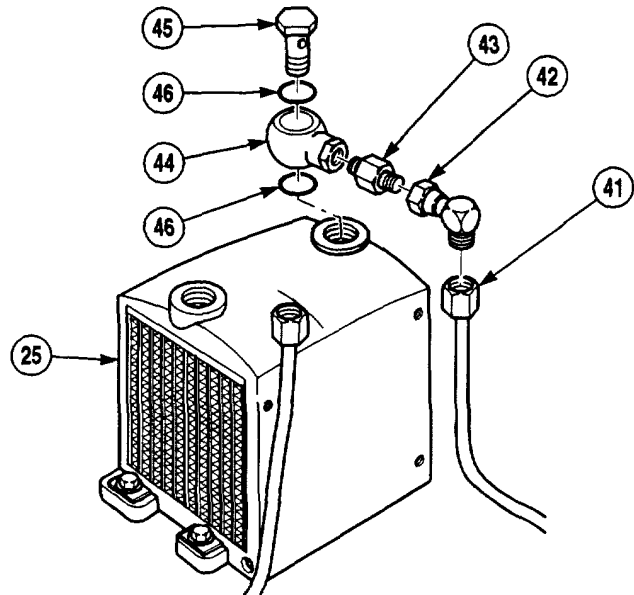
NOTE

- Tag and mark all lines and fittings prior to removal.
- Inspect all hoses, lines, and fittings for cracks, bends, nicks, dents, stripping threads, and cuts. Replace all damaged parts.

- (14) Remove tube (36) from elbow (37).
- (15) Remove elbow (37) from fitting (38).
- (16) Remove fitting (38) from fitting (39).
- (17) Remove screw (33), two seals (40), and fitting (39) from transmission oil cooler (25). Discard seals.

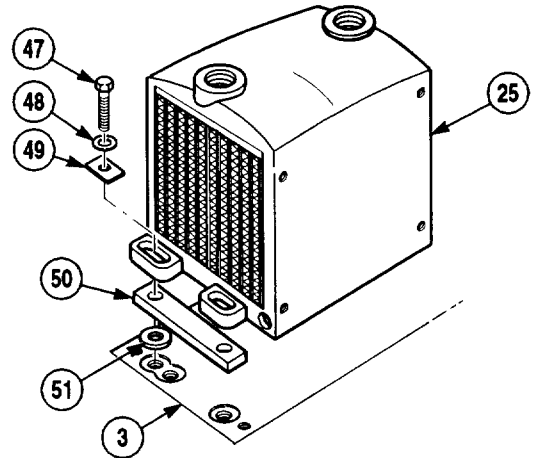


- (18) Remove tube (41) from elbow (42).
- (19) Remove elbow (42) from fitting (43).
- (20) Remove fitting (43) from fitting (44).
- (21) Remove screw (45), two seals (46), and fitting (44) from transmission oil cooler (25).



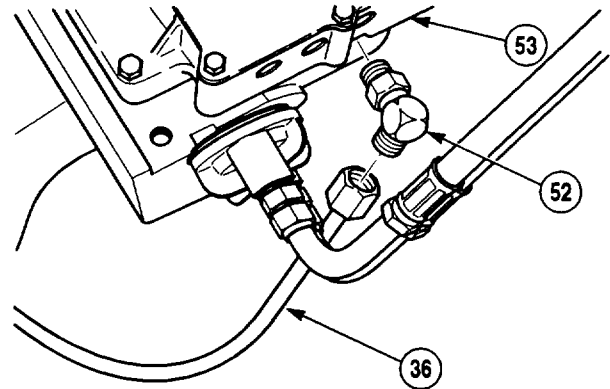
(22) Remove four screws (47), washers (48), and plates (49) from transmission oil cooler (25).

(23) Remove transmission oil cooler (25), two plates (50), and four spacers (51) from engine (3).



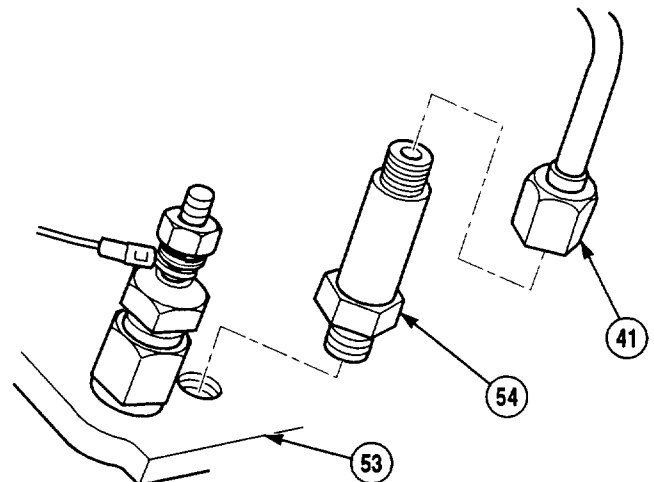
(24) Remove tube (36) from elbow (52).

(25) Remove elbow (52) from transmission (53).



(26) Remove tube (41) from fitting (54).

(27) Remove fitting (54) from transmission (53).



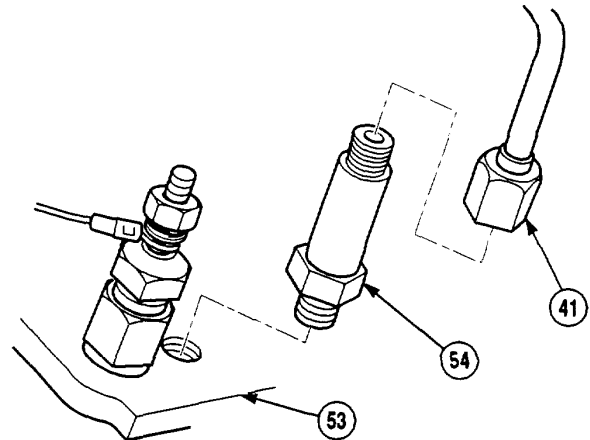
8-4. TRANSMISSION OIL COOLER AND TUBE REPLACEMENT (CONT).**b. Cleaning/Inspection.****WARNING**

- Dry-cleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I dry-cleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

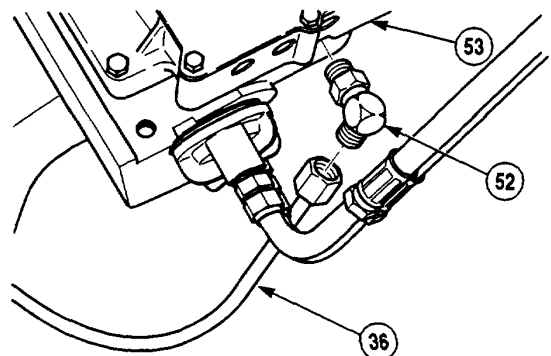
- (1) Clean all metal parts with drycleaning solvent.
- (2) Inspect all parts for breaks, cracks, burrs, and sharp edges.
- (3) Replace all damaged parts.

c. Installation.

- (1) Install fitting (54) in transmission (53).
- (2) Install tube (41) on fitting (54).



- (3) Install elbow (52) in transmission (53).
- (4) Install tube (36) on elbow (52).



(5) Position four spacers (51), two plates (50), and transmission oil cooler (25) on engine (3).

(6) Install four plates (49), washers (48), and screws (47) in transmission oil cooler (25). Tighten screws to 36 lb-ft (49 N.m).

(7) Install fitting (44) on transmission oil cooler (25) with two seals (46) and screw (45).

(8) Install fitting (43) in fitting (44).

(9) Install elbow (42) in fitting (43).

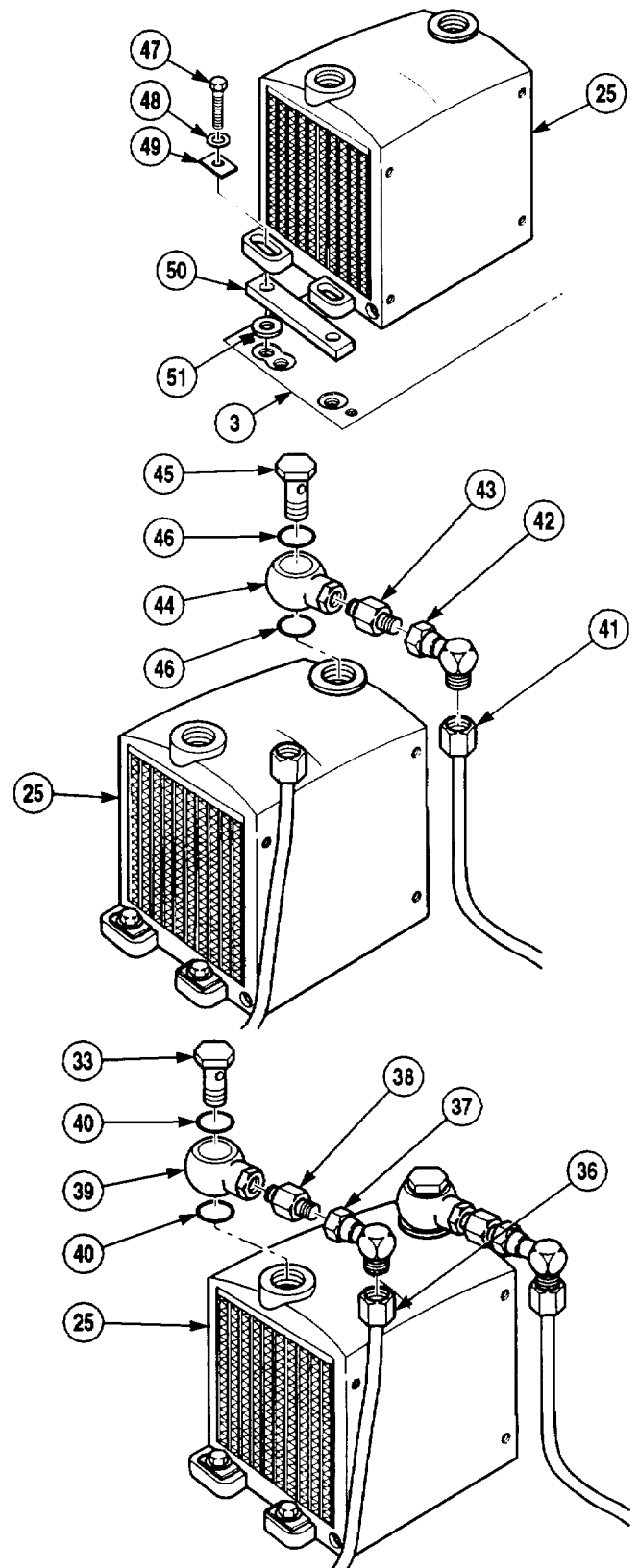
(10) Install tube (41) on elbow (42).

(11) Install fitting (39) on transmission oil cooler (25) with two seals (40) and screw (33).

(12) Install fitting (38) in fitting (39).

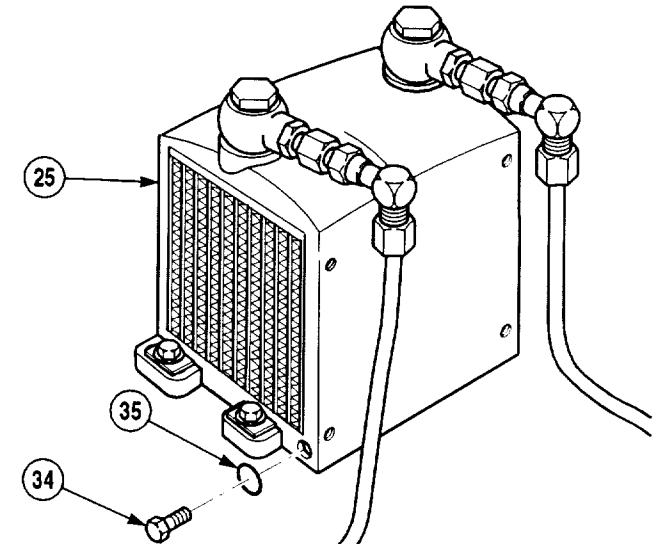
(13) Install elbow (37) in fitting (38).

(14) Install tube (36) on elbow (37).



8-4. TRANSMISSION OIL COOLER AND HOSE REPLACEMENT (CONT).

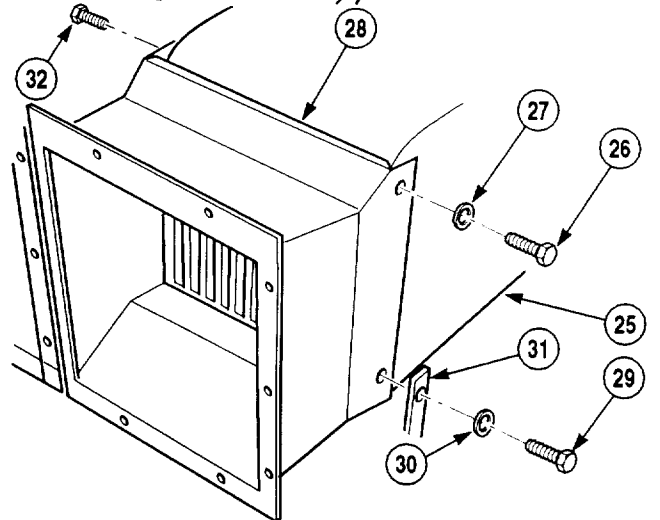
- (15) Install preformed packing (35) and plug (34) in transmission oil cooler (25).



- (16) Install oil cooler duct (28) on transmission oil cooler (25) with screw (32).

- (17) Install bracket (31) on oil cooler duct (28) with washer (30) and screw (29).

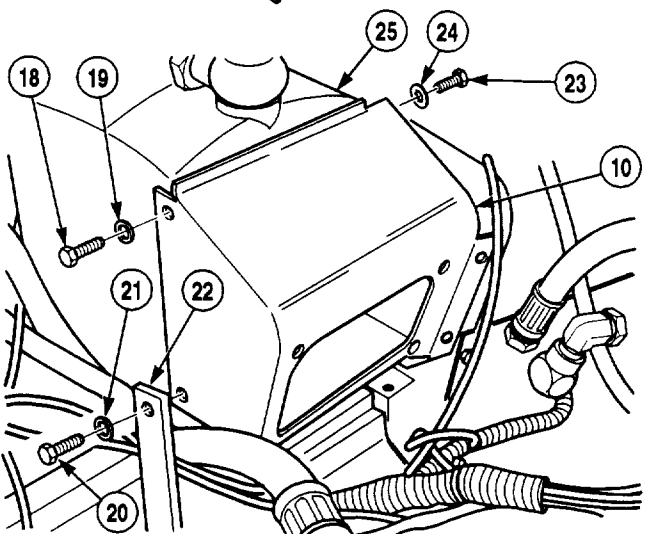
- (18) Install washer (27) and screw (26) in oil cooler duct (28).



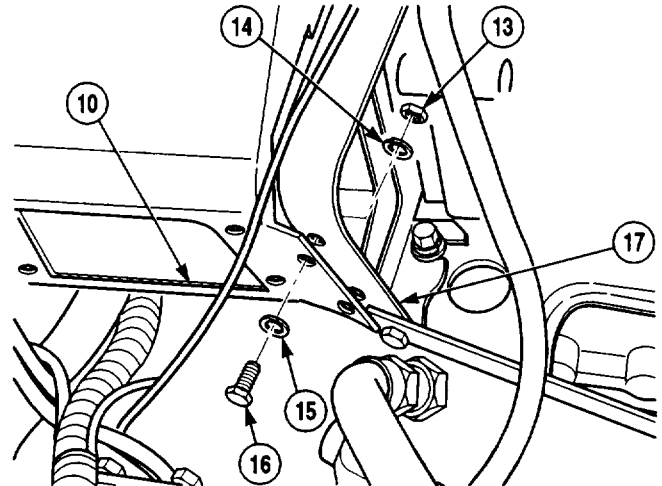
- (19) Install hood (10) on transmission oil cooler (25) with washer (24) and screw (23).

- (20) Install bracket (22) on hood (10) with washer (21) and screw (20).

- (21) Install washer (19) and screw (18) in hood (10).



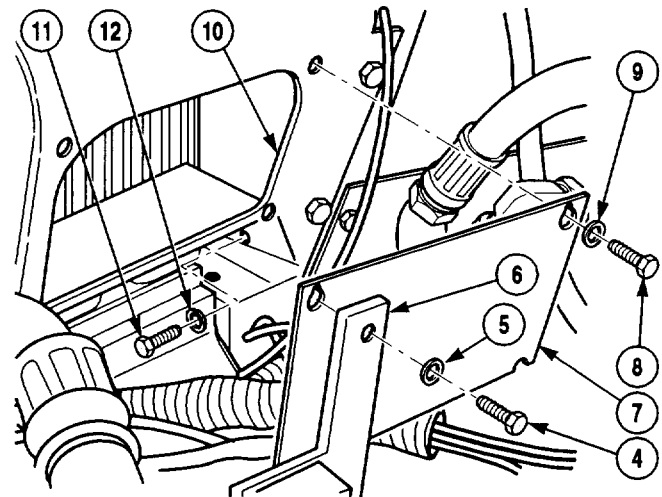
- (22) Install two screws (16), washers (15), lock washers (14), and nuts (13) in hood (10) and plate (17).



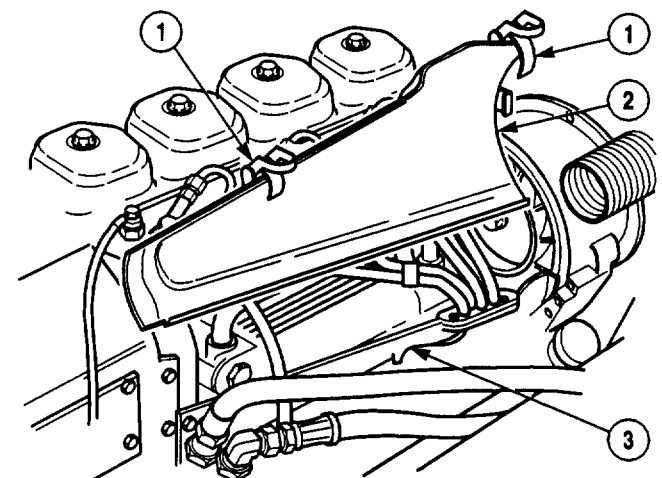
- (23) Install lock washer (12) and screw (11) in hood (10).

- (24) Install cover (7) on hood (10) with two washers (9) and screws (8).

- (25) Install bracket (6) on cover (7) with two washers (5) and screws (4).



- (26) Install cover (2) on engine (3) and lock two latches (1).

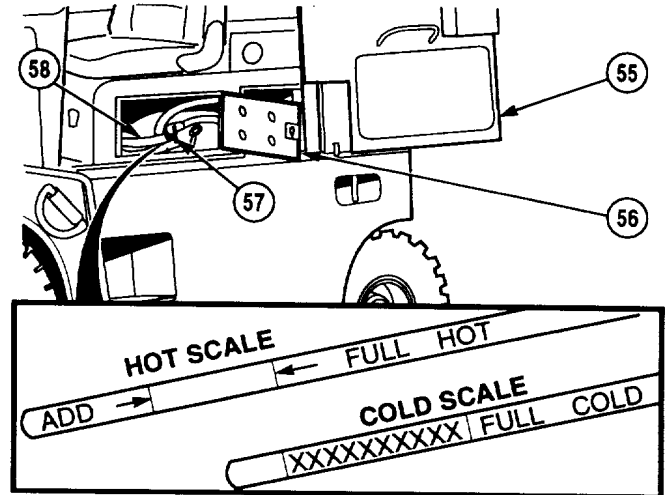


- (27) Install cab (Para 15-2).
- (28) Open cab door (55).
- (29) Open engine access door (56).
- (30) Remove dipstick (57) from dipstick tube (58) and wipe with clean wiping rag.

WARNING

Transmission oil is slippery and can cause falls. To avoid injury, wipe up spilled oil with rags.

- (31) Fill transmission with transmission oil in transmission dipstick tube (58).



CAUTION

Check dipstick for dirt or other contamination before installing in dipstick tube. Wipe any contamination away using a clean wiping rag or damage to equipment may result.

NOTE

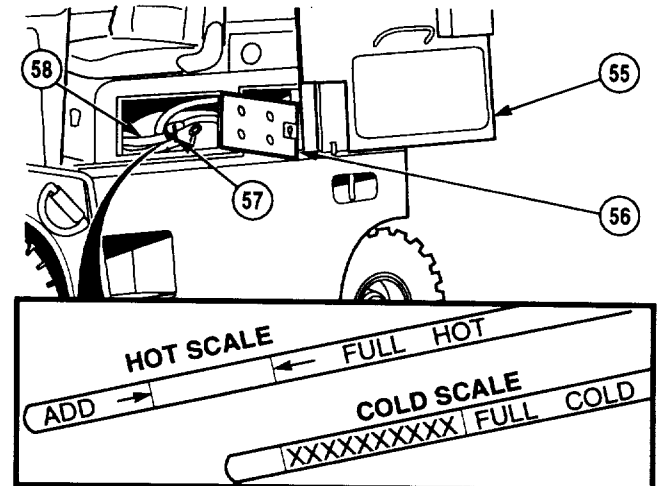
Forklift should be on level surface to ensure oil level can be checked correctly.

- (32) Insert dipstick (57) in dipstick tube (58).
- (33) Start engine (TM 10-3930-669-10) and run for five minutes.
- (34) With engine running and transmission in neutral, remove dipstick (57) from dipstick tube (58) and check oil level.
- (35) Add transmission oil as necessary to transmission until oil level is at the FULL mark (59) on dipstick (57).
- (36) Close cab floor access door (56).
- (37) Close cab door (55).

NOTE

Follow-on Maintenance:

- Remove wheel chocks (TM 10-3930-669-10).



END OF TASK

8-5. TRANSMISSION OIL FILTER ADAPTER REPLACEMENT.

This task covers:

- a. Removal b. Cleaning/Inspection c. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

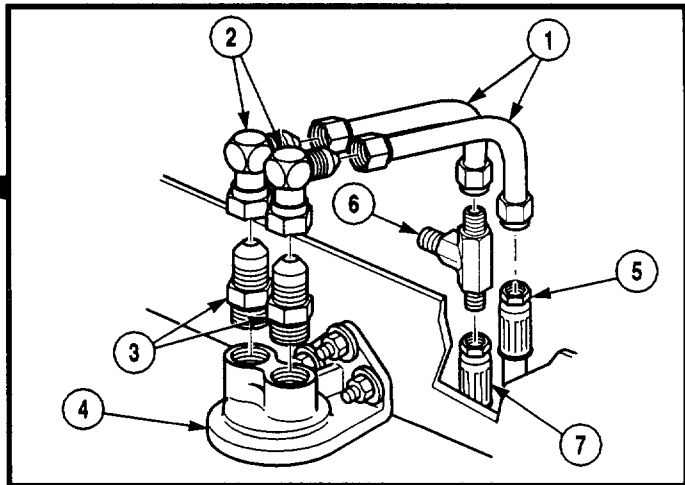
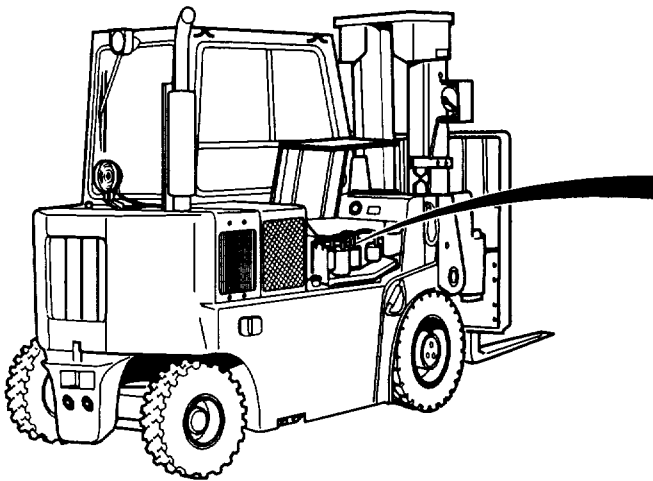
Materials/Parts

Tag, Identification (Item 21, Appendix C)

Equipment Condition

Engine off (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Right side engine access cover open
(TM 10-3930-669-10)
Transmission oil filter removed (Para 8-2)
Transmission AOAP valve removed
(Para 8-3)

a. Removal.



NOTE

- Tag and mark all lines and fittings prior to removal.
- Inspect all hoses, lines, and fittings for cracks, bends, nicks, dents, stripped threads, and cuts. Replace all damaged parts.

- (1) Remove two connectors (1) from two fittings (2).
- (2) Remove two fittings (2) from two fittings (3).
- (3) Remove two fittings (3) from transmission oil filter head (4).
- (4) Remove two connectors (1) from hose (5) and fitting (6).
- (5) Remove fitting (6) from hose (7).

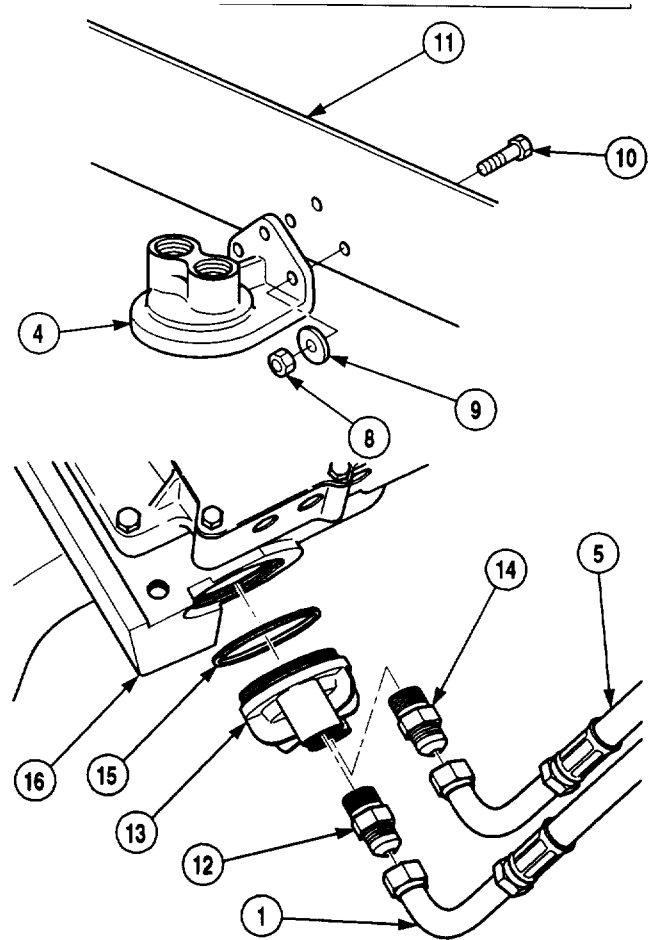
8-5. TRANSMISSION OIL FILTER ADAPTER REPLACEMENT (CONT).

- (6) Remove three nuts (8), washers (9), screws (10), and transmission oil filter head (4) from filter tray (11).

NOTE

Record connection points of hoses during disassembly to aid in reassembly.

- (7) Remove hose (7) from fitting (12).
- (8) Remove fitting (12) from transmission oil filter adapter (13).
- (9) Remove hose (5) from fitting (14).
- (10) Remove fitting (14) from transmission oil filter adapter (13).
- (11) Remove transmission oil filter adapter (13) and preformed packing (15) from transmission (16).

**b. Cleaning/Inspection.****WARNING**

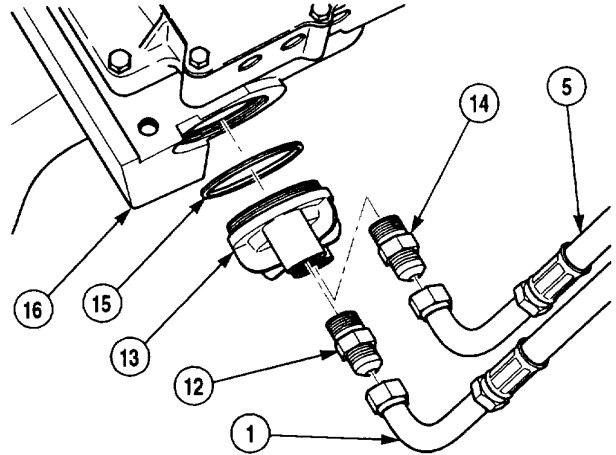
- Dry-cleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I dry-cleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

- (1) Clean all parts with dry-cleaning solvent.
- (2) Inspect hoses for holes, cracks, and deterioration.
- (3) Inspect oil filter head for cracks and damage.
- (4) Notify supervisor of any damage.

c. Installation.

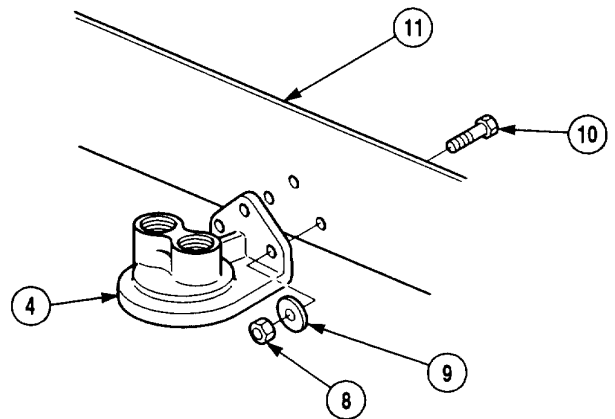
CAUTION

- Area around filter must be very clean. Any contaminants entering transmission oil filter adapter will damage equipment.
- Hoses must be connected in same manner as noted during removal or damage to transmission can result.



- (1) Coat surface of preformed packing (15) with a light coat of clean transmission oil.
- (2) Install preformed packing (15) and transmission oil filter adapter (13) on transmission (16).
- (3) Install fitting (14) on transmission oil filter adapter (13).
- (4) Install hose (5) on fitting (14).
- (5) Install fitting (12) on transmission oil filter adapter (13).
- (6) Install hose (7) on fitting (12).

- (7) Install transmission oil filter head (4) on filter tray (11) with three screws (10), washers (9), and nuts (8).



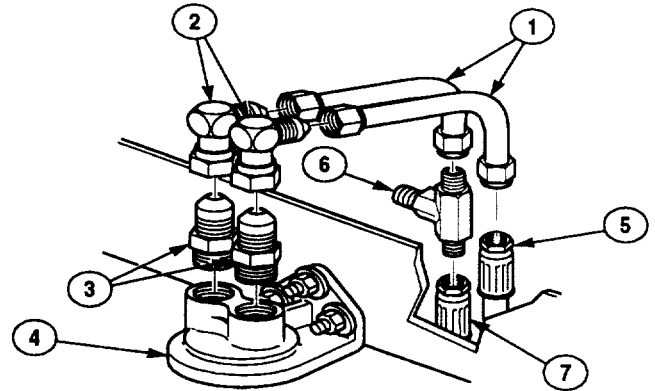
8-5. TRANSMISSION OIL FILTER ADAPTER REPLACEMENT (CONT).

- (8) Install fitting (6) on hose (7).
- (9) Install two connectors (1) on hose (5) and fitting (6).
- (10) Install two fittings (3) on transmission oil filter head (4).
- (11) Install two fittings (2) on two fittings (3).
- (12) Install two connectors (1) on two fittings (2).

NOTE

Follow-on Maintenance:

- Install transmission AOAP valve (Para 8-3).
- Install transmission oil filter (Para 8-2).
- Close right side engine access cover (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).



END OF TASK

CHAPTER 9

FINAL DRIVE MAINTENANCE

Para	Contents	Page
9-1	Introduction	9-1
9-2	Driveshaft Replacement/Repair.....	9-2

9-1. INTRODUCTION.

This chapter contains maintenance instructions for removing, replacing, repairing, installing, and adjusting final drive components authorized by the Maintenance Allocation Chart (MAC) at the Unit Maintenance level.

9-2. DRIVESHAFT REPLACEMENT/REPAIR.

This task covers:

- | | | |
|----------------|------------------------|-----------------|
| a. Removal | c. Cleaning/Inspection | e. Installation |
| b. Disassembly | d. Assembly | |

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Wrench, Torque (0-60 N•m)
(Item 12, Appendix B)

Materials/Parts

Cloth, Lint-Free (Item 6, Appendix C)
Grease, Bearing (Item 14, Appendix C)
Rags, Wiping (Item 19, Appendix C)

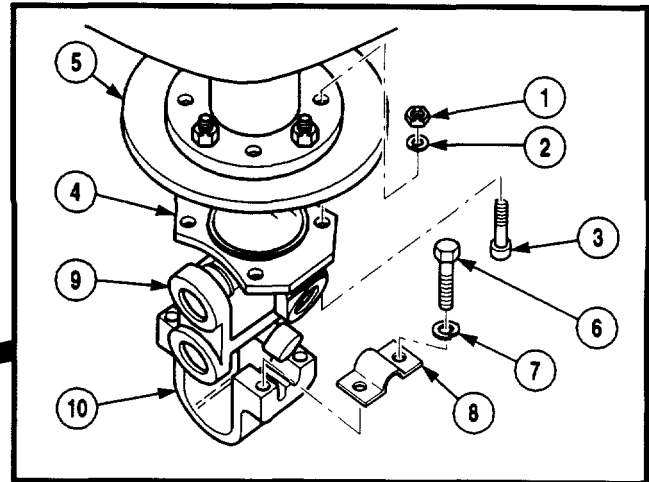
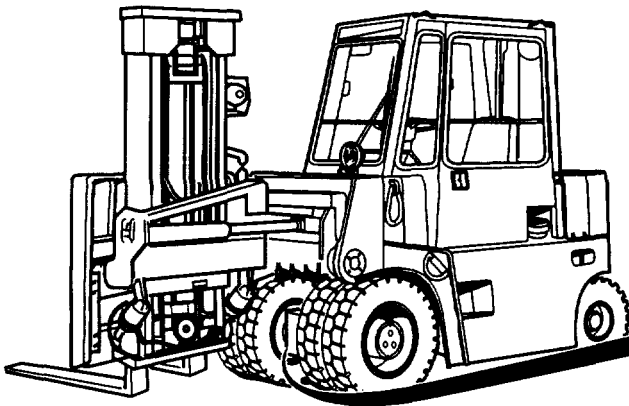
Materials/Parts - Continued

Solvent, Dry-cleaning (Item 20, Appendix C)
Clips (6)
Washer, Lock (4)
Washer, Lock (4)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Drive axle oil pump removed (Para10-3)

a. Removal.



NOTE

For removal of driveshaft, elevate front of forklift.

- (1) Remove four nuts (1), lock washers (2), screws (3), and driveshaft disk flange (4) from brake disc (5). Discard lock washers.
- (2) Remove four screws (6), lock washers (7), two clamps (8), and driveshaft (9) from transmission flange (10). Discard lock washers.

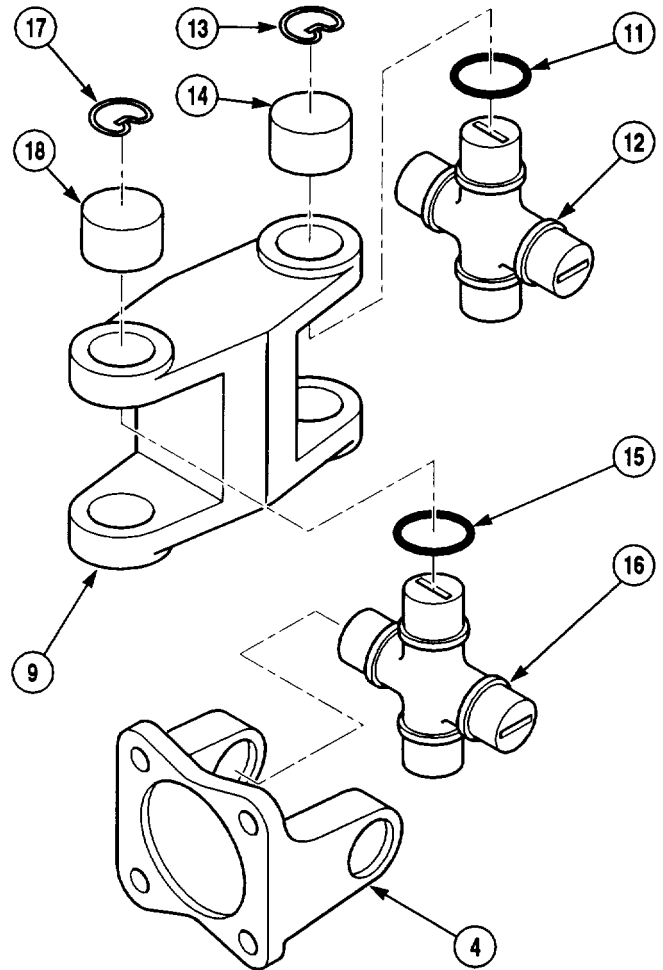
b. Disassembly.

- (1) Slide four grease seals (11) down onto universal joint (12).
- (2) Remove two clips (13) from driveshaft (9). Discard clips.

CAUTION

Be careful when removing bearing caps. Needle bearings may fall out and be damaged or lost.

- (3) Remove four bearing caps (14) from driveshaft (9) and universal joint (12).
- (4) Remove universal joint (12) from driveshaft (9).
- (5) Remove four grease seals (11) from universal joint (12). Discard grease seals.
- (6) Slide four grease seals (15) down onto universal joint (16).
- (7) Remove four clips (17) from driveshaft (9) and driveshaft flange disk (4).
- (8) Remove four bearing caps (18) from driveshaft (9) and driveshaft flange disk (4).
- (9) Remove driveshaft (9) from universal joint (16).
- (10) Remove universal joint (16) from driveshaft flange disk (4).
- (11) Remove four grease seals (15) from universal joint (16).



9-2. DRIVESHAFT REPLACEMENT/REPAIR (CONT).

c. Cleaning/Inspection.

WARNING

- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

- (1) Clean all metal parts with drycleaning solvent and wipe dry.
- (2) Do not allow drycleaning solvent to come in contact with rubber seals.
- (3) Inspect all parts for damage, cracks, burrs, and sharp edges.
- (4) Replace all damaged parts.

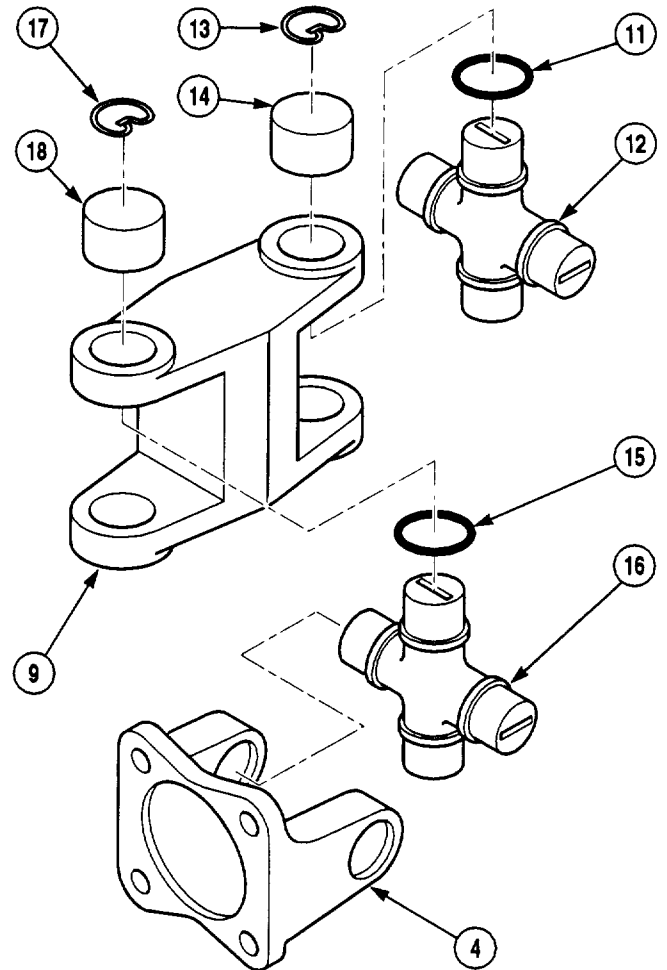
d. Assembly.

- (1) Position four grease seals (15) on universal joint (16).
- (2) Position universal joint (16) in driveshaft flange disk (4) and driveshaft (9).

CAUTION

Be careful when removing bearing caps. Needle bearings may fall out and be damaged or lost.

- (3) Apply grease to insides of four bearing caps (18) and install in driveshaft (9) and driveshaft flange disk (4).
- (4) Install four clips (17) on driveshaft (9) and driveshaft flange disk (4).
- (5) Slide four grease seals (15) into place.
- (6) Position four grease seals (11) on universal joint (12).
- (7) Position universal joint (12) in driveshaft (9).
- (8) Apply grease to insides of four bearing caps (14) and install in driveshaft (9) and on universal joint (12).
- (9) Install two clips (13) on driveshaft (9).
- (10) Slide four grease seals (11) into place.

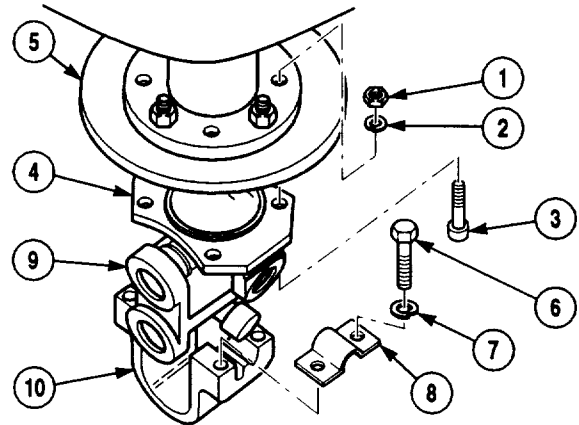


9-2. DRIVESHAFT REPLACEMENT/REPAIR (CONT).**e. Installation.**

- (1) Install driveshaft (9) on transmission flange (10) with two clamps (8), four lock washers (7), and four screws (6). Tighten screws to 18 lb-ft (25 N•m).
- (2) Install driveshaft disk flange (4) on brake disc (5) with four screws (3), lock washers (2), and nuts (1). Tighten nuts to 18 lb-ft (25 N•m).

NOTE**Follow-on Maintenance:**

- Install drive axle oil pump (Para 10-3).
- Remove wheel chocks

END OF TASK

**CHAPTER 10
AXLE MAINTENANCE**

Para	Contents	Page
10-1	Introduction	10-1
10-2	Drive Axle Oil Cooler Replacement/Repair	10-2
10-3	Drive Axle Oil Pump Replacement	10-7

10-1. INTRODUCTION.

This chapter contains maintenance instructions for removing, replacing, and installing axle components authorized by the Maintenance Allocation Chart (MAC) at the Unit Maintenance level.

10-2. DRIVE AXLE OIL COOLER REPLACEMENT/REPAIR.

This task covers:

- | | | |
|----------------|------------------------|-----------------|
| a. Removal | c. Cleaning/Inspection | e. Installation |
| b. Disassembly | d. Assembly | |

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

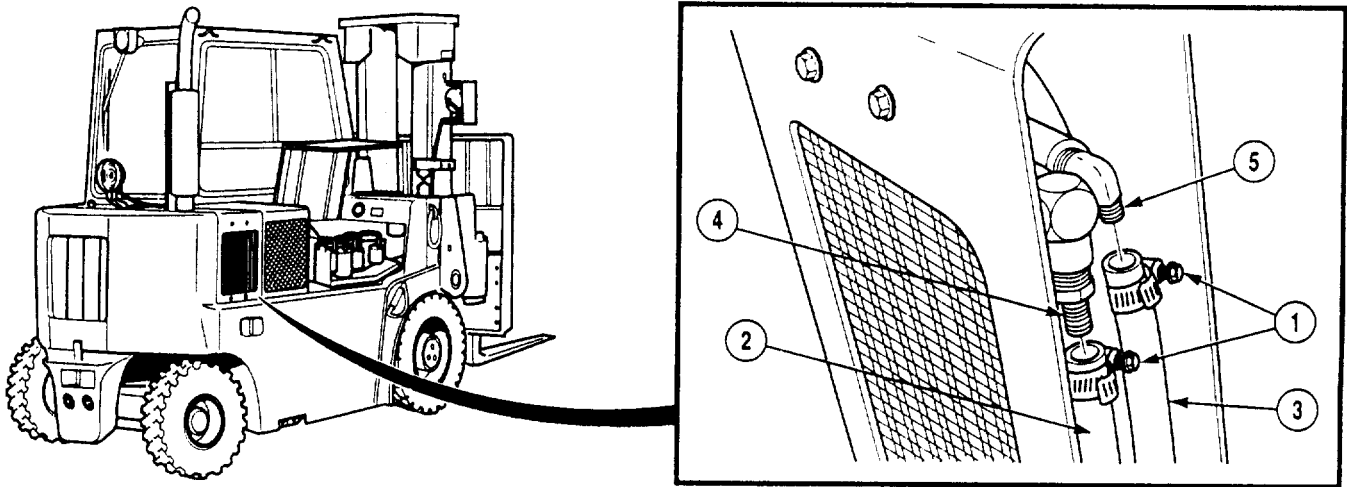
Materials / Parts

Cap and Plug Set (Item 5, Appendix C)
Solvent Dry-cleaning (Item 20, Appendix C)
Tags, Identification (Item 21, Appendix C)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Engine ventilation panel removed (Para 6-2)
Right-hand ventilation panel removed
(Para 6-3)

a. Removal.



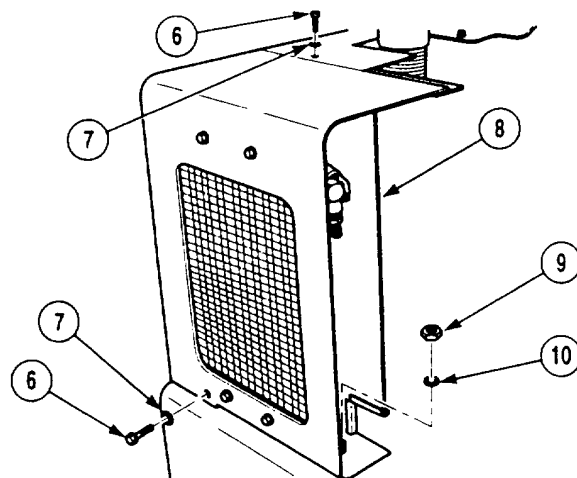
NOTE

- Tag and mark hose prior to removal.
- Cap and plug all hoses and fittings after removal.

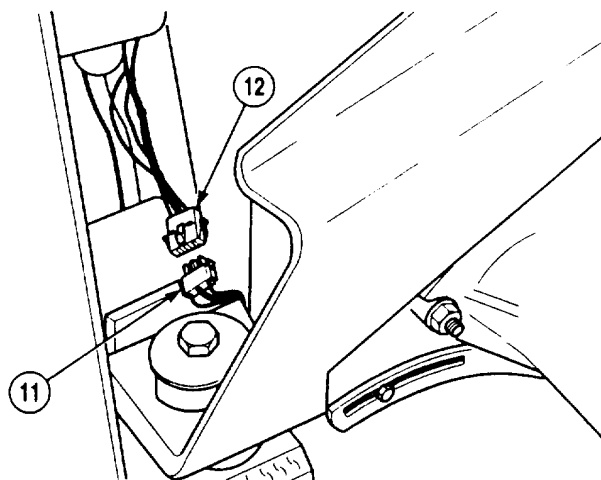
(1) Loosen two clamps (1) and remove hoses (2 and 3) from elbows (4 and 5).

(2) Remove two screws (6) and washers (7) from oil cooler assembly (8).

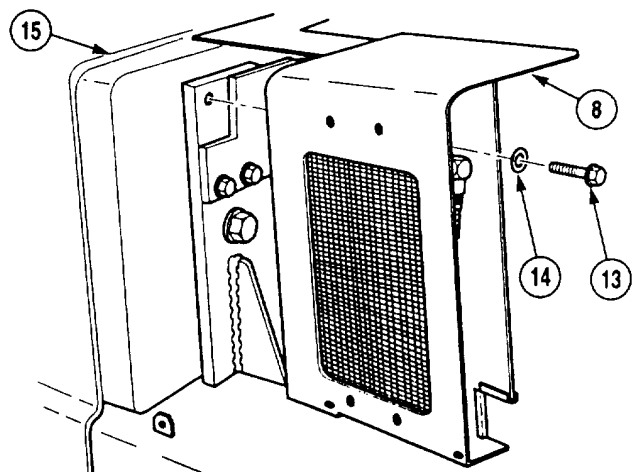
(3) Remove nut (9) and washer (10) from oil cooler assembly (8).



(4) Disconnect connector P17 (11) from connector S17 (12).



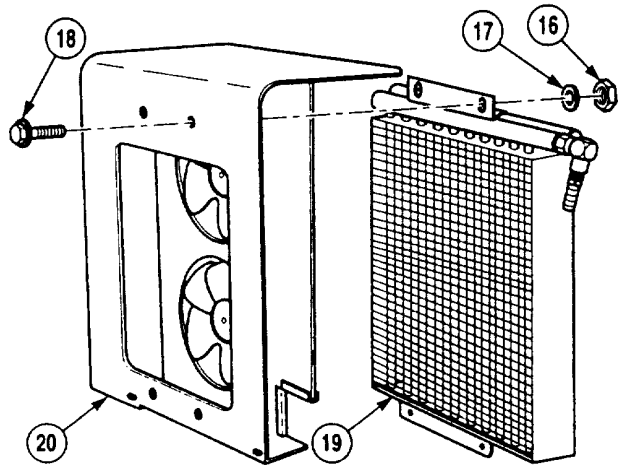
(5) Remove screw (13), washer (14) and oil cooler assembly (8) from fork lift (15).



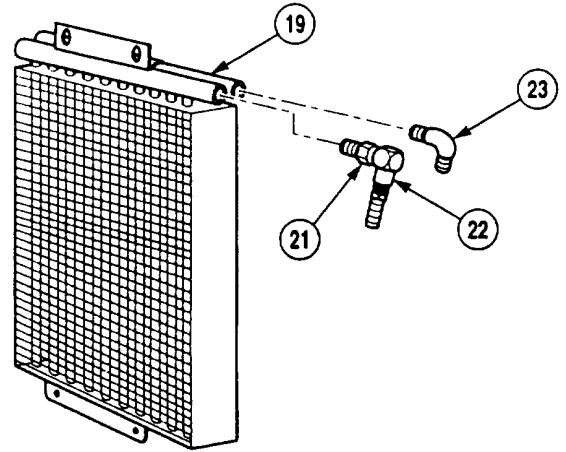
10-2. DRIVE AXLE OIL COOLER REPLACEMENT/REPAIR (CONT).

b. Disassembly.

- (1) Remove four nuts (16), washers (17), screws (18), and oil cooler (19) from panel (20).



- (2) Loosen fitting (21) and remove elbow (22) from oil cooler (19).
- (3) Remove elbow (23) from oil cooler (19).



c. Cleaning/Inspection.

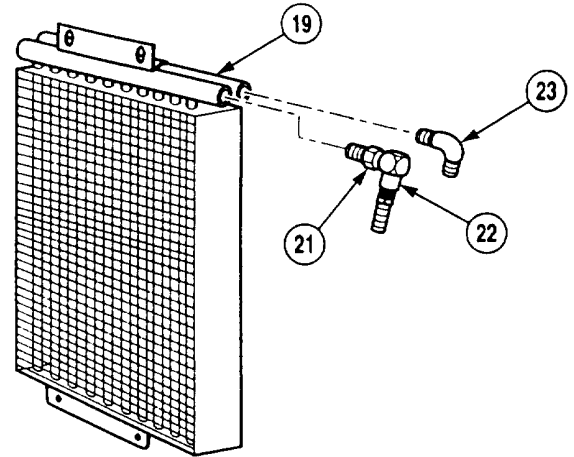
WARNING

- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

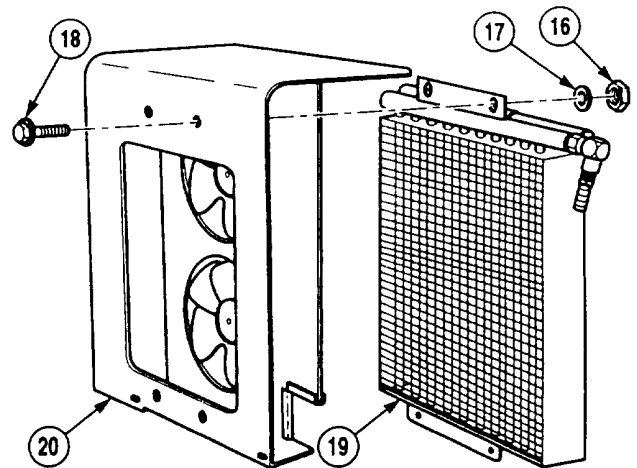
- (1) Clean sealing compound from four screws with drycleaning solvent. Allow to air dry.
- (2) Inspect all parts for cracks.
- (3) Replace damaged parts or notify supervisor.

d. Assembly.

- (1) Install elbow (23) in oil cooler (19).
- (2) Install elbow (22) in oil cooler (19) and tighten fitting (21).

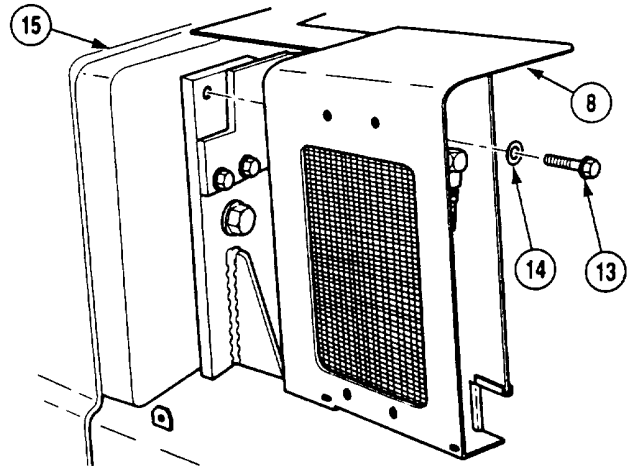


- (3) Install oil cooler (19) on panel (20) with four screws (18), washers (17), and nuts (16).



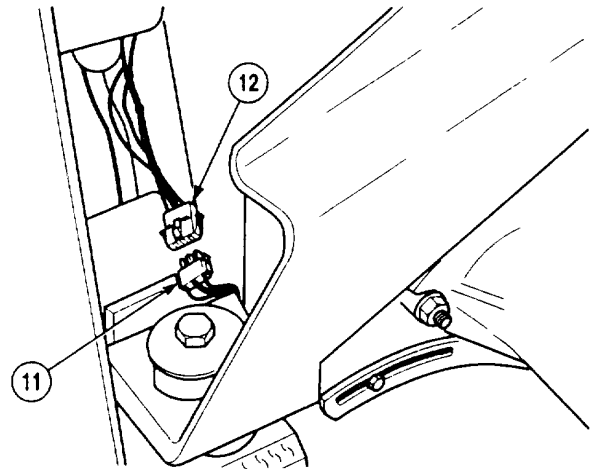
e. Installation.

- (1) Install oil cooler assembly (13) on forklift (15) with washer (14) and screw (13).

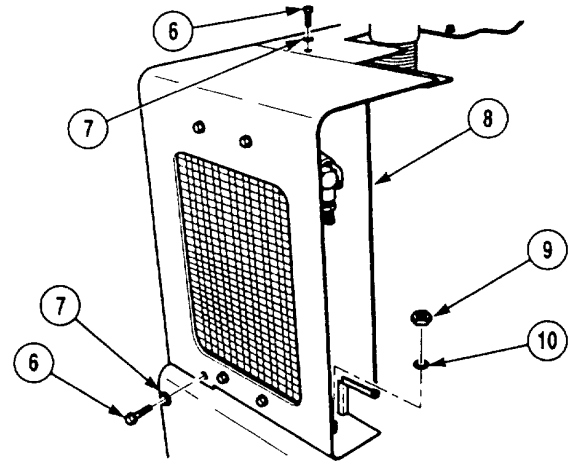


10-2. DRIVE AXLE OIL COOLER REPLACEMENT/REPAIR (CONT).

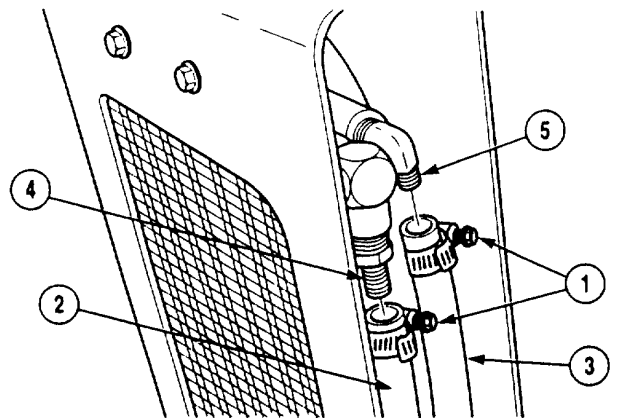
- (2) Connect connector S17 (12) to connector P17 (11).



- (3) Install washer (10) and nut (9) on oil cooler assembly (8).
- (4) Install two washers (7) and screws (6) on oil cooler assembly (8).



- (5) Install two hoses (2 and 3) on elbows (4 and 5) and tighten two clamps (1).



NOTE

Follow-on Maintenance:

- Install engine ventilation panel (Para 6-2).
- Install Right-hand ventilation panel (Para 6-3).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

10-3. DRIVE AXLE OIL PUMP REPLACEMENT.

This task covers:

a. Removal

b. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

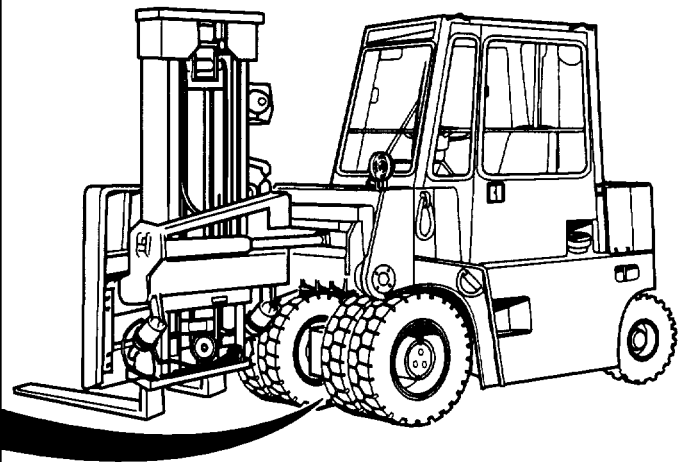
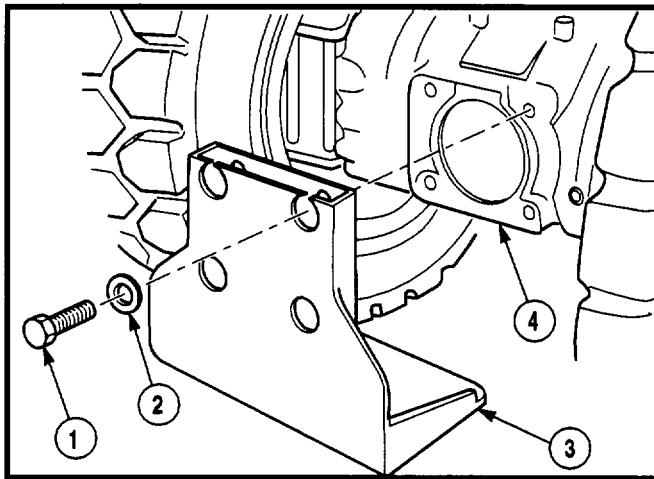
Materials/Parts

Cap and Plug Set (Item 5, Appendix C)
Tags, Identification (Item 21, Appendix C)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Mast side shifted to right
(TM 10-3930-669-10)
Mast pivoted open (TM 10-3930-669-10)

a. Removal.



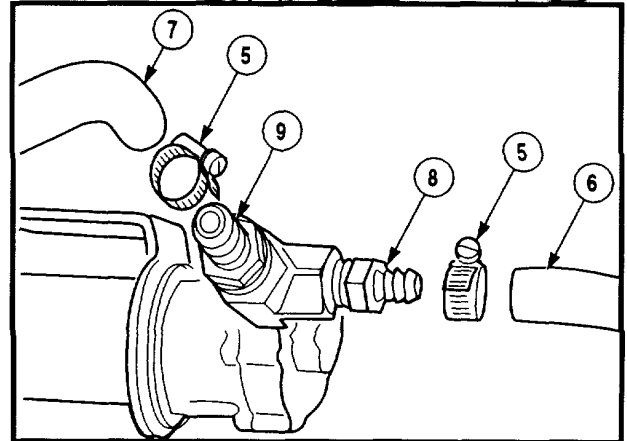
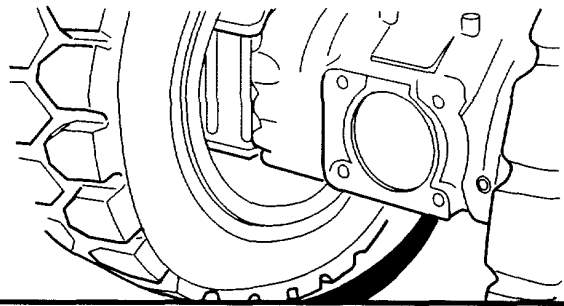
(1) Remove four screws (1), washers (2), and bracket (3) from drive axle housing (4).

10-3. DRIVE AXLE OIL PUMP REPLACEMENT (CONT).

NOTE

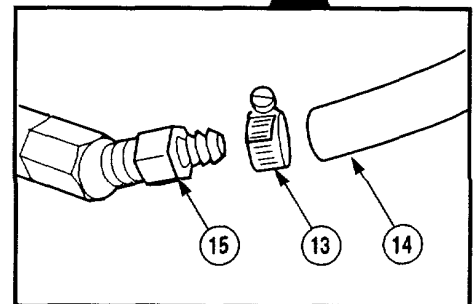
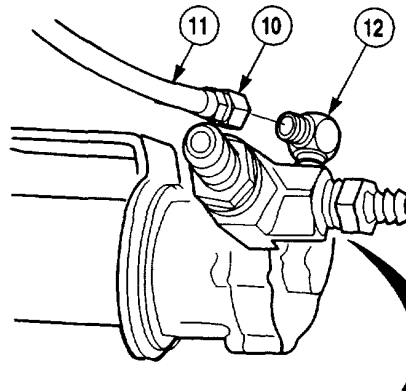
- Tag and mark all hoses prior to removal.
- Cap and plug all hoses after removal.

- (2) Remove two clamps (5) and hoses (6 and 7) from fittings (8 and 9).



- (3) Loosen nut (10) and remove hose (11) from elbow (12).

- (4) Remove clamp (13) and hose (14) from fitting (15).

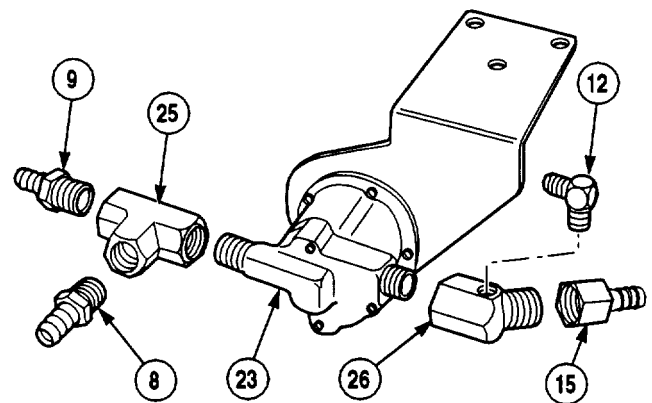
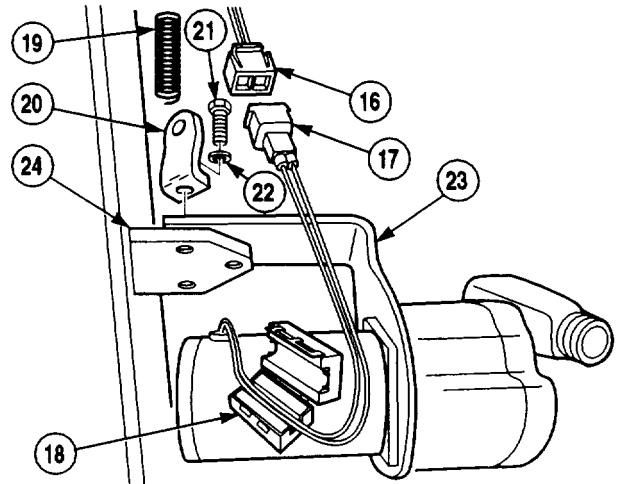


- (5) Disconnect connector P18 (16) from oil pump connector (17).
- (6) Remove noise filter (18) from oil pump connector (17) wires.

WARNING

Use care when removing springs. Springs are under spring tension and can act as projectiles when released and could cause severe eye injury.

- (7) Disconnect spring (19) from bracket (20).
- (8) Remove three screws (21), washers (22), bracket (20), and oil pump assembly (23) from forklift (24).
- (9) Remove fittings (8 and 9) from tee fitting (25).
- (10) Remove tee fitting (25) from oil pump assembly (23).
- (11) Remove fitting (15) and elbow (12) from elbow (26).
- (12) Remove elbow (26) from oil pump assembly (23).

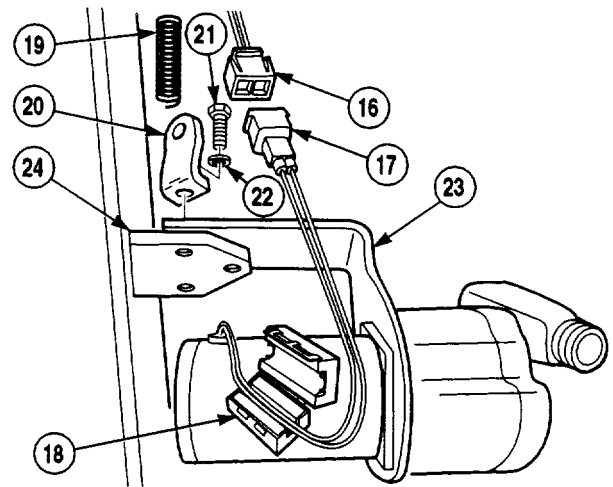


b. Installation.

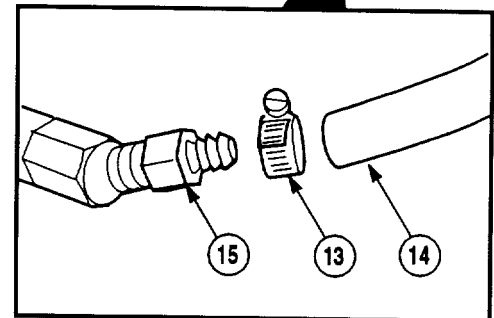
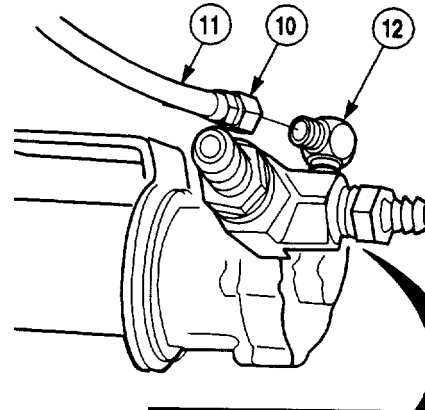
- (1) Install elbow (26) on oil pump assembly (23).
- (2) Install elbow (12) and fitting (15) on elbow (26).
- (3) Install tee fitting (25) on oil pump assembly (23).
- (4) Install fittings (8 and 9) on tee fitting (25).

10-3. DRIVE AXLE OIL PUMP REPLACEMENT (CONT).

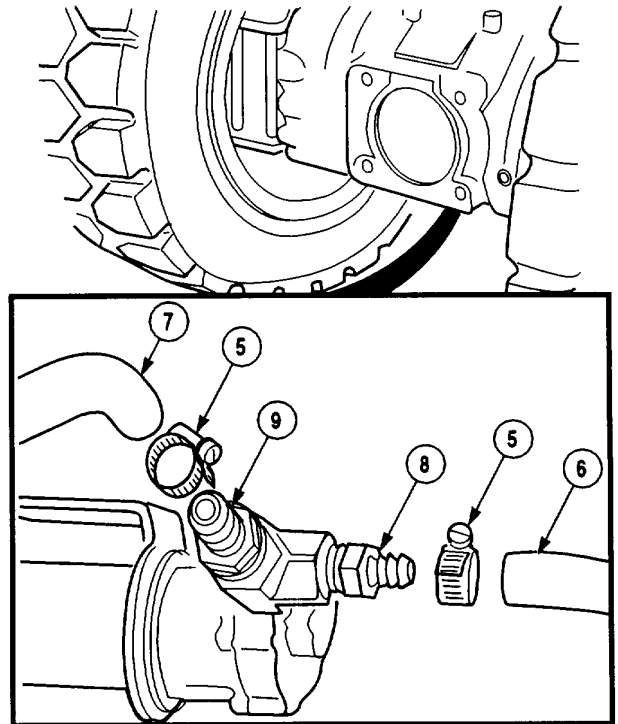
- (5) Install oil pump assembly (23) and bracket (20) on forklift (24) with three washers (22) and screws (21).
- (6) Connect spring (19) to bracket (20).
- (7) Install noise filter (18) on oil pump connector (17) wires.
- (8) Connect connector P18 (16) to oil pump connector (17).



- (9) Install hose (14) on fitting (15) with clamp (13).
- (10) Install nut (10) and hose (11) on elbow (12).



- (11) Install hoses (6 and 7) on fittings (8 and 9) with clamps (5).

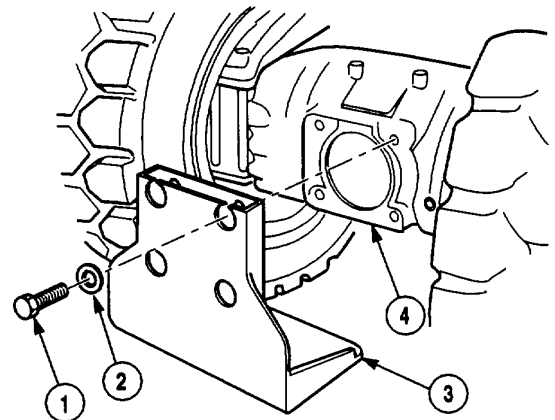


- (12) Install bracket (3) on drive axle housing (4) with four washers (2) and screws (1).

NOTE

Follow-on Maintenance:

- Mast in stowed position (TM 10-3930-669-10).
- Fill drive axle (LO 10-3930-669-12).
- Remove wheel chocks (TM 10-3930-669-10).



END OF TASK

CHAPTER 11

BRAKE SYSTEM MAINTENANCE

Para	Contents	Page
11-1	Introduction	11-1
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11-3	Parking Brake Cable Replacement/Adjustment.....	11-5
11-4	Master Cylinder Replacement	11-10
11-5	Brake Lines Replacement.....	11-13
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11-1. INTRODUCTION.

This chapter contains maintenance instructions for removing, replacing, repairing, installing, and adjusting brake system components authorized by the Maintenance Allocation Chart (MAC) at the Unit Maintenance level.

11-2. PARKING BRAKE HANDLE ASSEMBLY REPLACEMENT.

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Wrench, Torque (0 to 175 lb-ft [0-237 N-m])
(Item 2, Appendix B)

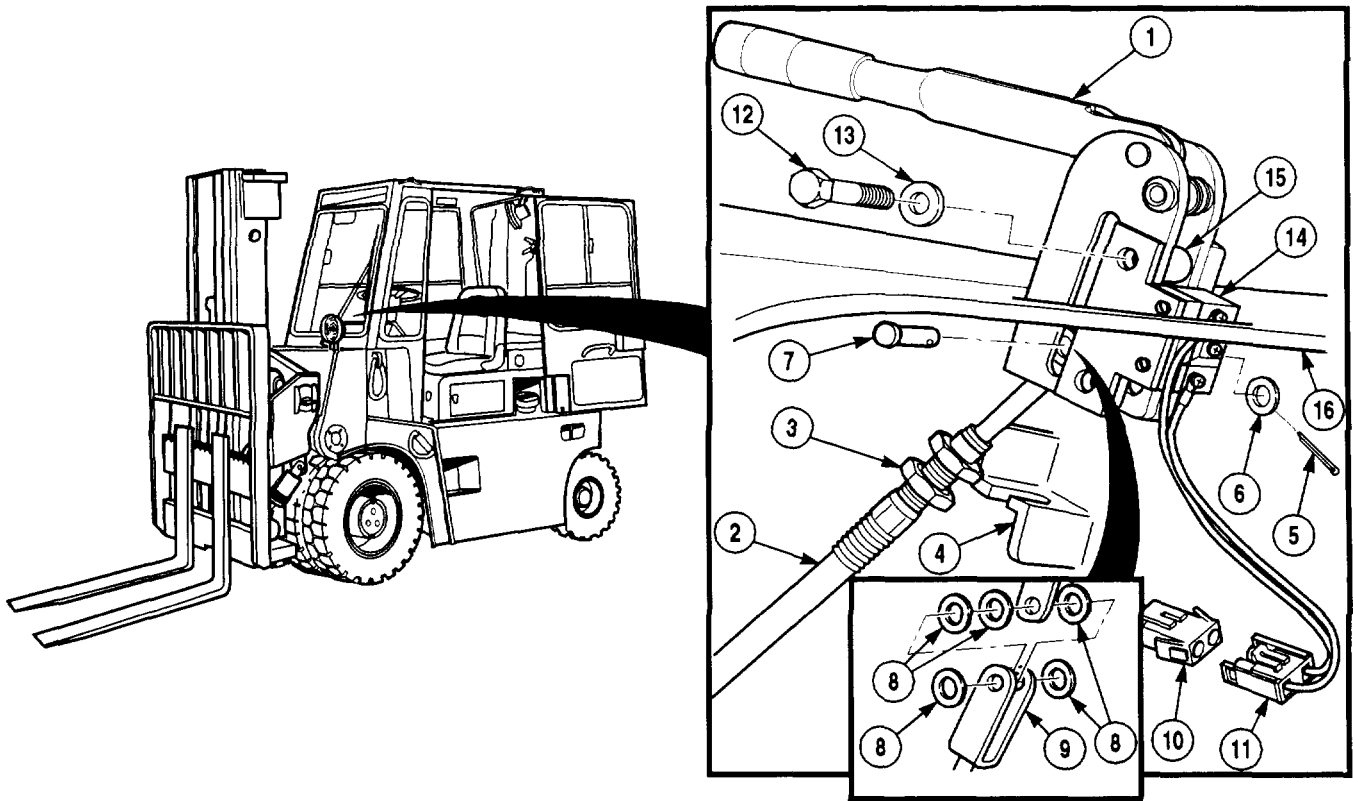
Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)

Materials/Parts

Pin, Retaining

a. Removal.



- (1) Press parking brake handle (1) down to release tension on parking brake cable (2).
- (2) Loosen two nuts (3) and remove parking brake cable (2) from cab frame bracket (4).
- (3) Remove retaining pin (5), washer (6), pin (7), five washers (8), and clevis (9) from parking brake handle assembly (1).
- (4) Disconnect connector P20 (10) from parking brake interlock switch connector (11).

NOTE

Parking brake handle assembly spacers may fall out of parking brake handle assembly.

- (5) Remove two screws (12), washers (13), parking brake interlock switch (14), two spacers (15), and parking brake handle assembly (1) from dash frame (16).

11-2. PARKING BRAKE HANDLE ASSEMBLY REPLACEMENT (CONT).**b. Installation.****CAUTION**

Cable nut may slip over pin during installation. Cable nut must be below pin before installing parking brake assembly. Failure to do so will result in damage to parking brake interlock switch.

NOTE

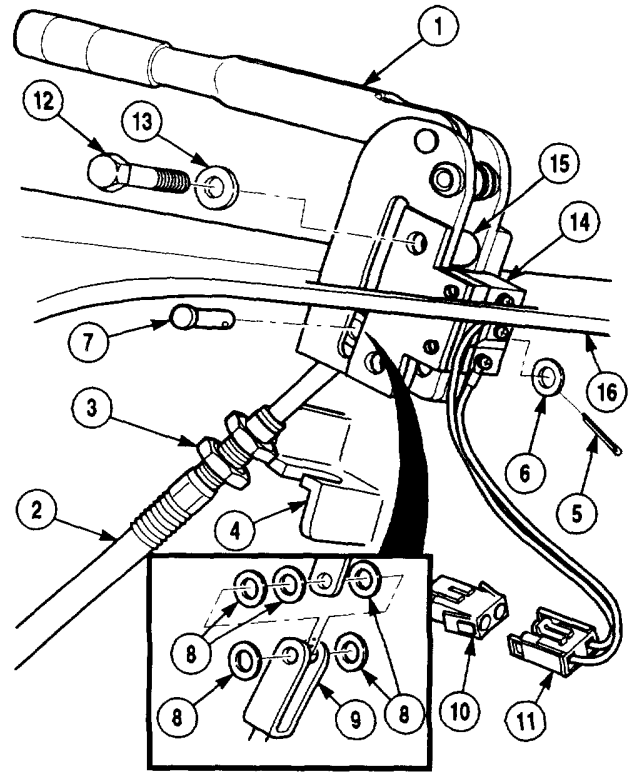
Ensure to slip parking brake cable (2) on dash frame mount before installing hardware.

- (1) Install parking brake handle assembly (1) on dash frame (16) with two spacers (15), parking brake interlock switch (14), two washers (13), and screws (12). Tighten screws to 36 lb-ft (49 N.m).
- (2) Connect parking brake interlock switch connector (11) on connector P20 (10).
- (3) Install clevis (9) on parking brake handle assembly (1) with five washers (8), pin (7), washer (6), and retaining pin (5).
- (4) Place parking brake cable (2) in cab frame bracket (4) and tighten two nuts (3).
- (5) Turn parking brake handle assembly (1) handle to adjust tension on parking brake cable (2).
- (6) Place parking brake handle assembly (1) handle in the vertical position.

NOTE**Follow-on Maintenance:**

- Remove wheel chocks (TM 10-3930-669-10).
- Adjust parking brake (TM 10-3930-669-10).

END OF TASK



11-3. PARKING BRAKE CABLE REPLACEMENT/ADJUSTMENT.

This task covers:

- | | |
|------------------------|-----------------|
| a. Removal | c. Installation |
| b. Cleaning/Inspection | d. Adjustment |

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Wrench, Torque (0 to 175 lb-ft [0-237 N-m])
(Item 2, Appendix B)

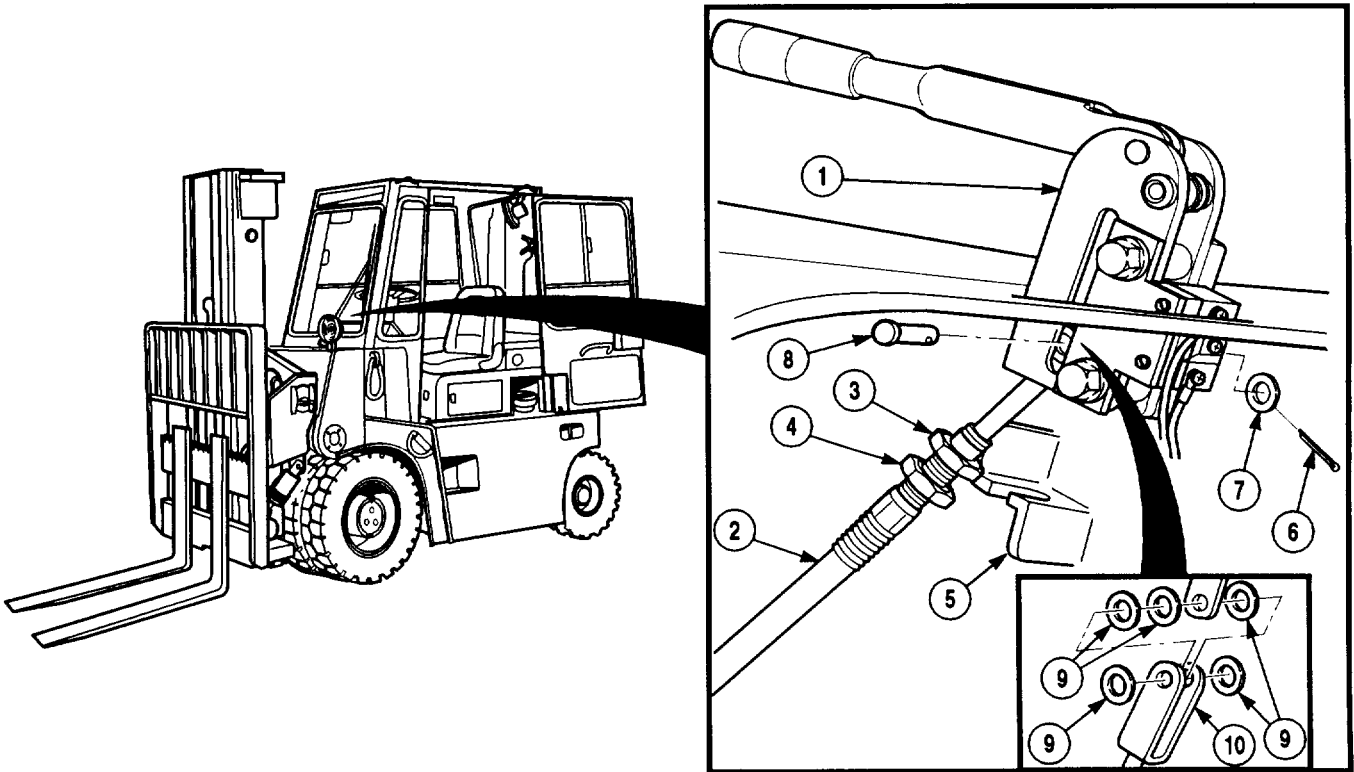
Materials/Parts

Rags, Wiping (Item 19, Appendix C)
Solvent, Dry-cleaning (Item 20, Appendix C)

Equipment Condition

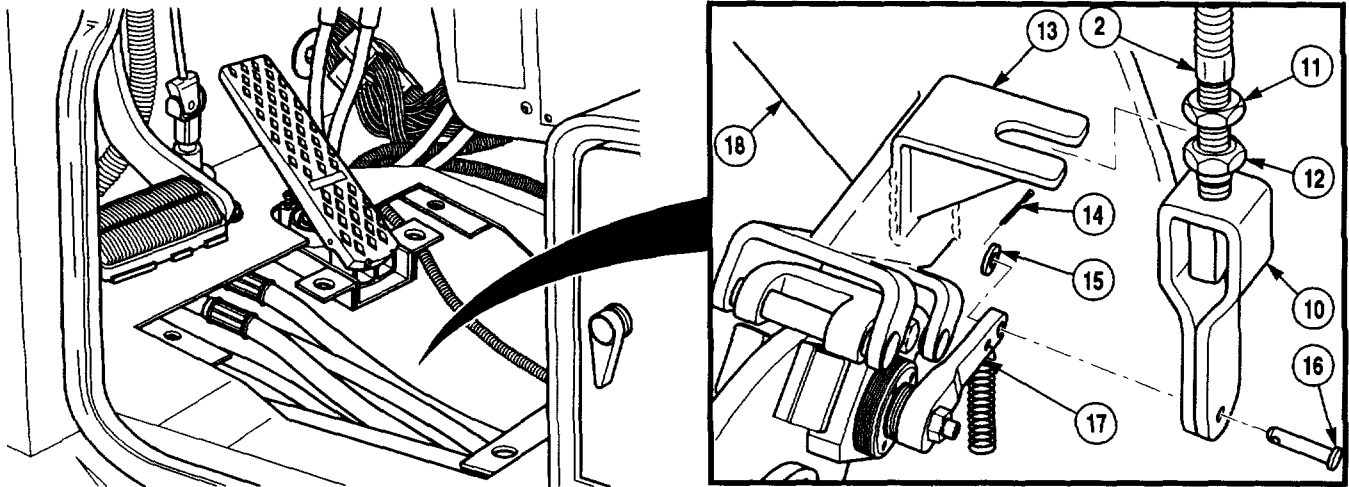
Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Cab door opened (TM 10-3930-669-10)
Batteries disconnected (Para 7-48)
Instrument panel removed (Para 7-8)

a. Removal



- (1) Place parking brake handle assembly (1) handle in forward position to relieve tension on parking brake cable (2).
- (2) Loosen two nuts (3 and 4) and remove parking brake cable (2) from cab frame bracket (5).
- (3) Remove retaining pin (6), washer (7), pin (8), four washers (9), and clevis (10) from parking brake handle assembly (1).

11-3. PARKING BRAKE CABLE REPLACEMENT/ADJUSTMENT (CONT).



- (4) Loosen two nuts (11 and 12) and remove parking brake cable (2) from bracket (13).
- (5) Remove retaining pin (14), washer (15), pin (16) and parking brake cable (2) from brake lever (17).
- (6) Remove parking brake cable (2) from forklift cab frame (18).

b. Cleaning/Inspection.

WARNING

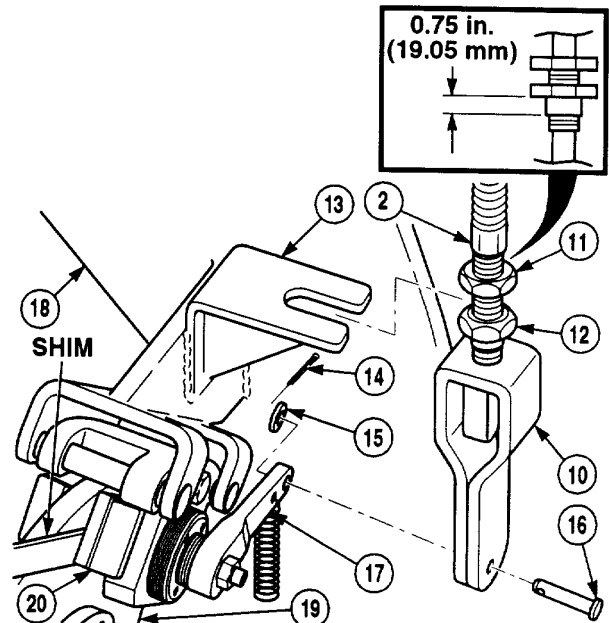
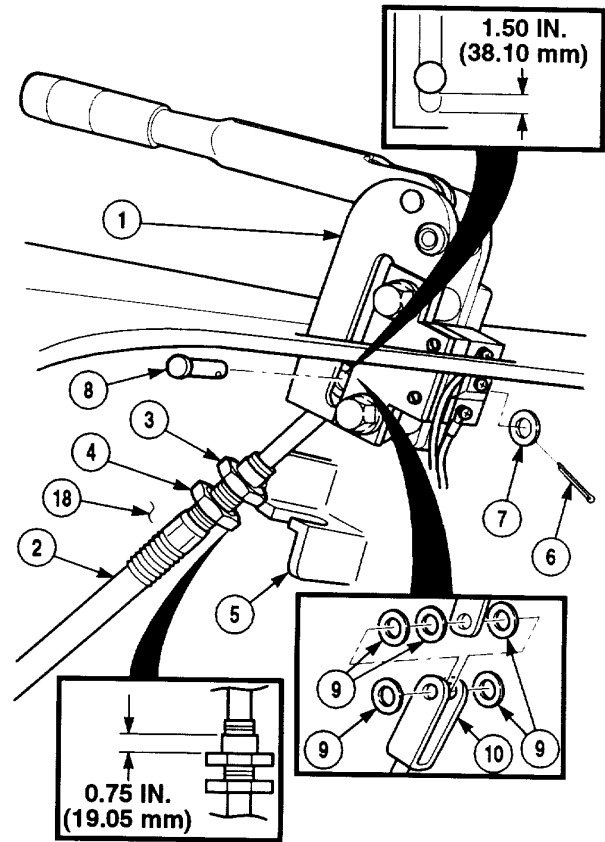
- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

- (1) Clean all metal parts with drycleaning solvent.
- (2) Inspect all parts for breaks, cracks, burrs, and sharp edges.
- (3) Inspect all bearings for wear, scoring, and cracks.
- (4) Replace all damaged parts.

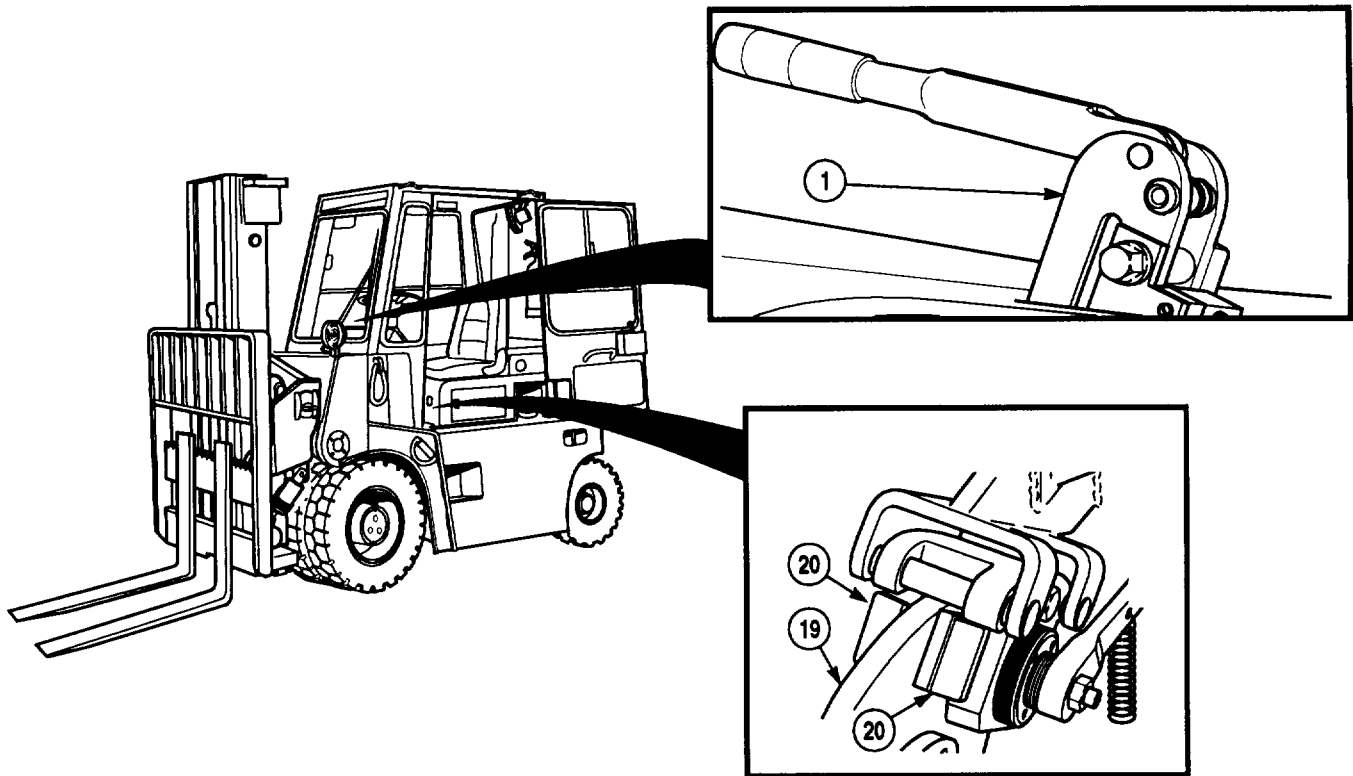
11-3. PARKING BRAKE CABLE REPLACEMENT/ADJUSTMENT (CONT).

c. Installation.

- (1) Place parking brake cable (2) in forklift cab frame (18).
- (2) Adjust top of nut (3) 0.75 in. (19.05 mm) from top thread of cable (2).
- (3) Install clevis (10) on parking brake handle assembly (1) with four washers (9), pin (8), washer (7), and retaining pin (6).
- (4) Place parking brake cable (2) in cab frame bracket (5) and tighten nut (4).
- (5) Place 0.031 in. (0.794 mm) shim between rotor (19) and front brake pad (20).
- (6) Place parking brake cable (2) in bracket (13).
- (7) Install parking brake cable (2) on brake lever (17) with pin (16), washer (15), and retaining pin (14).
- (8) Gently remove slack in cable (2) by hand tightening nut (11). Tighten nut (12).
- (9) Remove shim.



d. Adjustment.



(1) Apply parking brake.

(2) Turn parking brake handle (1) until brake pads (20), are tight against rotor (19).

NOTE

Follow-on Maintenance:

- Install instrument panel (Para 7-8).
- Connect batteries (Para 7-48).
- Close cab door (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

11-4. MASTER CYLINDER REPLACEMENT.

This task covers:

- a. Removal b. Cleaning/Inspection c. Installation

INITIAL SETUP

Tools and Special Tools

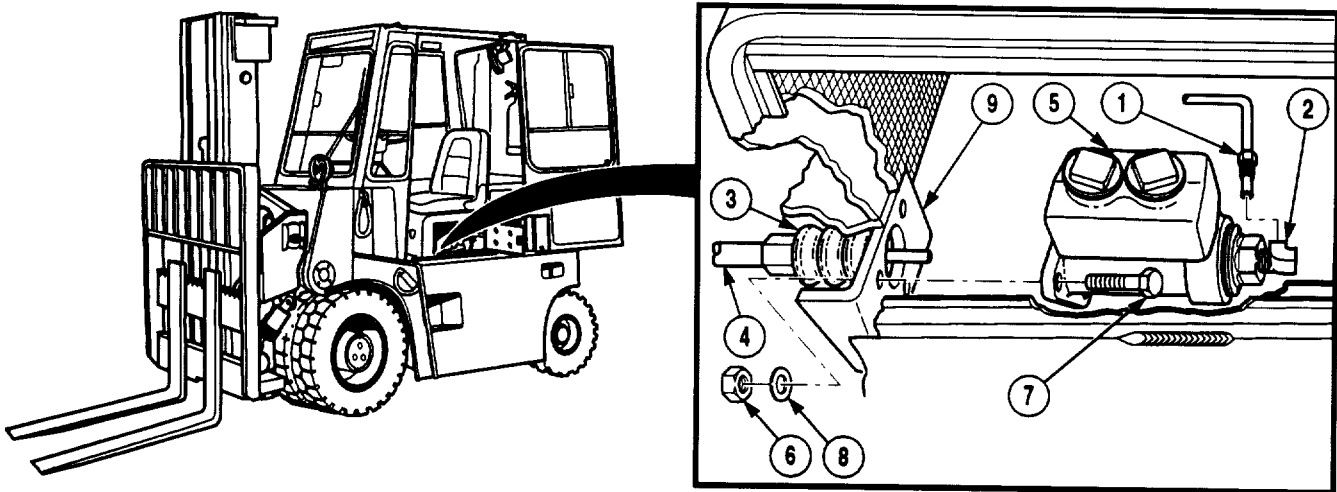
Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Wrench, Torque (0 to 175 lb-ft [0-237 N-m])
(Item 2, Appendix B)

Materials /Parts

Cap and Plug Set (Item 5, Appendix C)
Solvent, Drycleaning (Item 20, Appendix C)
Washer, Lock (2)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Cab floor plate removed (Para 15-12)
Master cylinder pressure switch removed (Para 7-17)



WARNING

Adhesives, solvents, and sealing compounds can burn easily, can give off harmful vapors, and are harmful to skin and clothing. To avoid injury or death, keep away from open fire and use in a well-ventilated area. If adhesive, solvent, or sealing compound gets on skin or clothing, wash immediately with soap and water.

NOTE

Cap and plug all lines and fittings when disconnected.

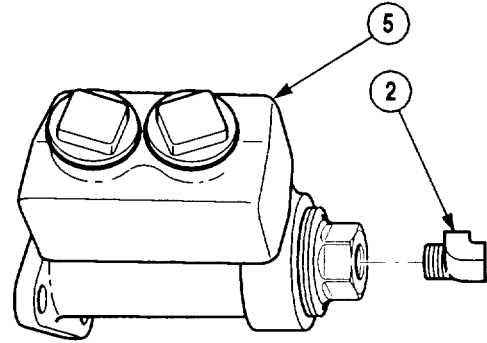
- (1) Remove fitting (1) from fitting (2).
- (2) Separate bellows (3), with linkage (4), from master cylinder (5).
- (3) Remove three screws (7), nuts (6), and washers (8), and master cylinder (5) from bracket (9).

- (4) Place master cylinder (5) on clean work surface.

NOTE

Note position of fitting prior to removal.

- (5) Remove fitting (2) from master cylinder (5).



b. Cleaning/ Inspection

WARNING

- Dry-cleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I dry-cleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

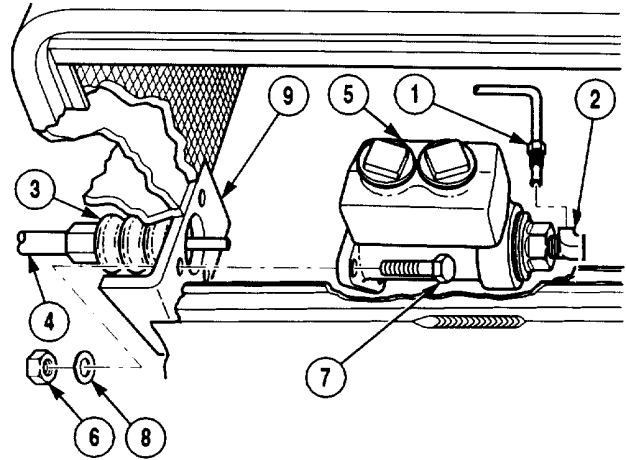
- (1) Clean all parts with dry-cleaning solvent.
- (2) Do not allow drycleaning solvent to come in contact with rubber parts.
- (3) Inspect all parts for breaks, cracks, burrs, and sharp edges.
- (4) Replace all damaged parts.

c. Installation.

- (1) Install fitting (2) in master cylinder (5) as noted during removal.

11-4. MASTER CYLINDER REPLACEMENT (CONT).

- (2) Aligning linkage (4) in master cylinder (5), install master cylinder on bracket (9) with three screws (7), washers (8), and nuts (6). Tighten screws to 30 lb-ft (41 N•m).
- (3) Install bellows (3) on master cylinder (5).
- (4) Install fitting (1) in fitting (2).



NOTE

Follow-on Maintenance:

- Install master cylinder pressure switch (Para 7-17).
- Fill master cylinder with fluid (TM 10-3930-669-12).
- Bleed brake system (Para 11-8).
- Install cab floor plate (Para 15-12).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

11-5. BRAKE LINES REPLACEMENT.

This task covers:

- a. Removal b. Cleaning/Inspection c. Installation

INITIAL SETUP*Tools and Special Tools*

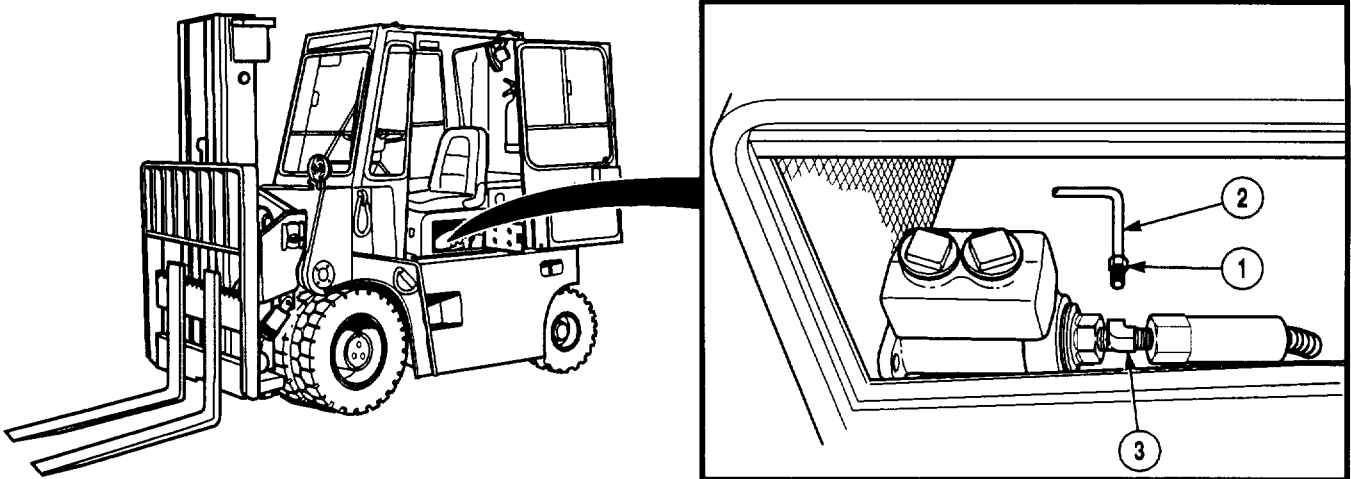
Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Filler and Bleeder, Hydraulic System
(Item 2, Appendix B)

Materials/Parts

Cap and Plug Set (Item 5, Appendix C)
Fluid, Brake (Item 8, Appendix C)
Solvent, Drycleaning (Item 20, Appendix C)
Tags, Identification (Item 21, Appendix C)
Washer, Lock

Equipment Condition

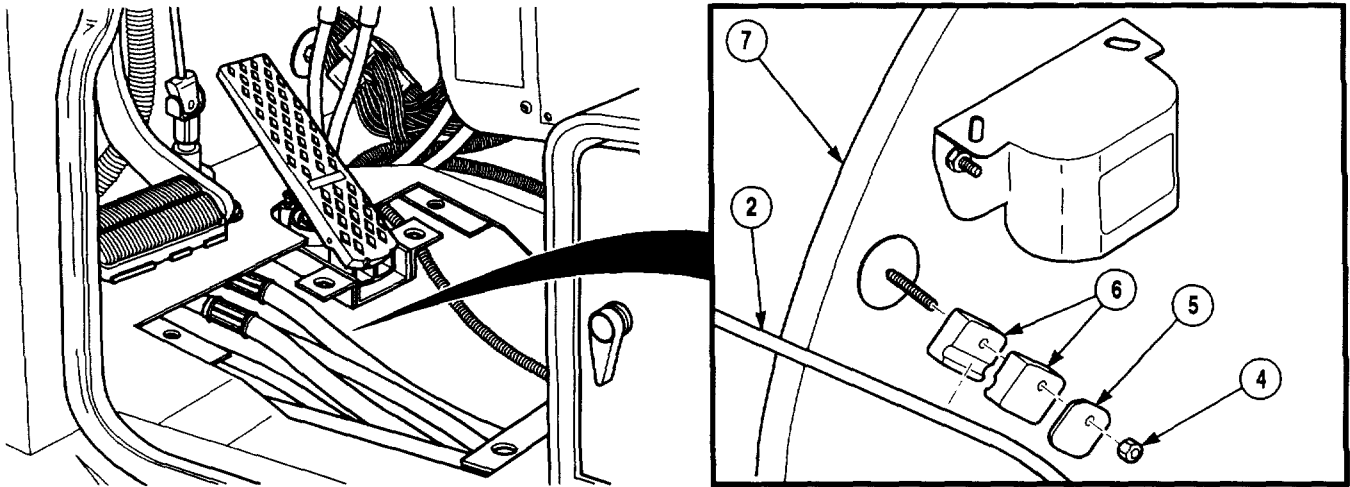
Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Cab door opened (TM 10-3930-669-10)
Cab engine access cover open
(TM 10-3930-669-10)
Mast side shifted to right
(TM 10-3930-669-10)
Mast pivoted open (TM 10-3930-669-10)
Cab floor plate removed (Para 15-12)

a. Removal**NOTE**

- Cap and plug all lines and fittings when disconnected.
- Tag and mark all lines and fittings.
- Inspect all hoses, lines, and fittings for cracks, bends, nicks, dents, stripping threads, and cuts. Replace all damaged parts.

(1) Loosen fitting (1) and remove brake line (2) from fitting (3).

11-5. BRAKE LINES REPLACEMENT (CONT).



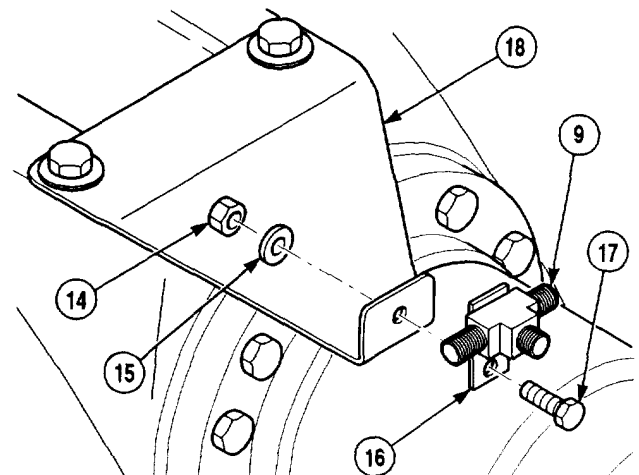
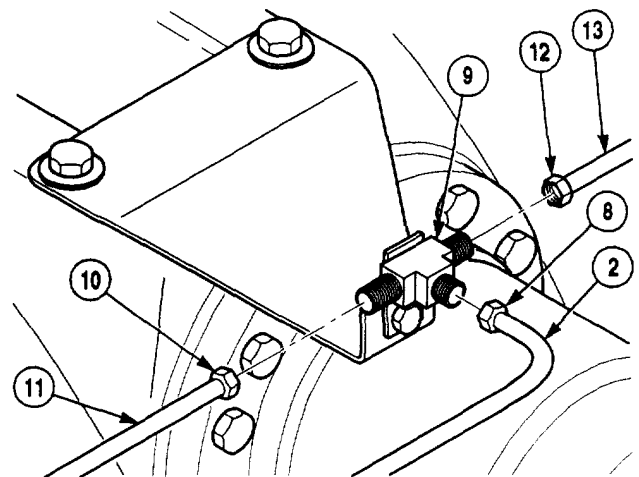
(2) Remove nut (4), clamp plate (5), clamp (6), and brake line (2) from fork lift (7).

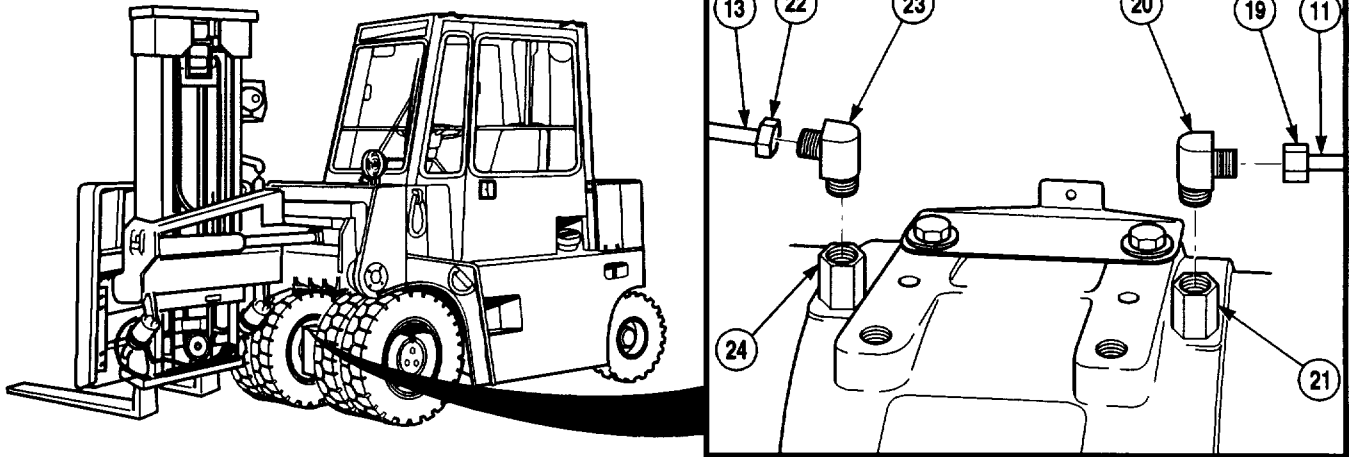
(3) Loosen fitting (8) and remove brake line (2) from tee fitting (9).

(4) Loosen fitting (10) and remove brake line (11) from tee fitting (9).

(5) Loosen fitting (12) and remove brake line (13) from tee fitting (9).

(6) Remove nut (14), washer (15), plate (16), tee fitting (9), and screw (17) from bracket (18).





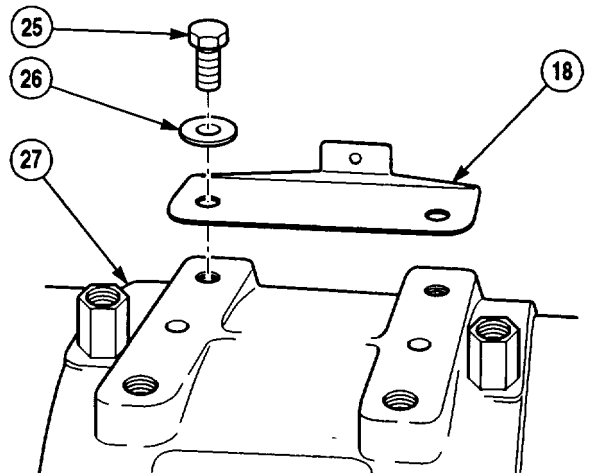
(7) Loosen fitting (19) and remove brake line (11) from fitting (20).

(8) Remove fitting (20) from drive axle fitting (21).

(9) Loosen fitting (22) and remove brake line (13) from fitting (23).

(10) Remove fitting (23) from drive axle fitting (24).

(11) Remove two screws (25), washers (26), and bracket (18) from drive axle (27).



11-5. BRAKE LINES REPLACEMENT (CONT).

b. Cleaning/ Inspection

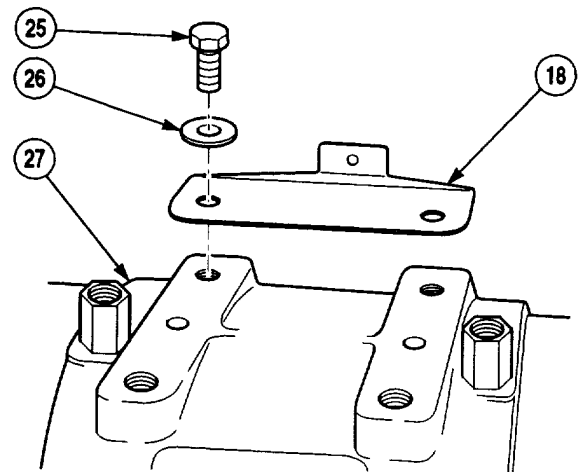
WARNING

- Dry-cleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I dry-cleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

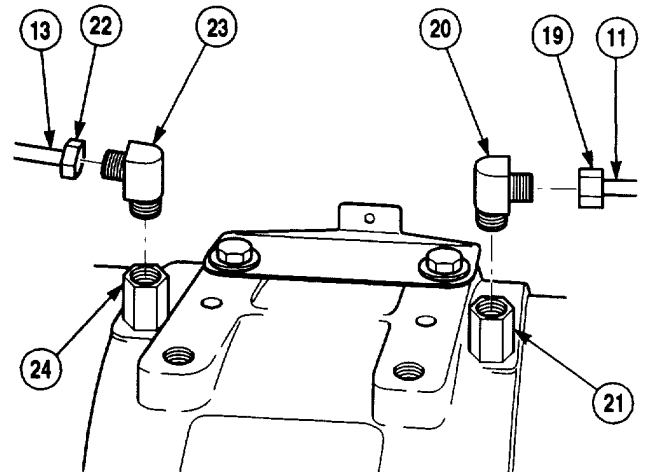
- (1) Clean all metal parts with dry-cleaning solvent.
- (2) Inspect all parts for breaks, cracks, burrs, and sharp edges.
- (3) Replace all damaged parts.

c. Installation.

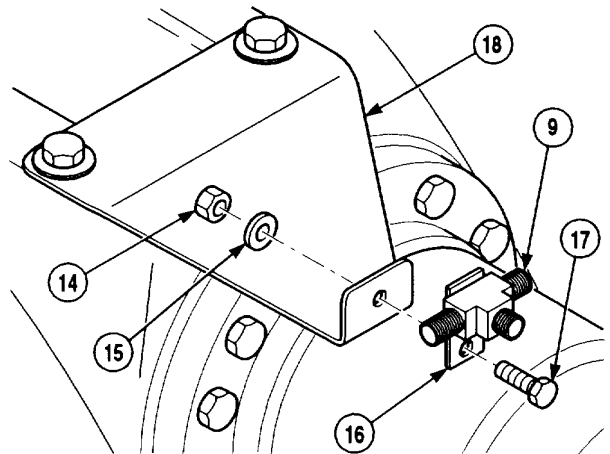
- (1) Install bracket (18) on drive axle (27) with two washers (26) and screws (25).



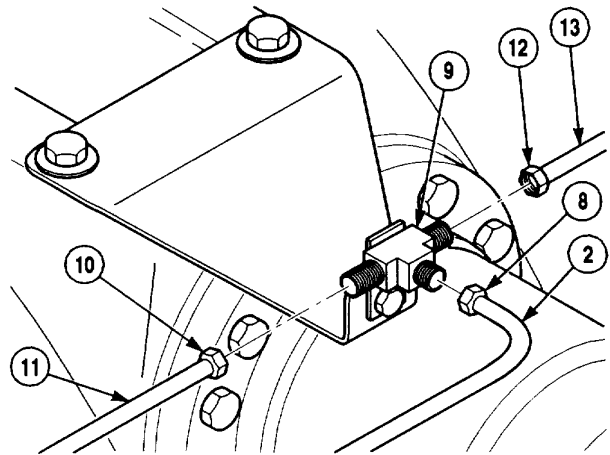
- (2) Install fitting (23) on drive axle fitting (24).
- (3) Install brake line (13) on fitting (23) and tighten fitting (22).
- (4) Install fitting (20) on drive axle.
- (5) Install brake line (11) on fitting (20) and tighten fitting (19).



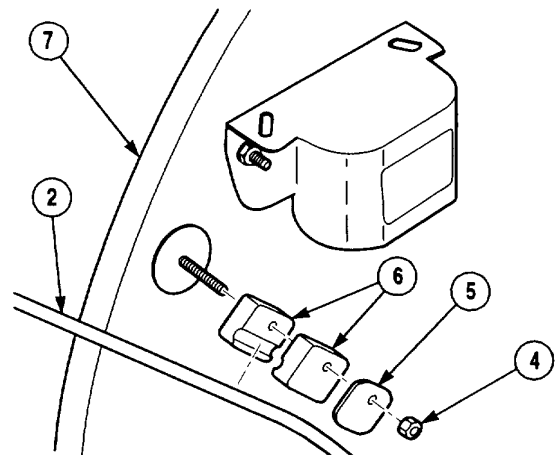
- (6) Install plate (16) and tee fitting (9) on bracket (18) with screw (17), washer (15), and nut (14).



- (7) Install brake line (13) on tee fitting (9) and tighten fitting (12).
- (8) Install brake line (11) on tee fitting (9) and tighten fitting (10).
- (9) Install brake line (2) on tee fitting (9) and tighten fitting (8).

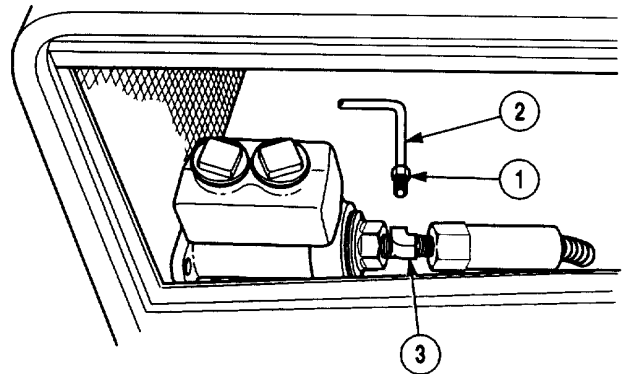


- (10) Install brake line (2) and clamp (6) on fork lift (7) with clamp plate (5) and nut (4).



11-5. BRAKE LINES REPLACEMENT (CONT).

- (11) Install brake line (2) on fitting (3) and tighten fitting (1).



NOTE

Follow-on Maintenance:

- Bleed air from brakes (Para 11-8).
- Install cab floor plate (Para 15-12).
- Mast moved to stowed position (TM 10-3930-669-10).
- Close engine access cover (TM 10-3930-669-10).
- Close cab door (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

11-6. BRAKE PEDAL AND LINKAGE REPLACEMENT/ADJUSTMENT.

This task covers:

- | | |
|------------------------|-----------------|
| a. Removal | c. Installation |
| b. Cleaning/Inspection | d. Adjustment |

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Wrench, Torque (0 to 175 lb-ft [0-237 N•m])
(Item 2, Appendix B)

Materials /Parts

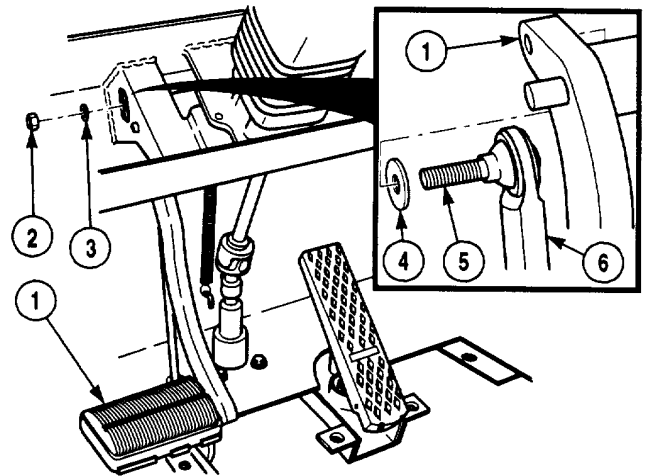
Rags, Wiping (Item 19, Appendix C)
Solvent, Dry-cleaning (Item 20, Appendix C)
Bushing, Plastic (2)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Cab door opened (TM 10-3930-669-10)
Cab floor plate removed (Para 15-12)
Steering pump partially removed
(Para 15-12)

a. Removal.

- (1) Apply slight pressure to brake pedal (1) and remove nut (2), washer (3), washer (4), and bolt (5) from rod fitting (6).

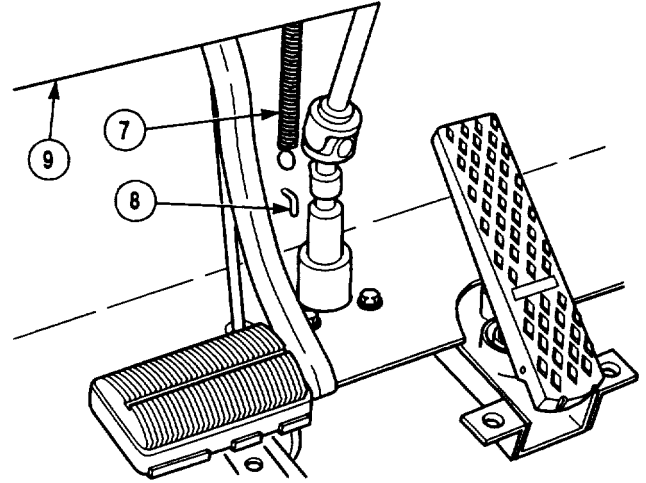


11-6. BRAKE PEDAL AND LINKAGE REPLACEMENT/ADJUSTMENT (CONT).

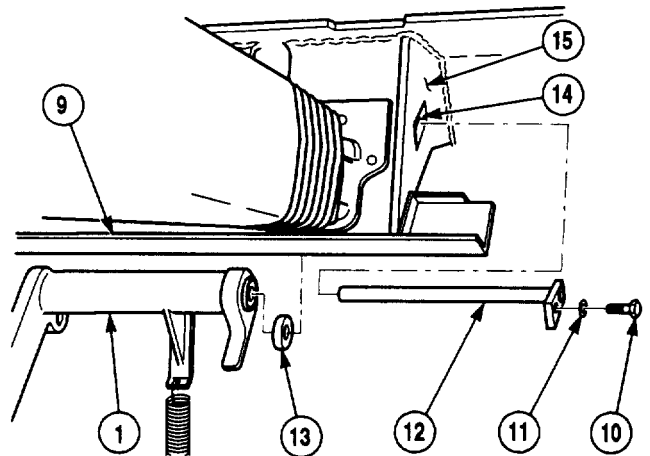
WARNING

Use care when removing spring. Spring is under tension and can act as a projectile if released and could cause injury to personnel.

- (2) Remove lower end of spring (7) from hook (8) located on dash frame (9).



- (3) Remove screw (10), washer (11), pin (12), and brake pedal (1) from dash frame (9).
- (4) Remove two bearings (13) from dash frame (9).
- (5) Remove two bushings (14) from console frame (15).

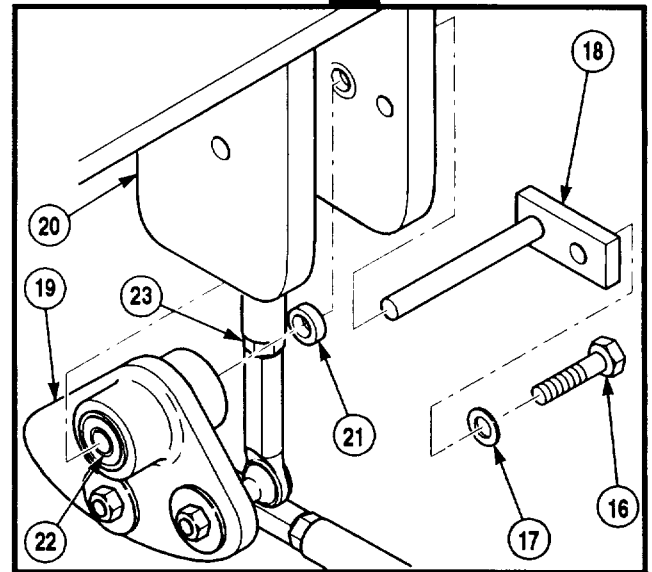
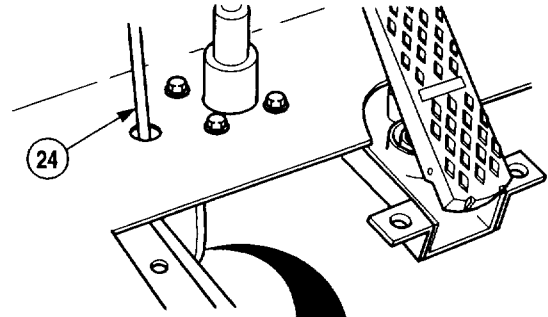


- (6) Loosen nut (23) and unscrew rod (24).
- (7) Remove screw (16), washer (17), pin (18), and pivot (19) from cab frame (20).

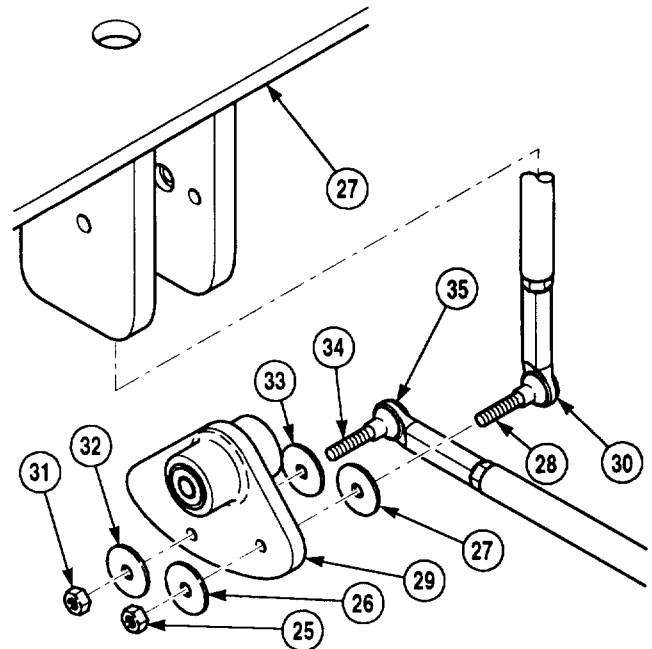
NOTE

The remaining linkage can be lifted from the forklift after performing Step (10). It slides out of master cylinder with bellows attached.

- (8) Remove two bushings (21) from cab frame (20).
- (9) Remove two bearings (22) from pivot (19).



- (10) Remove nut (25), washer (26), washer (27), and screw (28) from pivot (29) and rod end (30).
- (11) Remove nut (31), washer (32), washer (33), and screw (34) from pivot (29) and rod end (35) of fitting and linkage (36).



11-6. BRAKE PEDAL AND LINKAGE REPLACEMENT/ADJUSTMENT (CONT).

b. Cleaning/Inspection.

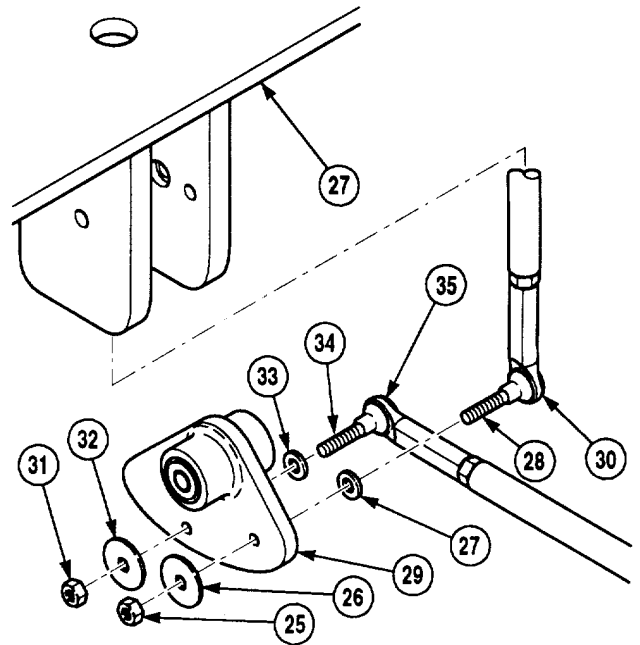
WARNING

- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38 °C) and for type II is 138°F
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

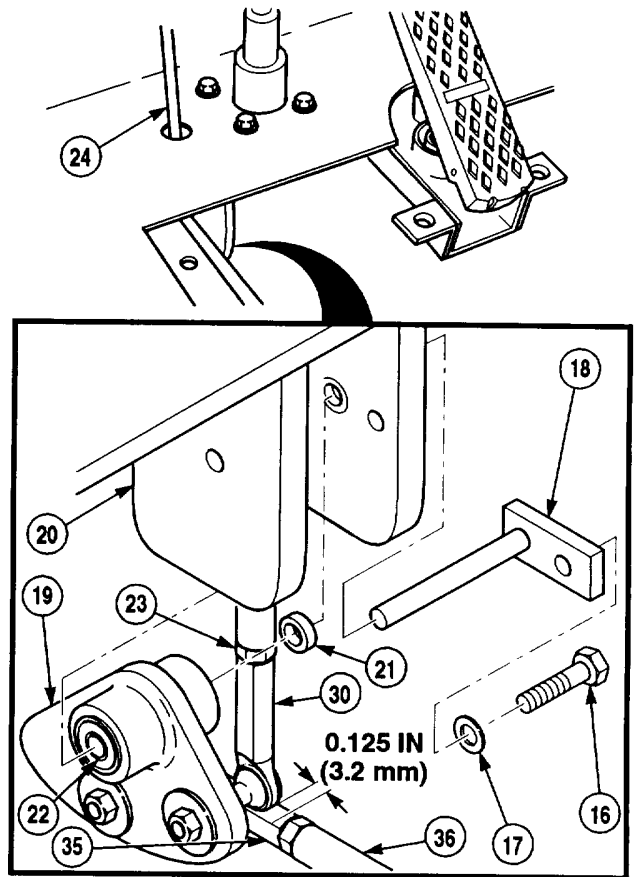
- (1) Clean all metal parts with drycleaning solvent and wipe dry with wiping rag.
- (2) Inspect all parts for breaks, cracks, burrs, and sharp edges.
- (3) Inspect all bearings for wear, scoring, and cracks.
- (4) Replace all damaged parts.

c. Installation.

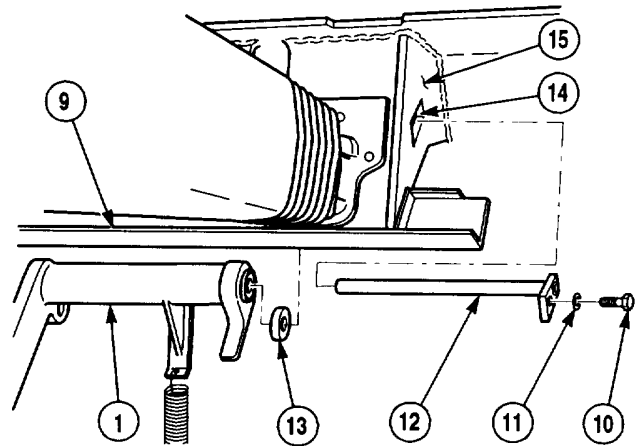
- (1) Install rod end (35) on pivot (29) with screw (34), washer (32), washer (33), and nut (31).
- (2) Install rod end (30) on pivot (29) with screw (28), washer (27), washer (26), and nut (25).



- (3) Install two bushings (21) in cab frame (20).
- (4) Install two bearings (22) in pivot (19).
- (5) Position fitting and linkage assembly (36) in forklift, ensuring linkage engages master cylinder.
- (6) Install pivot (19) on cab frame (20) with pin (18), screw (16), and washer (17).
- (7) Turn rod end (35) to adjust linkage until 0.125 in. (3.2 mm) clearance is obtained between fitting and linkage assembly rod (36) and rod end (30).
- (8) Insert rod (24) through floor and assemble with nut (23) and rod end (30).



- (9) Install two bushings (14) on dash frame (15).
- (10) Install two bearing (13) in brake pedal (1).
- (11) Install brake pedal (1) on dash frame (15) with pin (12), washer (11), and screw (10).

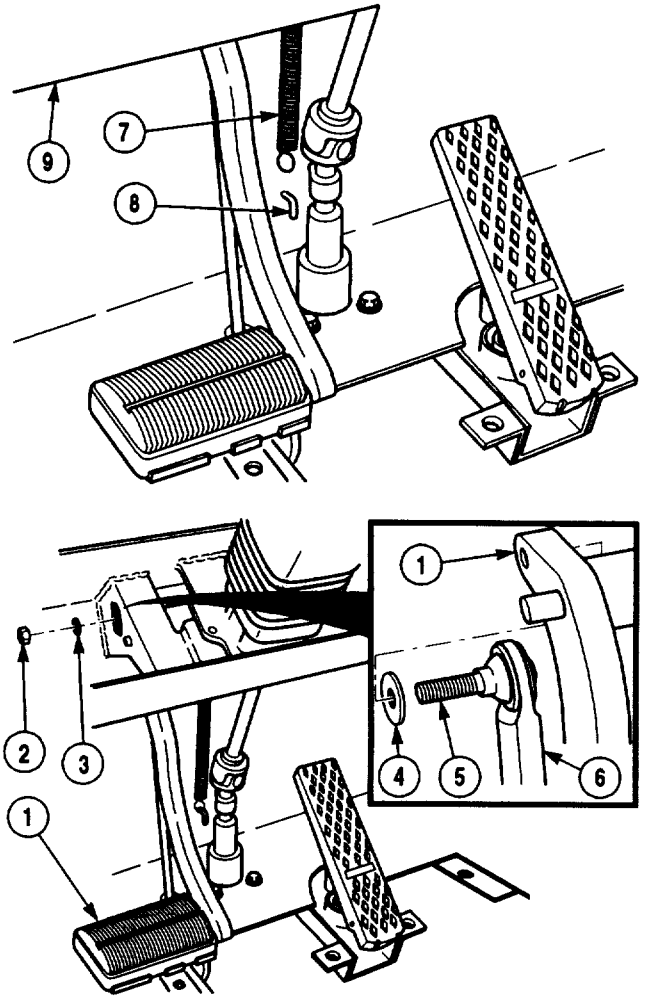


11-6. BRAKE PEDAL AND LINKAGE REPLACEMENT/ADJUSTMENT (CONT).

WARNING

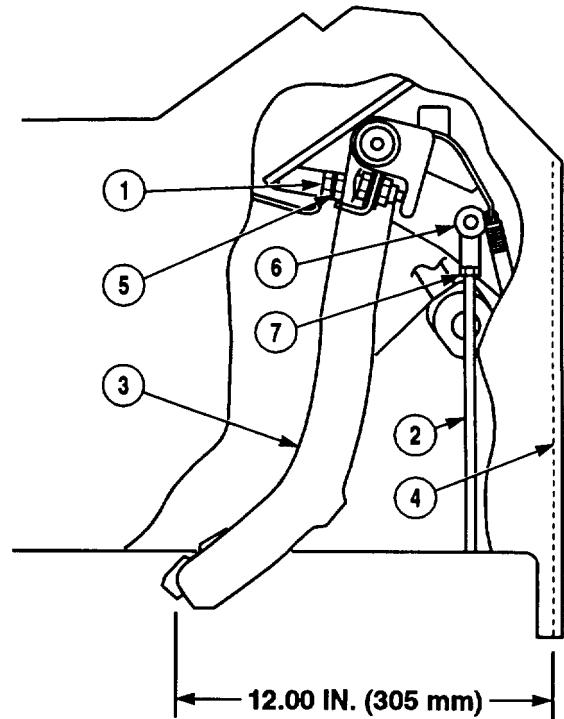
Use care when installing spring. Spring is under tension and can act as a projectile if released and could cause injury to personnel. (12) Install lower end of spring (7) on hook (8) located on dash frame (9).

- (13) Connect fitting (6) to brake pedal (1) with screw (5), washers (4), washers (3), and nut (2).
- (14) Apply slight pressure to brake pedal (1) and install washer (8) and nut (7) on connecting rod fitting (9).



d. Adjustment.

- (1) Adjust pedal stop screw (1) and pull rod (2) to achieve 12 in. (305 mm) from forward edge of brake pedal (3) and back wall of console (4).
- (2) Tighten nut (5) to secure adjustment.
- (3) Adjust pull rod (2) to achieve .06-.12 in. (1.52-3.04 mm) backlash at the brake pedal.
- (4) Align upper and lower fittings (6) and tighten two jam nuts (7).



NOTE

Follow-on Maintenance:

- Verify brake switch adjustment (Para 7-18).
- Install cab floor plate (Para 15-12).
- Close cab door (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

11-7. PARKING BRAKE REPLACEMENT.

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP

Tools and Special Tools

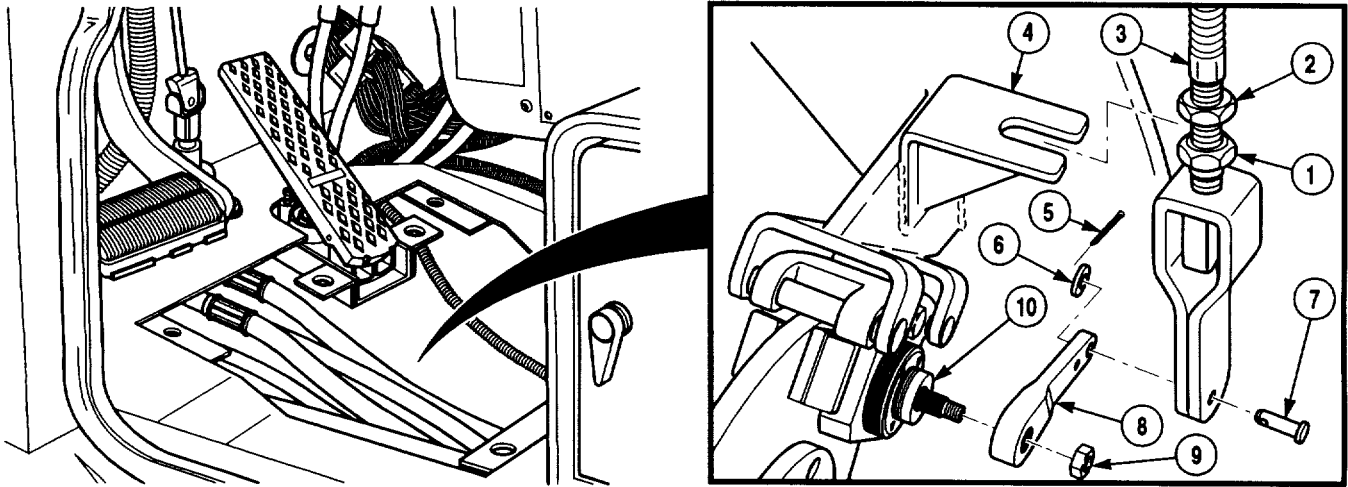
Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

Materials / Parts

Pads, Brake (2)
Washer, Lock (2)

Equipment Condition

Wheels chocked (TM 10-3930-669-10)
Engine OFF (TM 10-3930-669-10)
Cab door opened (TM 10-3930-669-10)
Parking brake released (TM 10-3930-669-10)
Cab floor plate removed (Para 15-12)
Drive shaft removed (Para 9-2)
Return spring assembly removed from oil pump bracket (Para 10-3)



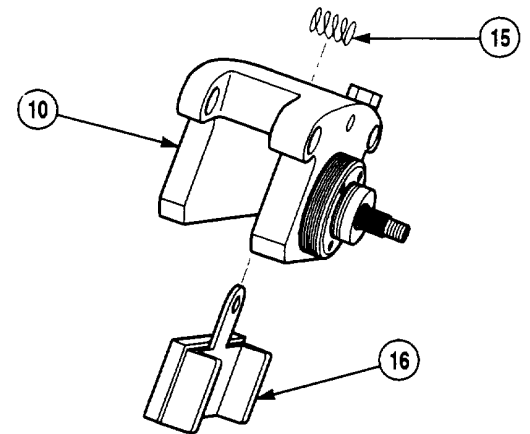
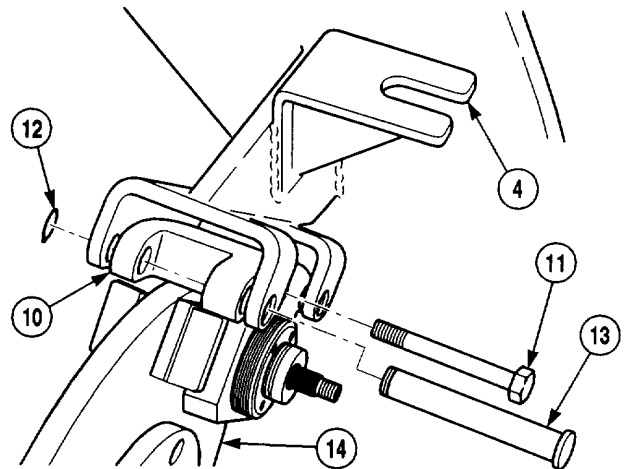
- (1) Loosen two nuts (1 and 2) and remove parking brake cable (3) from bracket (4).
- (2) Remove retaining pin (5), washer (6), pin (7), and parking brake cable (3) from brake lever (8).
- (3) Remove nut (9) and brake lever (8) from brake caliper (10).

- (4) Remove screw (11) from caliper (10).

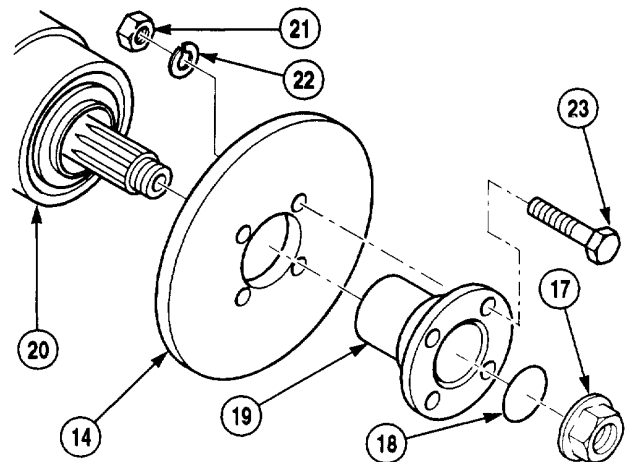
WARNING

Use care when removing snap and retaining rings. Snap and retaining rings are under spring tension and can act as projectiles when released and could cause severe eye injury.

- (5) Remove two retaining rings (12), pins (13), and brake caliper (10) from bracket (4) and disc (14).
- (6) Remove spring (15) and two brake pads (16) from brake caliper (10).



- (7) Remove nut (17), packing (18), and flange (19) from pinion shaft (20).
- (8) Remove two nuts (21), lock washers (22), screws (23), and disc (14) from flange (18). Discard lock washers.

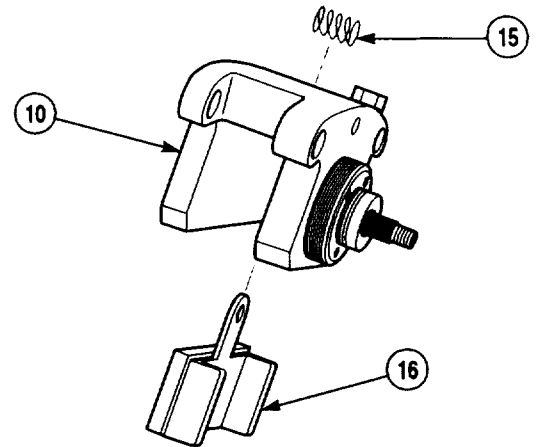


b. Installation.

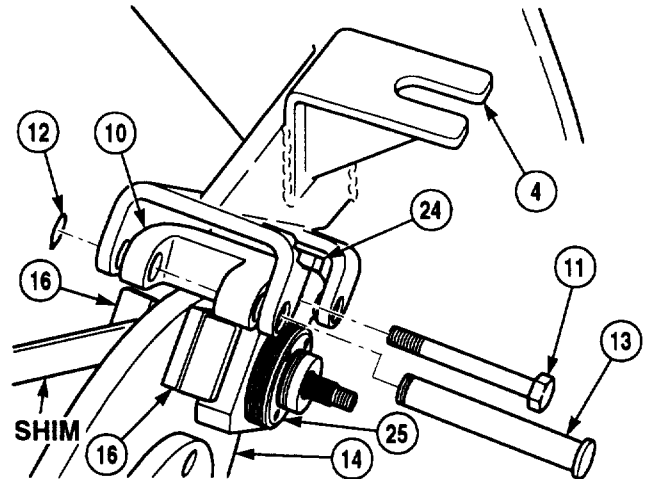
- (1) Install disc (14) on flange (19) with two screws (23), lock washers (22), and nuts (21).
- (2) Install flange (19) on pinion shaft (20) with packing (18) and nut (17).

11-7. PARKING BRAKE REPLACEMENT (CONT).

- (3) Position two brake pads (16) and spring (15) in brake caliper (10).



- (4) Position brake caliper (10) on disc (14).
- (5) Position brake caliper (10) inside of forklift bracket (4) and install two pins (13) and retaining rings (12).
- (6) Install screw (11), through brake caliper (10) and spring (15).



NOTE

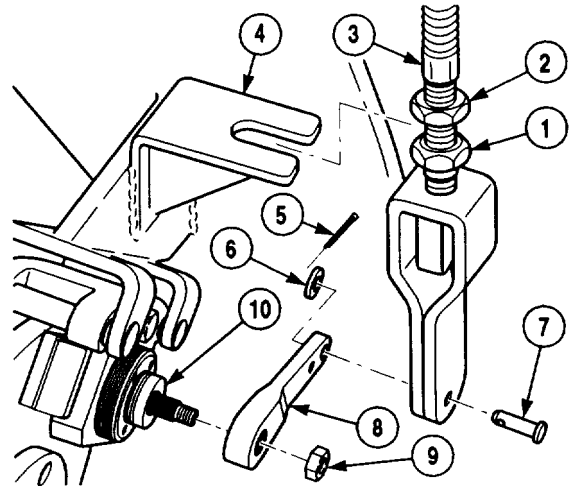
Steps (7) through (16) provide adjustment procedures.

- (7) Loosen retaining screw (24).
- (8) Insert 0.031 in. (0.794 mm) shim between rear pad (16) and disk (14).
- (9) Rotate rear pad adjuster (25) until two brake pads (16) are hand tight against brake disk (14).
- (10) Loosen rear pad adjuster (25) until the nearest flat is positioned below retaining screw (24).
- (11) Tighten retaining screw (24). Remove 0.031 in. (0.794 mm) shim.

NOTE

Pad adjuster lever should be in horizontal position when pads contact disk.

- (12) Install brake (8) with nut (9) on brake caliper (10).
- (13) Position parking brake cable (3) in forklift bracket (4).
- (14) Install parking brake cable (3) on brake lever (8) with pin (7), washer (6), and retaining pin (5).
- (15) Hand tighten upper nut (2) to remove slack in cable (3).
- (16) Tighten lower nut (1).



NOTE

Follow-on Maintenance:

- Install return spring assembly on oil pump bracket (Para 10-3).
- Verify parking brake adjustment (Para 11-3).
- Install drive shaft (Para 9-2).
- Install cab floor plate (Para 15-12).
- Apply parking brake (TM 10-3930-669-10).
- Close cab door (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

11-8. BRAKE SYSTEM BLEEDING.

This task covers:

Bleeding

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Shop Equipment, Automotive Maint and
Repair: Common No. 1 (Item 2, Appendix B)

Materials/Parts

Brake Fluid (Item 8, Appendix C)
Rags, Wiping (Item 19, Appendix C)
Hose, 1/4 in. ID

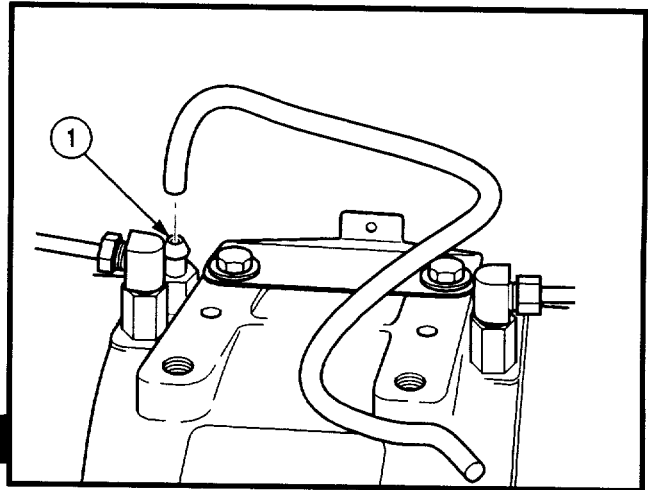
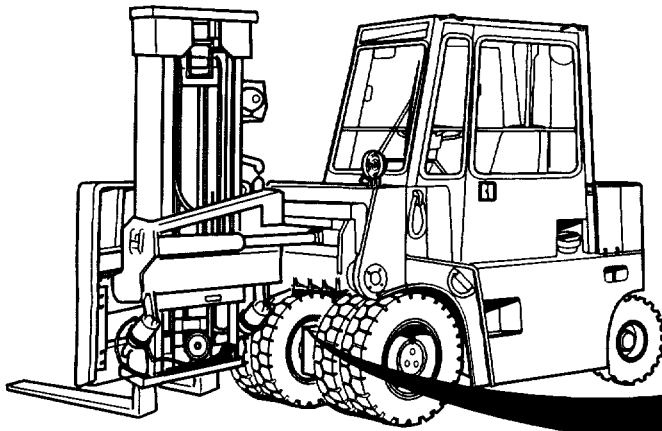
Personnel Required

Two

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Mast pivoted out 90° (TM 10-3930-669-10)

Bleeding

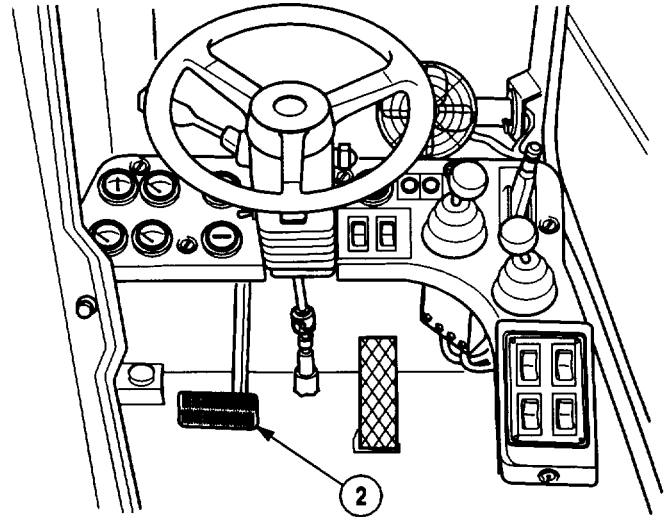


NOTE

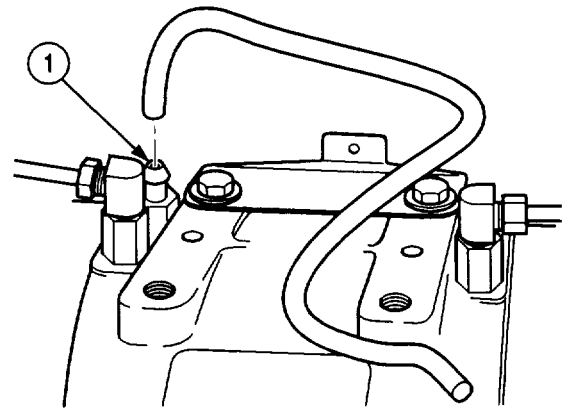
- Both left and right wheel brakes are bled the same way. Right side shown.
- Master cylinder must be filled with brake fluid.
- Place suitable container with a 1 qt. (1.0 liter) capacity under drive axle to catch spilling fluid.

(1) Install 1/4 inch hose on bleed nipple (1).

- (2) With the aid of an assistant, pump brake pedal (2) until brake pressure is felt.



- (3) Loosen bleed nipple (1) until brake pedal (2) goes completely down.



- (4) While assistant holds brake pedal (2) completely down, tighten bleed nipple (1).

NOTE

Check fluid level and fill as necessary.

- (5) Repeat steps (2) through (4) until fluid coming from hose is free of air.
 (6) Remove hose from bleed nipple (1).

NOTE

Follow-on Maintenance:

- Close mast (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

CHAPTER 12

WHEEL MAINTENANCE

Para	Contents	Page
12-1	Introduction.....	12-1
12-2	Wheel/Tire Replacement	12-2

12-1. INTRODUCTION.

This chapter contains maintenance instructions for removing and replacing wheel and tire components authorized by the Maintenance Allocation Chart (MAC) at the Unit Maintenance level.

12-2. WHEEL/TIRE REPLACEMENT.

This task covers:

- a. Front Wheel/Tire Replacement b. Rear Wheel Tire Replacement

INITIAL SETUP*Tools and Special Tools*

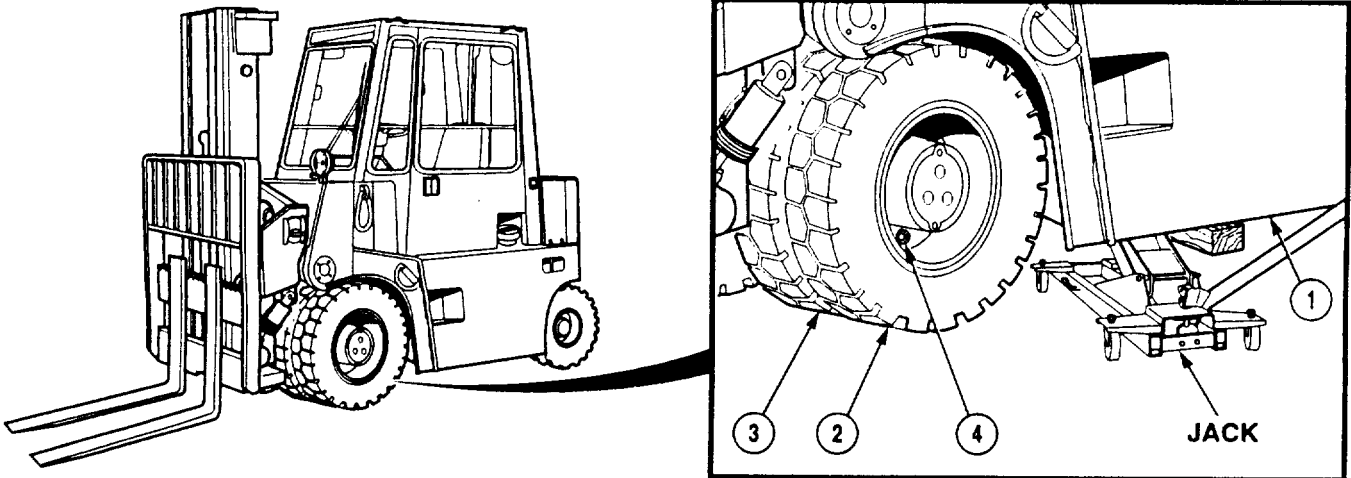
Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Wrench, Torque (0 to 175 lb-ft [0-237 N-m])
(Item 2, Appendix B)
Wrench, Torque (0 to 600 lb-ft [0-813 N-m])
(Item 2, Appendix B)
Wrench Set, Socket, 3/4 in.
(Item 2, Appendix B)
Floor Jack, Min 4 Ton Cap.
Wooden Blocks

Personnel Required

Two

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)

a. Front Wheel/Tire Replacement

(1) Removal.

WARNING

Center lifting point of floor jack under forklift body behind front wheel. Failure to do so could allow the jack to slip, causing injury or death to personnel or damage to equipment.

NOTE

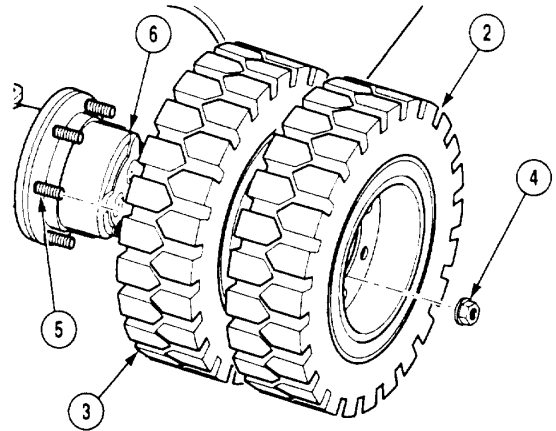
Front wheels should only be replaced with forklift on a hard level surface.

- (a) Position floor jack under forklift (1) behind outer wheel (2) and raise forklift until weight is off outer wheel but inner wheel (3) is still in contact with the ground.
- (b) Position wooden block under frame of forklift (1).
- (c) Loosen eight nuts (4). Do not remove.
- (d) Using floor jack, raise forklift (1) until inner wheel (3) is off the ground.

WARNING

Outer wheel weighs 223 lbs (101 kg) and inner wheel weighs 221 lbs (100 kg). Attach suitable lifting device prior to removal to prevent possible injury to personnel.

- (e) Remove eight nuts (4) from studs (5).
- (f) With the aid of an assistant, remove outer wheel (2) from front axle assembly (6).
- (g) With the aid of an assistant, remove inner wheel (3) from front axle assembly (6).

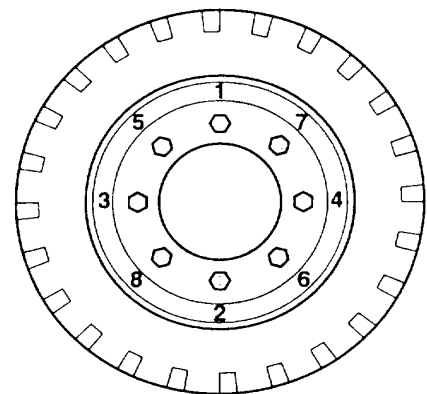


- (2) Installation.

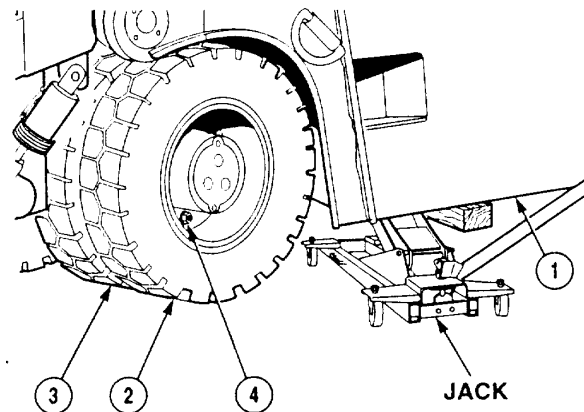
CAUTION

Inner wheel with deeper rim must be installed first or damage to equipment may result.

- (a) With the aid of an assistant, position inner wheel (3) on front axle assembly (6).
- (b) With the aid of an assistant, position outer wheel (2) on front axle assembly (6).
- (c) Install eight nuts (4) on studs (5).
- (d) Tighten nuts (4) to 30 lb-ft (41 N•m) as shown in the tightening sequence pattern.
- (e) Remove wooden block from under frame of forklift (1).
- (f) Lower floor jack slowly until inner wheel (3) and outer wheel (2) are on the ground.
- (g) Remove floor jack from under forklift (1)
- (h) Tighten nuts (4) to 360 to 480 lb-ft (488-651 N•m) as shown in the tightening sequence pattern.

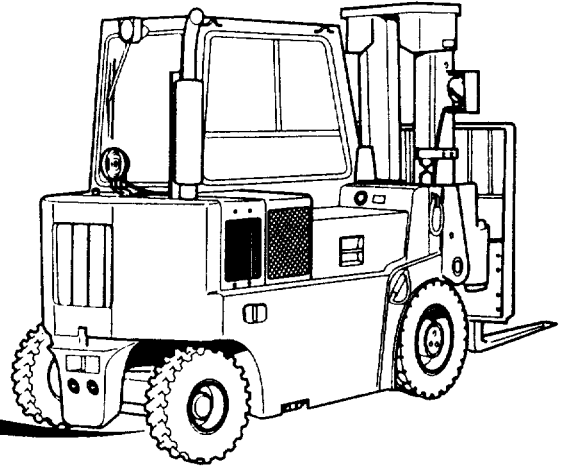
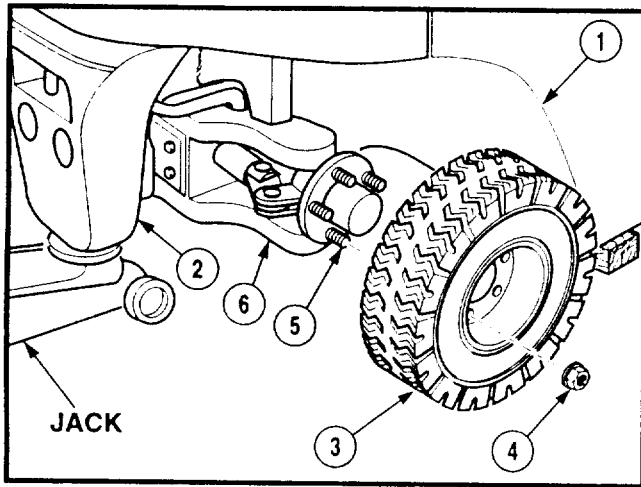


TIGHTENING SEQUENCE



12-2. WHEEL/TIRE REPLACEMENT (CONT).

b. Rear Wheel / Tire Replacement.



(1) Removal.

WARNING

Center lifting point of floor jack under counterweight. Failure to do so could allow the jack to slip, causing injury or death to personnel or damage to equipment.

NOTE

Rear wheels should only be replaced with forklift on a hard level surface.

- (a) Position floor jack under center of counterweight (2) and raise forklift (1) until weight is off rear wheels (3) but wheels are still in contact on the ground.
- (b) Loosen five nuts (4). Do not remove.
- (c) Raise forklift until rear wheels (3) are off the ground.
- (d) Position wooden blocks on both sides under frame of forklift (2).

WARNING

Rear wheel weighs 118 lbs (54 kg). Attach suitable lifting device prior to removal to prevent possible injury to personnel.

- (e) Remove five nuts (4) from studs (5).
- (f) With the aid of an assistant, remove rear wheel (3) from rear axle assembly (6).

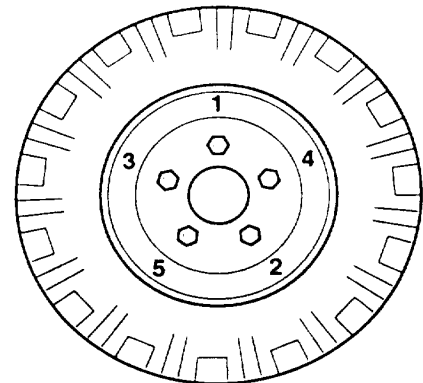
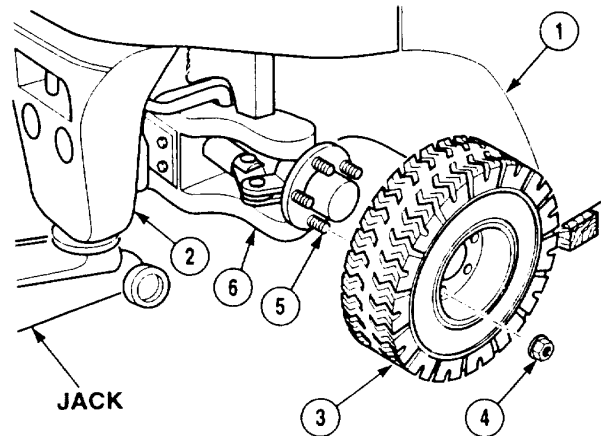
(2) Installation.

- (a) With the aid of an assistant, position rear wheel (3) on rear axle assembly (6).
- (b) Install five nuts (4) on studs (5).
- (c) Remove wooden blocks from under frame of forklift (1).
- (d) Lower floor jack slowly until rear wheels (3) are in contact with the ground. Do not put full weight of the forklift on the ground.

NOTE

If wheels spins while tightening nuts, lower jack slightly. Do not put full weight of forklift on ground.

- (e) Tighten nuts (4) to 185 to 240 lb-ft (251-325 N.m) as shown in the tightening sequence pattern.
- (f) Remove floor jack from under counterweight (2).



TIGHTENING SEQUENCE

NOTE

Follow-on Maintenance:

- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

CHAPTER 13

STEERING SYSTEM MAINTENANCE

Para	Contents	Page
13-1	Introduction.....	13-1
13-2	Steering Column Replacement	13-2
13-3	Steering Wheel Replacement.....	13-8
13-4	Steering Pump Replacement.....	13-10
13-5	Hub Replacement	13-14
13-6	Knuckle Replacement....	13-18

13-1. INTRODUCTION.

This chapter contains maintenance instructions for removing, replacing, and installing steering components authorized by the Maintenance Allocation Chart (MAC) at the Unit Maintenance level.

13-2. STEERING COLUMN REPLACEMENT.

This task covers:

- a. Removal b. Cleaning/Inspection c. Installation

INITIAL SETUP*Tools and Special Tools*

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Wrench, Torque (0-60 N.m)
(Item 12, Appendix B)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Steering wheel removed (Para 13-3)

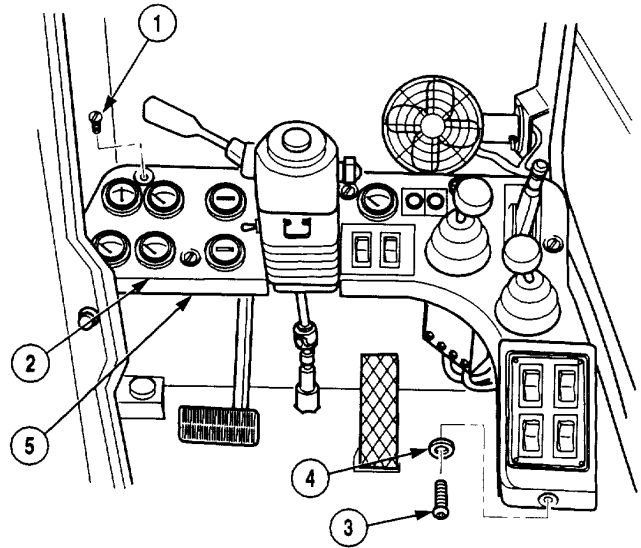
Materials Parts

Rags, Wiping (Item 19, Appendix C)
Solvent, Drycleaning (Item 20, Appendix C)
Bushing, Plastic (2)

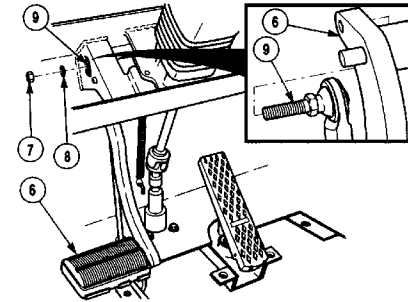
a. Removal.**NOTE**

Cut cable ties as required.

- (1) Remove four screws (1) from instrument panel (2).
- (2) Remove screw (3), washer (4), and instrument panel (2) from dash frame (5).



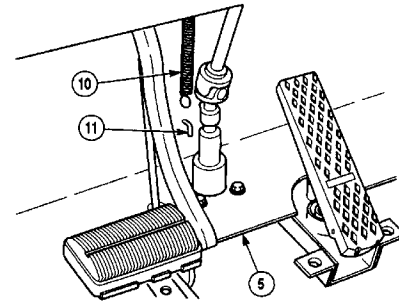
- (3) Apply slight pressure to brake pedal (6) and remove nut (7) and washer (8) from connecting rod fitting (9).
- (4) Remove connecting rod fitting (9) from brake pedal (6).



WARNING

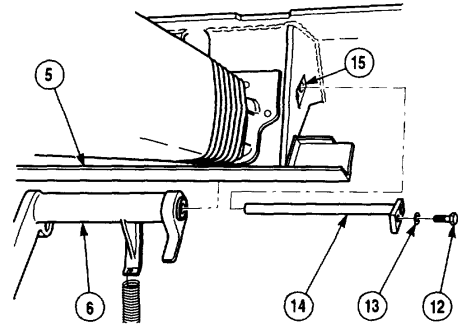
Use care when removing spring. Spring is under tension and can act as a projectile if released and could cause injury to personnel.

- (5) Remove lower end of spring (10) from hook (11) located on dash frame (5).

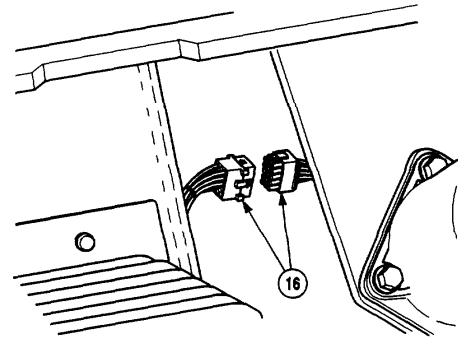


13-2. STEERING COLUMN REPLACEMENT (CONT).

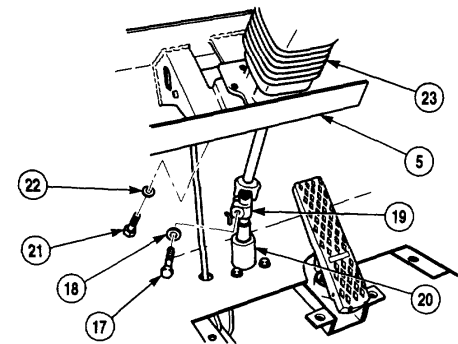
- (6) Remove screw (12), washer (13), pin (14), and brake pedal (6) from dash frame (5).
- (7) Exercise care not to disturb two bushings (15) in dash frame (5).



- (8) Disconnect steering column electrical connector (16).



- (9) Remove screw (17) and washer (18) from steering column clamp (19).
- (10) Remove steering column clamp (19) from steering shaft (20).
- (11) Remove four screws (21), washers (22), and steering column assembly (23) from dash frame (5).



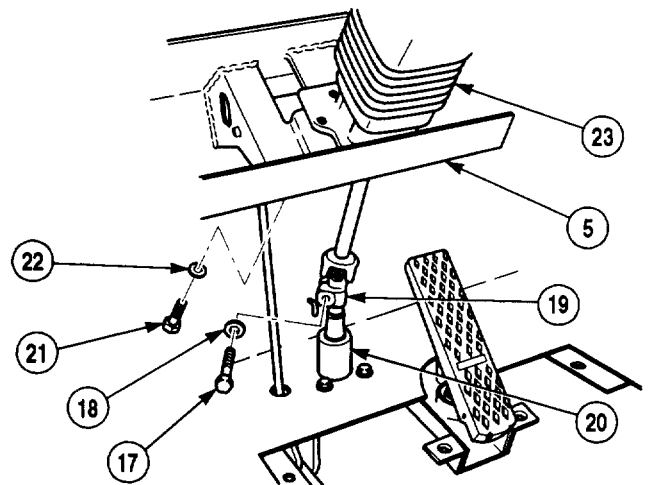
b. Cleaning/Inspection.**WARNING**

- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type drycleaning solvent is 100°F (38°C) and for type II is 138°F (59°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

- (1) Clean all metal parts with drycleaning solvent and wipe dry with wiping rag.
- (2) Do not allow drycleaning solvent to come in contact with rubber parts or rubber insulation on electrical wiring.
- (3) Inspect all parts for breaks, cracks, burrs, and sharp edges.
- (4) Replace all damaged parts.

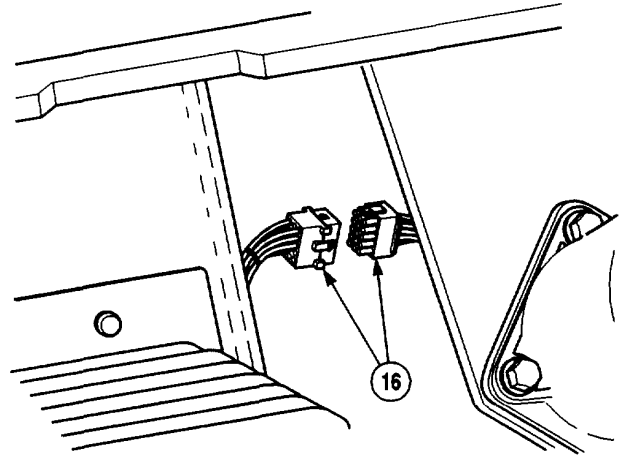
c. Installation.

- (1) Install steering column assembly (23) on dash frame (5) with four washers (22) and screws (21). Tighten screws to 18 lb-ft (25 N•m).
- (2) Install steering column clamp (19) on steering shaft (20).
- (3) Install washer (18) and screw (17) on steering column clamp (19). Tighten screw to 36 lb-ft (49 N•m).



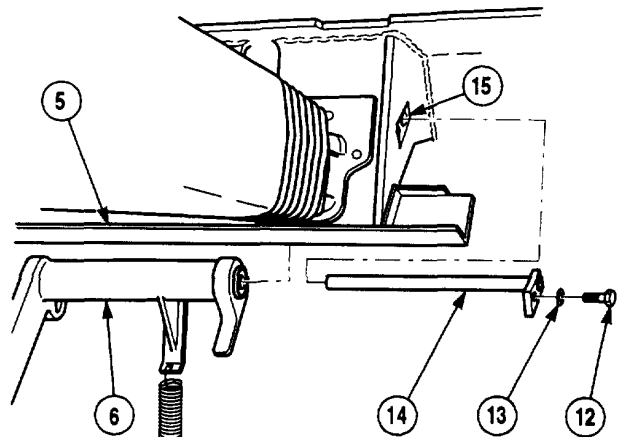
13-2. STEERING COLUMN REPLACEMENT (CONT).

- (4) Connect steering column electrical connector (16).



- (5) If removed, install two bushings (15) on dash frame (5).

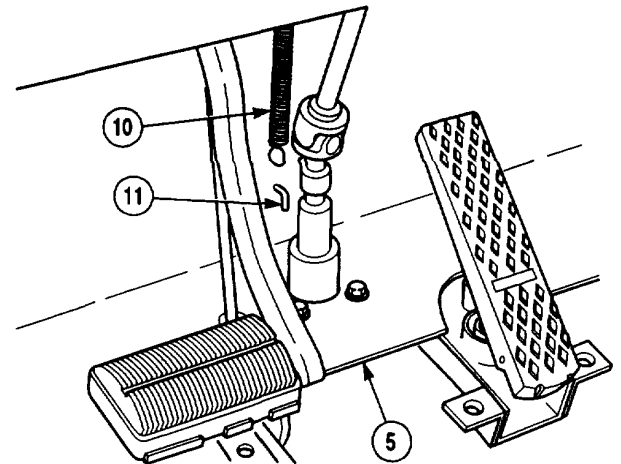
- (6) Install brake pedal (6) on dash frame (5) with pin (14), washer (13), and screw (12).



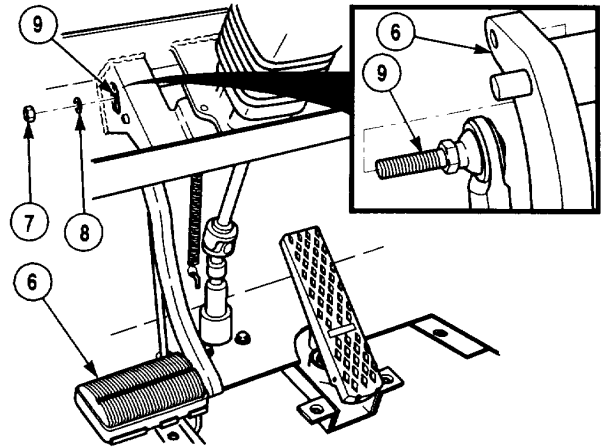
WARNING

Use care when installing spring. Spring is under tension and can act as projectile if released and could cause injury to personnel.

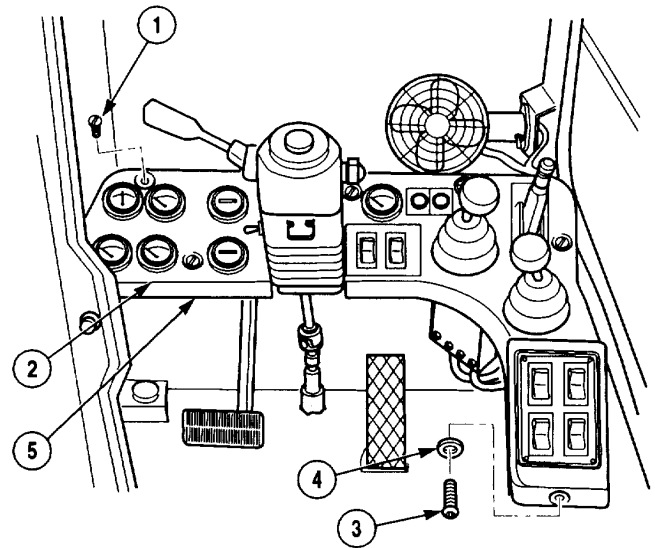
- (7) Install lower end of spring (10) on hook (11) located on dash frame (5).



- (8) Position connecting rod fitting (9) through brake pedal (6).
- (9) Apply slight pressure to brake pedal (6) and install washer (8) and nut (7) on connecting rod fitting (9).



- (10) Install instrument panel (2) on dash frame (5) with washer (4) and screw (3).
- (11) Install four screws (1) on instrument panel (2).



NOTE

Follow-on Maintenance:

- Install steering wheel (Para 13-3).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

13-3. STEERING WHEEL REPLACEMENT.

This task covers:

- a. Removal b. Cleaning/Inspection c. Installation

INITIAL SETUP*Tools and Special Tools*

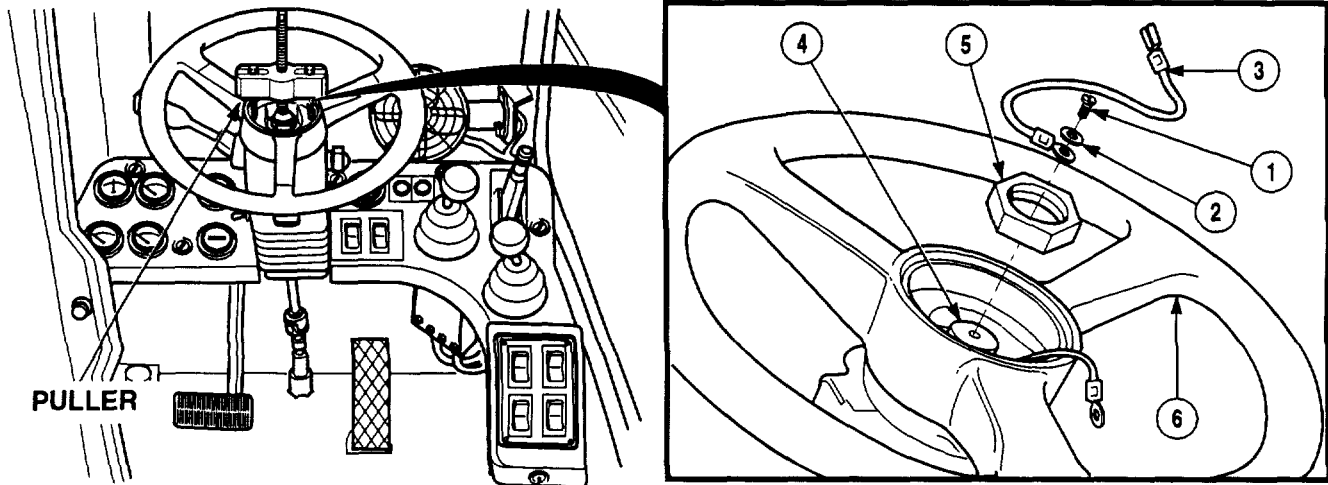
Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Puller, Steering Wheel
(Item 2, Appendix B)
Wrench, Torque (0 to 175 lb-ft [0-237 N-m])
(Item 2, Appendix B)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Cab door opened (TM 10-3930-669-10)
Batteries disconnected (Para 7-48)
Horn button removed (Para 7-46)

Materials/Parts

Solvent, Drycleaning (Item 20, Appendix C)

a. Removal

- (1) Remove screw (1), washer (2), and ground wire (3) from steering shaft (4).
- (2) Remove nut (5) from steering shaft (4) and steering wheel (6).
- (3) Using steering wheel puller, remove steering wheel (6) from steering shaft (4).

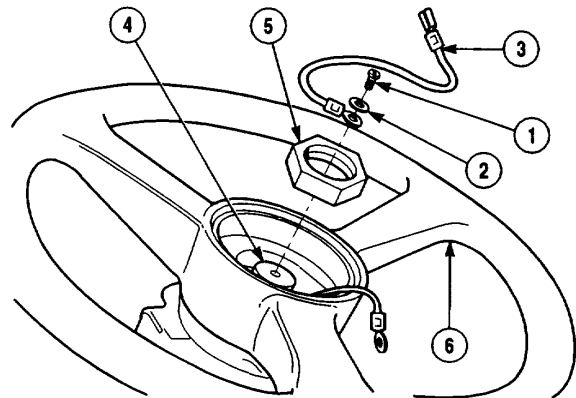
b. Cleaning/Inspection.**WARNING**

- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

- (1) Clean all metal parts with drycleaning solvent.
- (2) Inspect all parts for breaks, cracks, burrs, and sharp edges.
- (3) Replace all damaged parts.

c. Installation.

- (1) Install steering wheel (6) on steering shaft (4) with nut (5). Tighten nut 30 to 41 lb-ft (40-55 N•m).
- (2) Install ground wire (3) on steering shaft (4) with washer (2) and screw (1).

**NOTE**

Follow-on Maintenance:

- Install horn button (Para 7-46).
- Close cab door (TM 10-3930-669-10).
- Connect batteries (Para 7-48).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

13-4. STEERING PUMP REPLACEMENT.

This task covers:

- a. Removal b. Cleaning/Inspection c. Installation

INITIAL SETUP*Tools and Special Tools*

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

Materials/Parts

Cable Ties (Item 4, Appendix C)
Rags, Wiping (Item 19, Appendix C)
Solvent, Drycleaning (Item 20, Appendix C)

Materials/Parts - Continued

Tags, Identification (Item 21, Appendix C)
Packing, Preformed
Packing, Preformed (4)

Equipment Condition

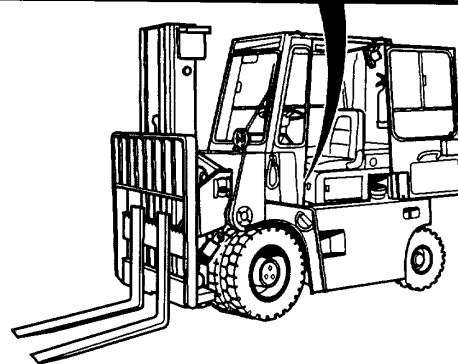
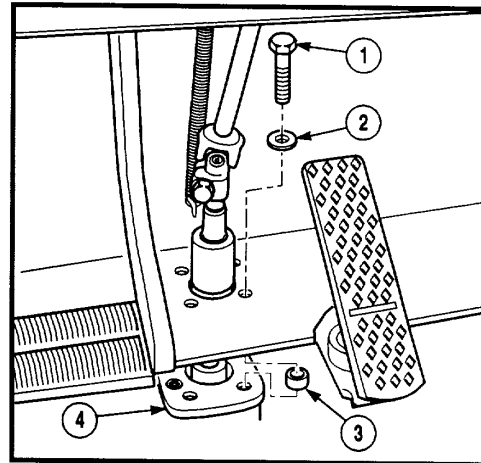
Wheels chocked (TM 10-3930-669-10)

a. Removal**WARNING**

Hydraulic fluid is very slippery and can cause falls. To avoid injury, wipe up fluid with rags.

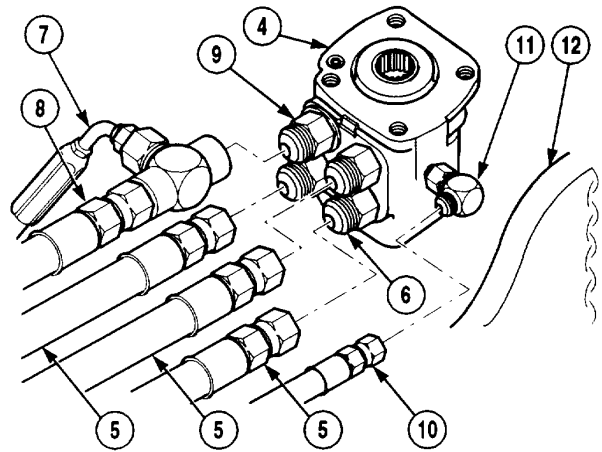
NOTE

- Tag and mark hydraulic hoses before removal.
- Remove cable ties as required.
- Place container with a 1 qt. (1 liter) capacity under control unit to catch spilling fluid.
- Perform only Step (1) when setting equipment condition for brake linkage replacement/ adjustment.

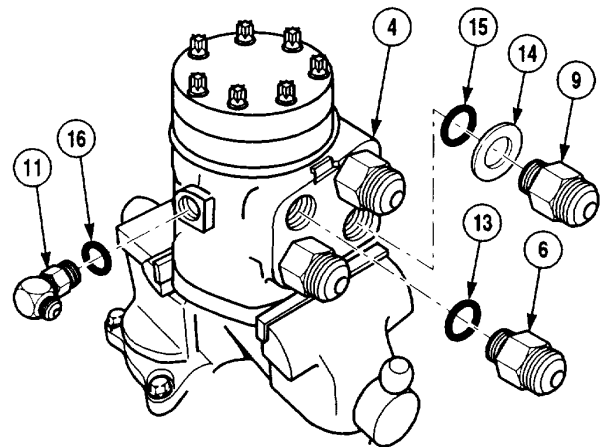


- (1) Remove four screws (1) and washers (2).
- (2) Remove control pump (4) exercising care not to disturb spacers (3).

- (3) Remove three hydraulic hoses (5) from fittings (6).
- (4) Remove hydraulic hoses (7 and 8) from fitting (9).
- (5) Remove hydraulic hose (10) from elbow (11).
- (6) Remove control pump (4) from forklift (12).



- (7) Place control pump (4) in vise and remove three fittings (6) and preformed packings (13) from control pump (4). Discard preformed packings.
- (8) Remove fitting (9), washer (14), and preformed packing (15) from control pump (4). Discard preformed packing.
- (9) Remove elbow (11) and preformed packing (16) from control pump (4). Discard preformed packing.



b. Cleaning/Inspection.

WARNING

- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat of flame. Never smoke when using solvent; the flash point for type I drycleaning solvent is 100°F (38°C) and for type II is 140°F (60°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

- (1) Clean all metal parts in drycleaning solvent.

13-4. STEERING PUMP REPLACEMENT (CONT).

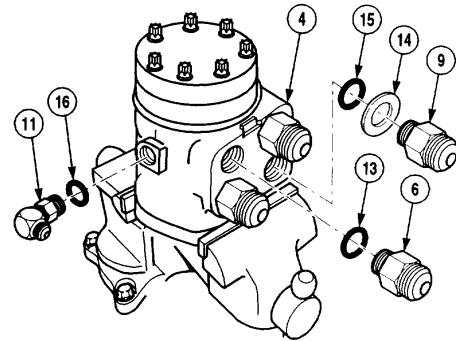
WARNING

Compressed air used for cleaning purposes must not exceed 30 psi (207 kPa). Use only with effective chip guarding and personal protective equipment (goggles/shield, gloves, etc.).

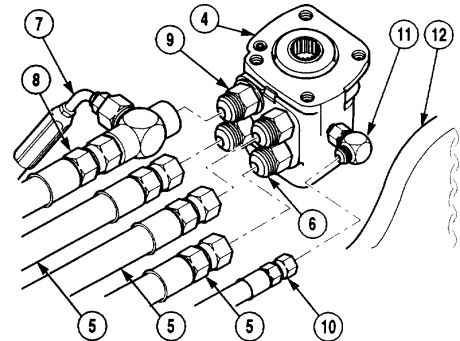
- (2) Dry with compressed air.
- (3) Check parts for damage.
- (4) Replace damaged parts.

c. Installation.

- (1) Place control pump (4) in vise and install preformed packing (16) and elbow (11) on control pump (4).
- (2) Install preformed packing (15), washer (14), and fitting (9) on control pump (4).
- (3) Install three preformed packings (13) and fittings (6) on control pump (4).



- (4) Position control pump (4) in forklift (12).
- (5) Install hydraulic hose (10) on elbow (11).
- (6) Install hydraulic hoses (8 and 7) on fitting (9).
- (7) Install three hydraulic hoses (5) on four fittings (6).

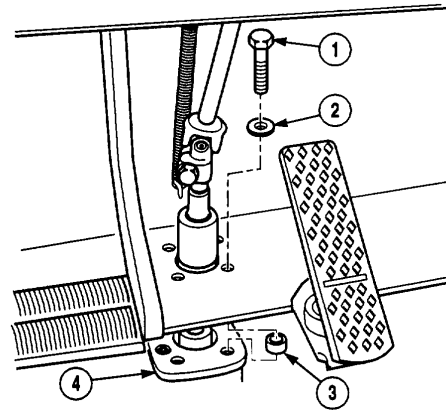


- (8) Install control pump (4) using four screws (1), washers (2), and spacers (3) if removed.

NOTE

Follow-on Maintenance:

- Install cab (Para 15-2).
- Remove wheel chocks (TM 10-3930-669-10).



END OF TASK

13-5. HUB REPLACEMENT.

This task covers:

- a. Removal b. Cleaning/Inspection c. Installation

INITIAL SETUP*Tools and Special Tools*

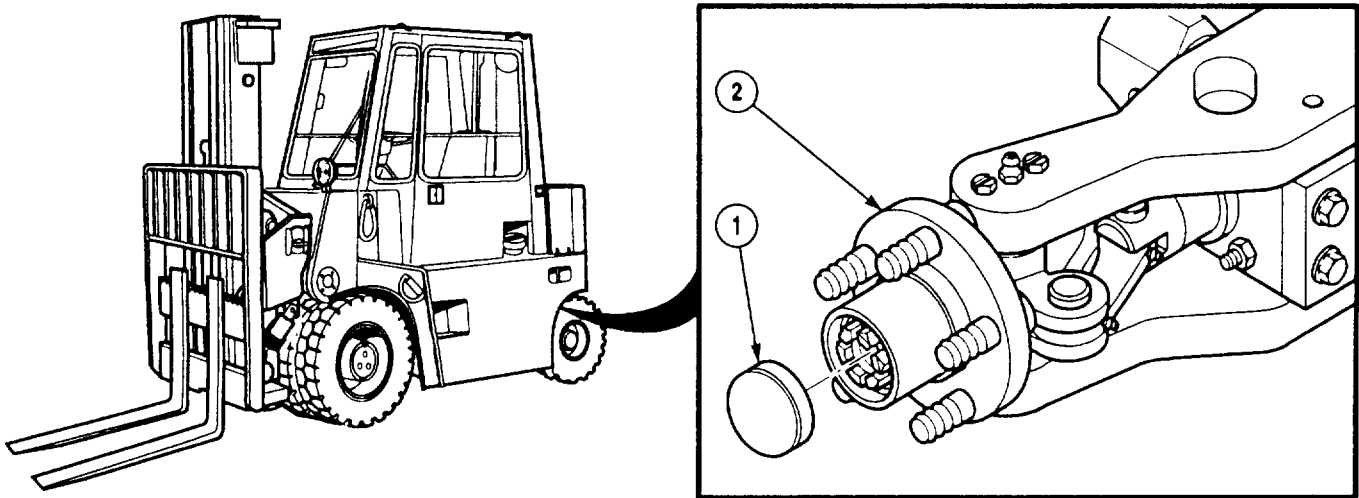
Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

Materials /Parts

Cotter Pin

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Wheel removed (Para 12-2)

**NOTE**

- Left and right hub are removed the same way. The left side is shown.
- You may need to loosen hubcap by lightly tapping on outer edge in space at end of hub with a hammer and chisel.

(1) Remove cap (1) from hub (2).

- (2) Remove cotter pin (3) from hub bearing nut (4) and spindle (5). Discard cotter pin.
- (3) Remove bearing nut (4) and washer (6) from spindle (5).
- (4) Pull hub (2) slightly to loosen outer bearing (7).

NOTE

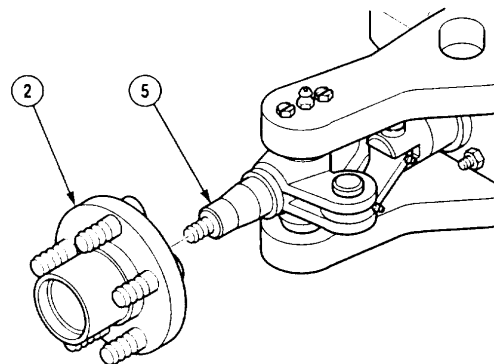
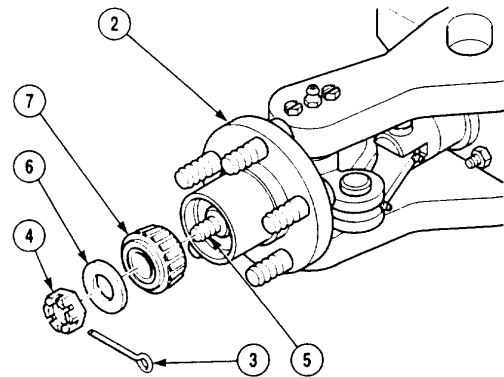
Tag outer bearing cone.

- (5) Remove outer bearing (7) from spindle (5).

CAUTION

Pull hub straight off of spindle, taking care not to drag hub along spindle shaft, or damage to hub seal may result.

- (6) Remove hub (2) from spindle (5).



13-5. HUB REPLACEMENT (CONT).***b. Cleaning/Inspection.*****WARNING**

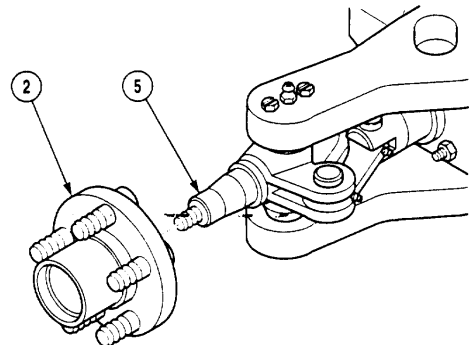
- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

- (1) Clean all parts in drycleaning solvent. Allow to air dry.
- (2) Inspect the bearings and bearing cups for scratches, cracks, glazing, rust pitting, flat spots, and other wear.
- (3) Clean old grease out of center of wheel hub.
- (4) Replace all damaged parts or notify supervisor.

c. Installation.**CAUTION**

Install hub straight on spindle, using care not to drag hub along spindle shaft, to prevent damage to hub seal.

- (1) Install hub (2) on spindle (5).



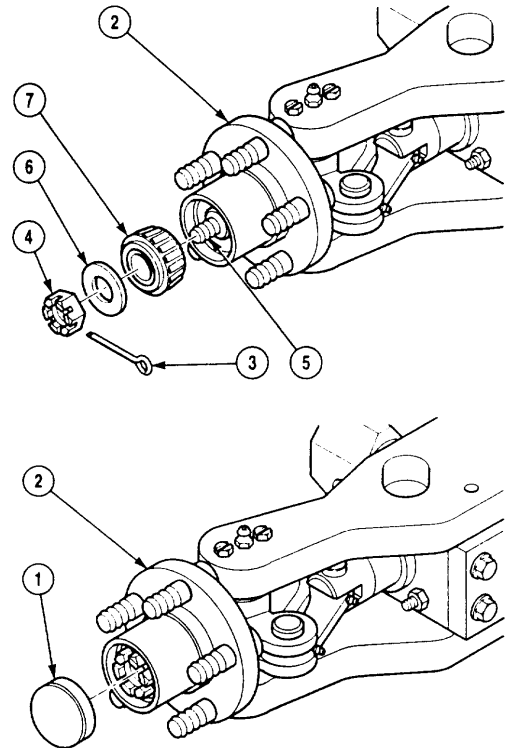
- (2) Pack outer bearing (7) with grease.
- (3) Position bearing (7), washer (6), and hub bearing nut (4) on spindle (5).
- (4) Tighten hub bearing nut (4) until there is a drag in the outer bearing cone (7) as wheel is rotated in both directions. Then, back bearing nut off to the nearest slot in nut and spindle.
- (5) Install cotter pin (3) on hub bearing nut (4) and spindle (5).
- (6) Pack grease around the spindle (5) and hub bearing nut (4) area.
- (7) Using a soft-face mallet, install cap (1) on hub (2).

NOTE

Follow-on Maintenance:

- Install wheel (Para 12-2).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK



13-6. KNUCKLE REPLACEMENT.

This task covers:

- a. Removal b. Cleaning/Inspection c. Installation

INITIAL SETUP*Tools and Special Tools*

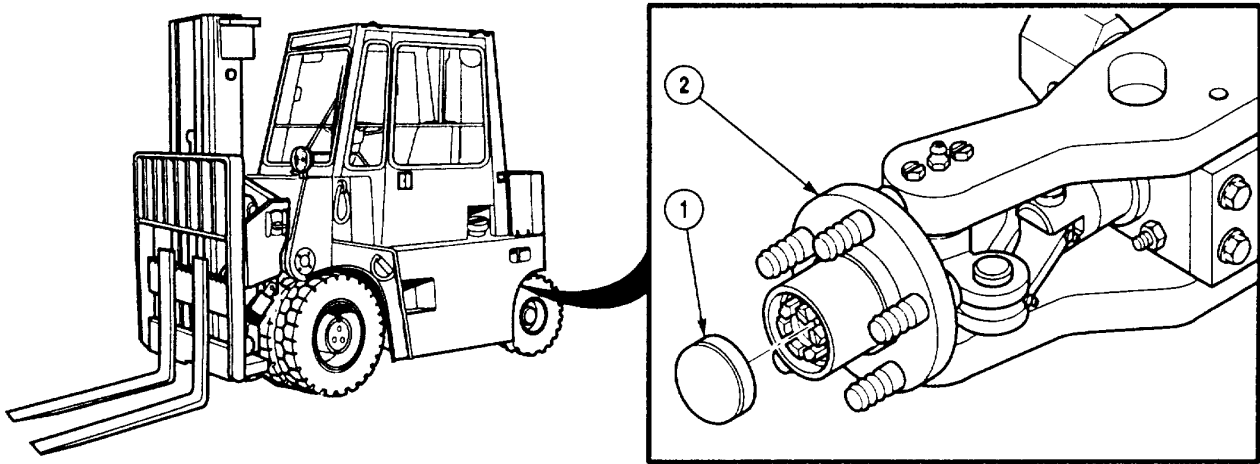
Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Puller (Item 2, Appendix B)
Wrench, Torque (0-60 N.m)
(Item 12, Appendix B)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Batteries disconnected (Para 7-48)
Hub removed (Para 13-5)

Materials/Parts

Grease (Item 14, Appendix C)
Solvent, Drycleaning (Item 20, Appendix C)
Pin, Cotter
Seal (2)
Shims

a. Removal.**NOTE**

- Left and right knuckle are removed the same way. The left side is shown.
- If both knuckles are removed, tag and mark them.

(1) Remove cotter pin (1) and washer (2) from pin (3). Discard cotter pin.

(2) Remove pin (3) from knuckle (4) and tie rod arm (5).

- (3) Remove lower grease fitting (6) from pin cover (7).
- (4) Remove three screws (8) from pin cover (7).
- (5) Remove pin cover (7) and shims (9) from lower axle bore (10) and knuckle (4). Discard shims.

NOTE

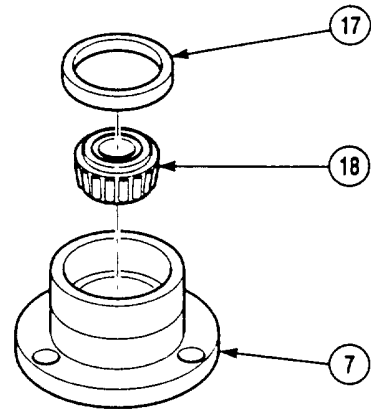
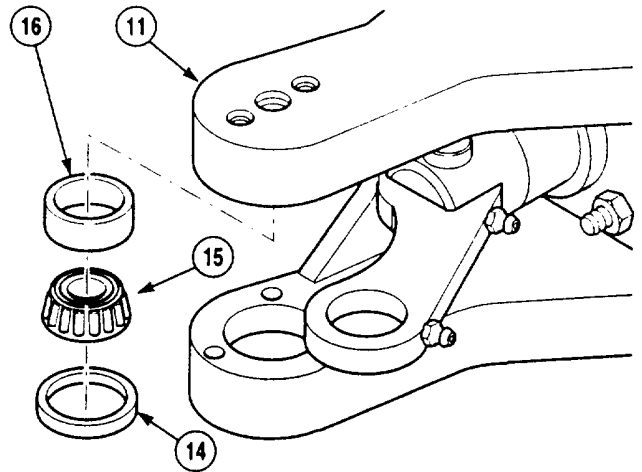
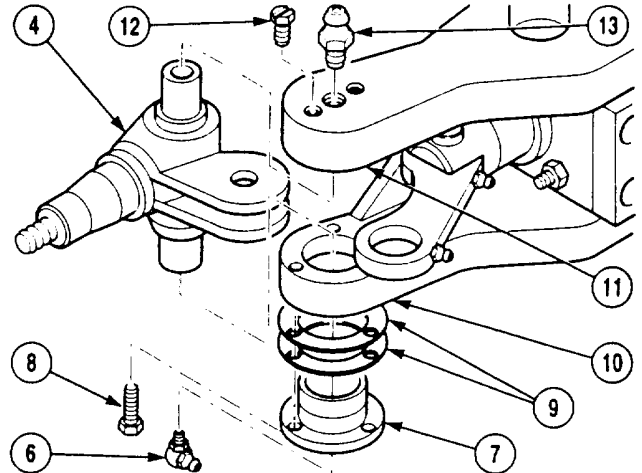
Use a soft-face mallet to tap on the knuckle arm to release the knuckle from upper bearing.

- (6) Using a soft-face mallet, remove knuckle (4) from upper axle bore (11) and lower axle bore (10). Engine OFF (TM 10-3930-669-10) Parking brake applied (TM 10-3930-669-10) Wheels chocked (TM 10-3930-669-10) Batteries disconnected (Para 7-48) Hub removed (Para 13-5)
- (7) Remove two screw plugs (12) and upper grease fitting (13) from upper axle bore (11).

NOTE

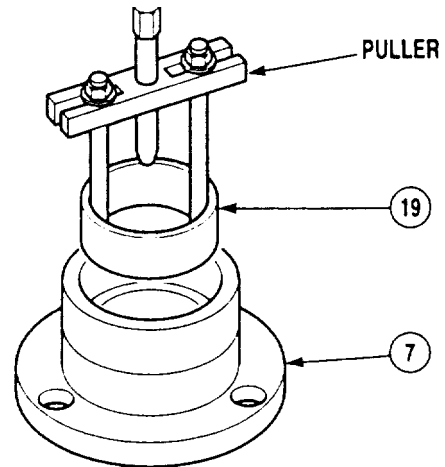
Use a drift pin inserted in screw plug holes to remove the upper seal, bearing cone, and bearing cup.

- (8) Using a drift pin, remove the upper seal (14), upper bearing cone (15), and upper bearing cup (16) from the upper axle bore (11). Discard seal.
- (9) Remove lower seal (17) and lower bearing cone (18) from pin cover (7). Discard seal.



13-6. KNUCKLE REPLACEMENT (CONT).

- (10) Using a puller, remove bearing cup (19) from pin cover (7).

***b. Cleaning/Inspection.*****WARNING**

- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

- (1) Clean all parts in drycleaning solvent. Allow to air dry.
- (2) Inspect the bearings and bearing cups for scratches, cracks, glazing, rust pitting, flat spots, and other wear.
- (3) Replace damaged parts or notify supervisor.

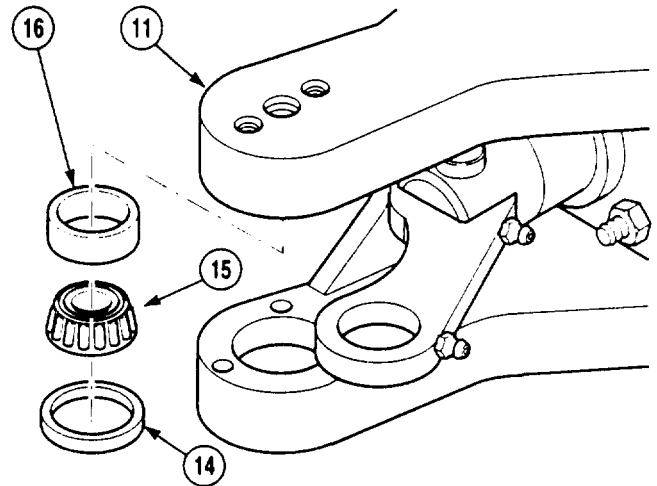
c. Installation.

CAUTION

- Apply even force to the bearing cup to prevent cracking during installation.
- Be sure that the bearing cup is fully seated against shoulder in upper axle bore.

NOTE

Left and right sides are installed the same way. Left side shown.

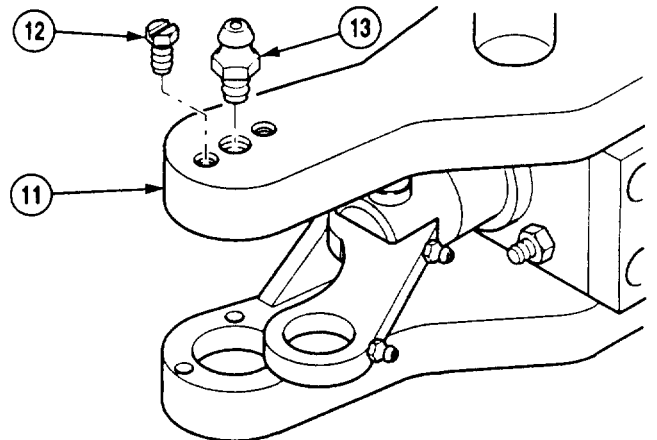


- (1) Install upper bearing cup (16) in upper axle bore (11).
- (2) Pack upper bearing cone (15) with grease.
- (3) Install upper bearing cone (15) in upper bearing cup (16).

NOTE

Upper seal lip should be facing toward knuckle when installed.

- (4) Coat upper seal (14) with grease.
- (5) Using a soft-face mallet, install upper seal (14) in upper axle bore (11).
- (6) Install two screw plugs (12) and upper grease fitting (13) in upper axle bore (11).



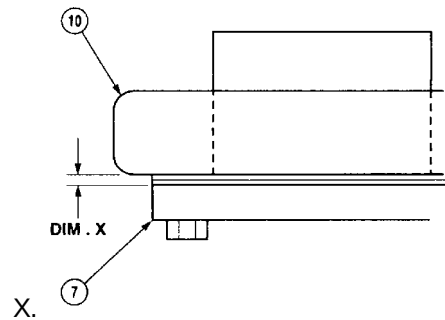
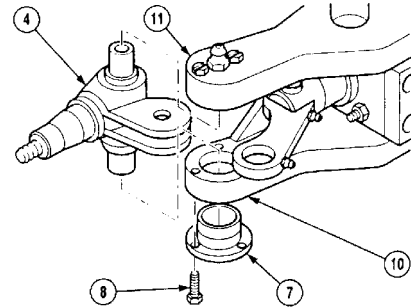
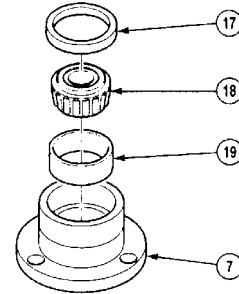
13-6. KNUCKLE REPLACEMENT (CONT).

- (7) Install bearing cup (19) in pin cover (7).
- (8) Pack lower bearing cone (18) with grease.
- (9) Install lower bearing cone (18) in pin cover (7).
- (10) Coat lower seal (17) with grease.
- (11) Using a soft-face mallet, install lower seal (17) in pin cover (7).

CAUTION

Caution should be taken not to damage the upper seal when installing the knuckle.

- (12) Install knuckle (4) in the upper axle bore (11) and lower axle bore (10).
- (13) Install pin cover (7) in lower axle bore (10) and knuckle (4) with three screws (8).
- (14) Using a depth gauge, measure the distance between lower axle (10) and pin cover assembly (7). Select appropriate shim from shims pack that will add up to a total shim thickness of less than .005-.009 in. (0.127-0.226 mm) for DIM.



(15) Remove three screws (8) and pin cover (7) from lower axle bore (10) and knuckle (4).

(16) Install appropriate shims (9) and pin cover (7) through lower axle bore (10) and knuckle (4) with three screws (8). Tighten screws to 15 to 18 lb-ft (20-25 N.m).

(17) Install lower grease fitting (6) into pin cover (7).

(18) Install pin (3) into knuckle (4) and tie rod arm (5).

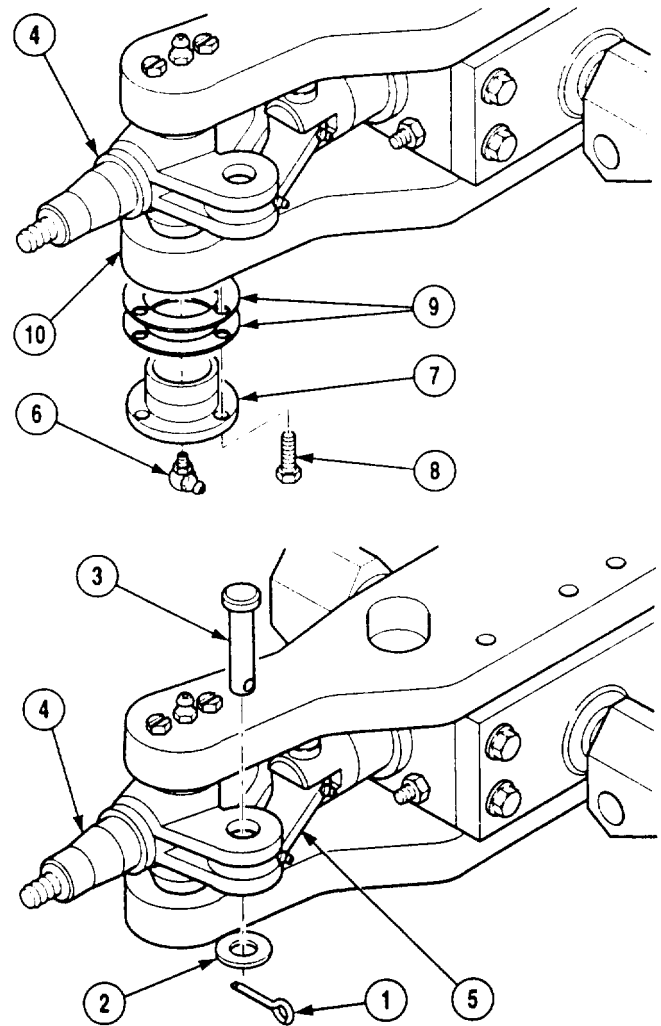
(19) Install washer (2) and cotter pin (1) on pin (3).

NOTE

Follow-on Maintenance:

- Connect batteries (Para 7-48).
- Install hub (Para 13-5).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK



CHAPTER 14

FRAME MAINTENANCE

Para	Contents	Page
14-1	Introduction.....	14-1
14-2	Load Rest Replacement	14-2
14-3	Side Shift Rod Scraper Replacement.....	14-4
14-4	Side Shift Chain Adjustment	14-7

14-1. INTRODUCTION.

This chapter contains maintenance instructions for removing, replacing, repairing, and installing frame components authorized by the Maintenance Allocation Chart (MAC) at the Unit Maintenance level.

14-2. LOAD REST REPLACEMENT.

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP

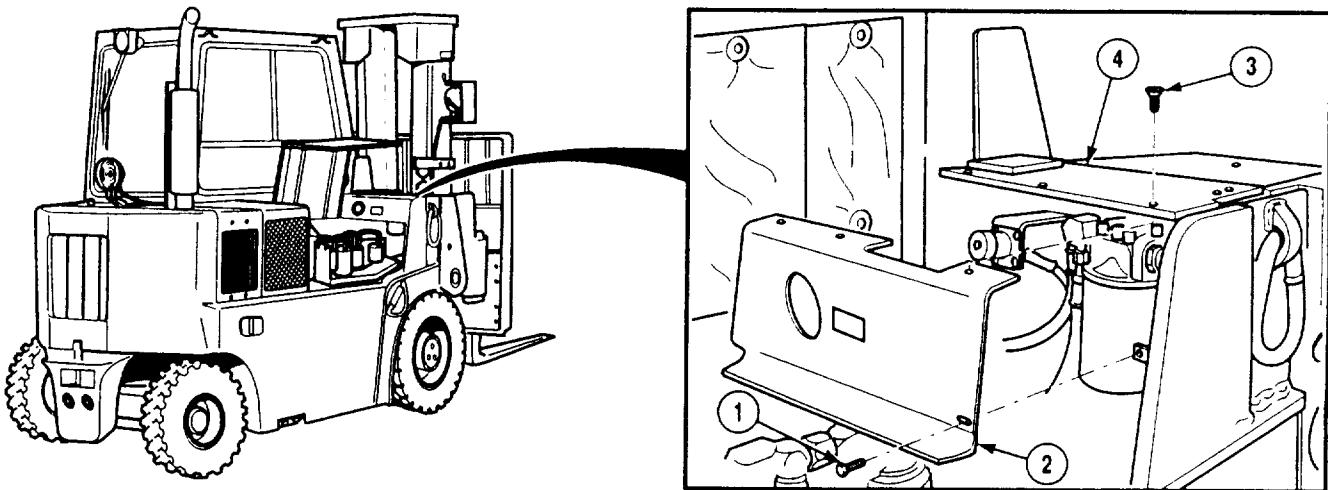
Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Right-hand engine access cover opened
(TM 10-3930-669-10)

a. Removal.



- (1) Remove screw (1) from right-hand access panel (2).
- (2) Remove three screws (3) and right-hand access panel (2) from load rest (4).

- (3) Remove two screws (5) from load rest (4). and hydraulic filter head (6).
- (4) Remove three screws (7) load rest (4) from fork lift (8).
- (5) Remove two screws (9) and wear pad (10) from load rest (4).

b. Installation.

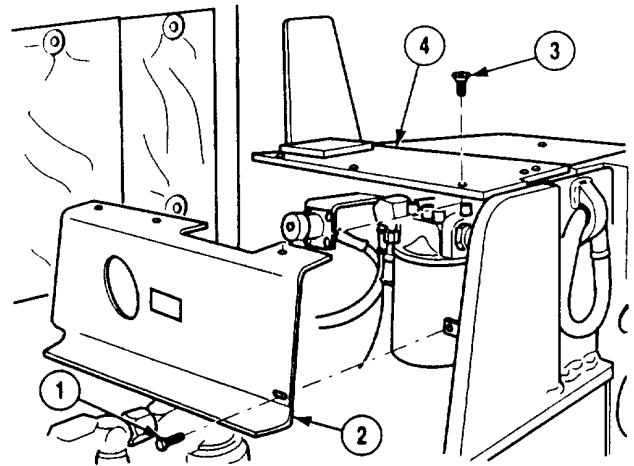
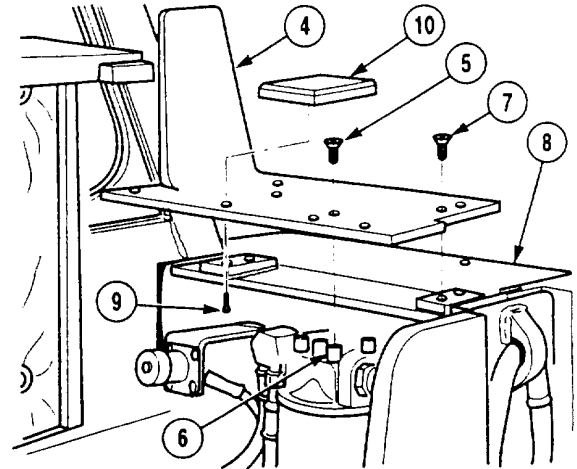
- (1) Install wear pad (10) on load rest (4) with two screws (9).
- (2) Install load rest (4) on fork lift (8) with three screws (7).
- (3) Install two screws (5) on load rest (4) and hydraulic filter head (6).
- (4) Install right-hand access panel (2) on load rest (4) with three screws (3).
- (5) Install screw (1) on right-hand access panel (2).

NOTE

Follow-on Maintenance:

- Close right-hand engine access cover (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK



14-3. SIDE SHIFT ROD SCRAPER REPLACEMENT.

This task covers:

- a. Removal
- b. Cleaning/Inspection
- c. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

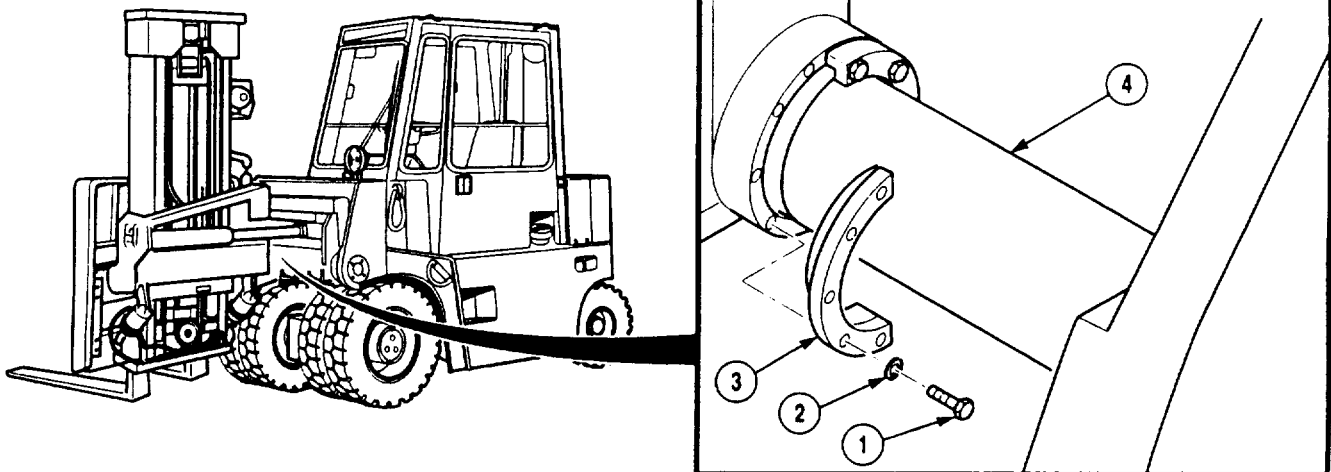
Materials /Parts

Rags, Wiping (Item 19, Appendix C)
Solvent, Drycleaning (Item 20, Appendix C)
Packing, Preformed
Scraper
Washer, Lock (10)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Mast pivoted 90° (TM 10-3930-669-10)

a. Removal

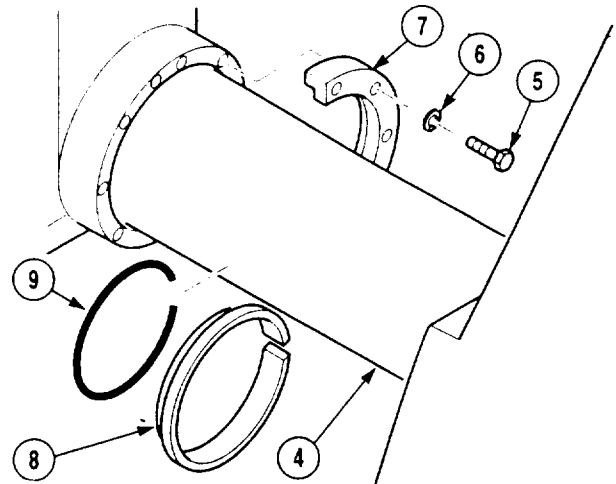


NOTE

There is a left and right side scraper; both are removed the same way. The left side is shown.

- (1) Remove five screws (1), lock washers (2), and cap (3) from side shift rod (4). Discard lock washers.

- (2) Remove five screws (5), lock washers (6), cap (7), scraper (8), and preformed packing (9) from side shift rod (4). Discard lock washers, preformed packing, and scraper.



b. Cleaning/ Inspection.

WARNING

- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

- (1) Clean all metal parts with drycleaning solvent.
- (2) Dry all parts with wiping rags.
- (3) Inspect all parts for breaks, cracks, burrs, and sharp edges.
- (4) Replace all damaged parts.

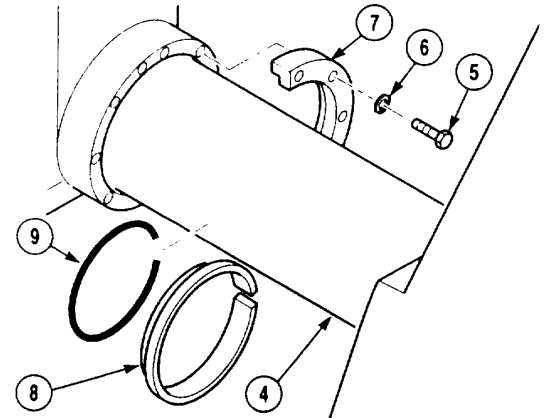
14-3. SIDE SHIFT ROD SCRAPER REPLACEMENT (CONT).

c. Installation.

NOTE

- When installing preformed packing and scraper, off-set the ends for proper operation.
- Ensure preformed packing and scraper are positioned properly in grooves of cap.

(1) Install preformed packing (9), scraper (8), cap (7), five lock washers (6), and screws (5) on side shift rod (4).



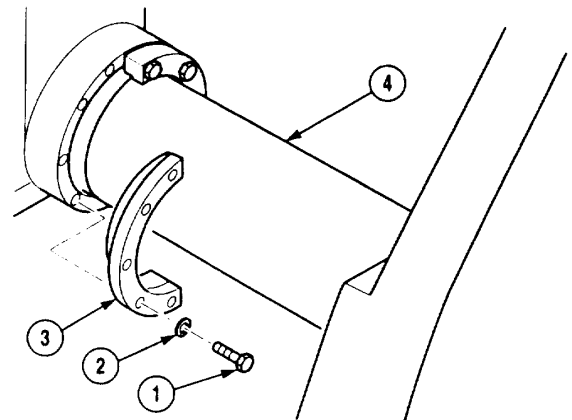
(2) Install cap (3), five lock washers (2), and screws (1) on side shift rod (4).

NOTE

Follow-on Maintenance:

- Pivot mast to front position (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK



14-4. SIDE SHIFT CHAIN ADJUSTMENT.

This task covers:

- a. Chain Tension Adjustment b. Side Shift Adjustment

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

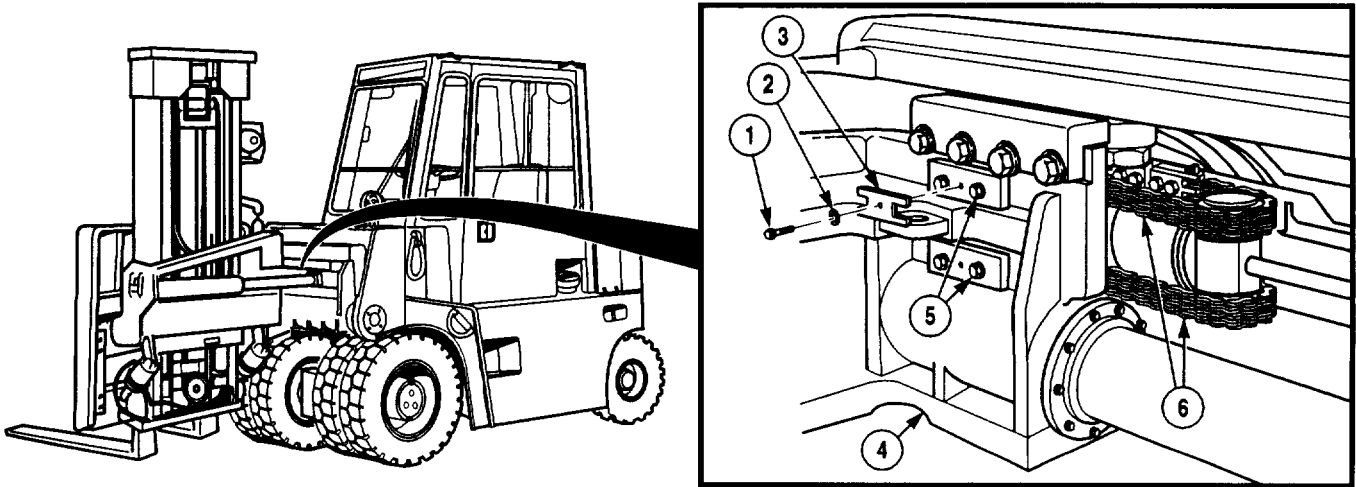
Materials /Parts

Rags, Wiping (Item 19, Appendix C)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parked on level surface (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Mast pivoted 90 degrees (TM 10-3930-669-10)
Mast side shifted (TM 10-3930-669-10)
Carriage raised 3 in. (76.2 mm)
(TM 10-3930-669-10)

a. Chain Tension Adjustment

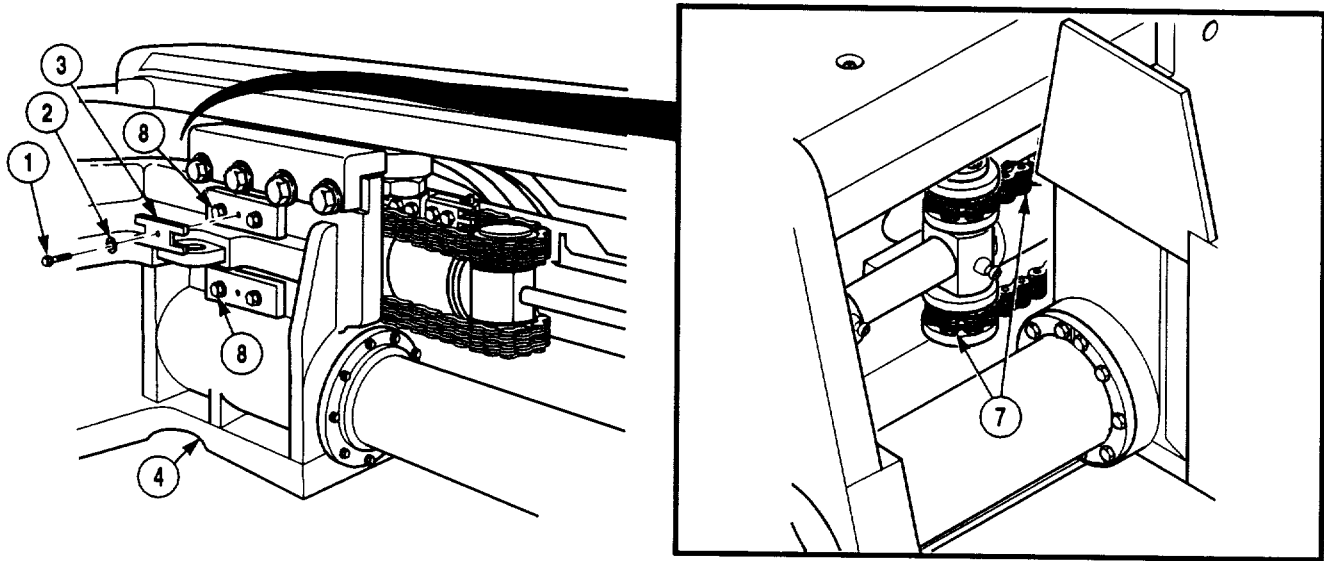


WARNING

All personnel must stand clear during lifting operations. A swinging or shifting load may cause injury or death to personnel.

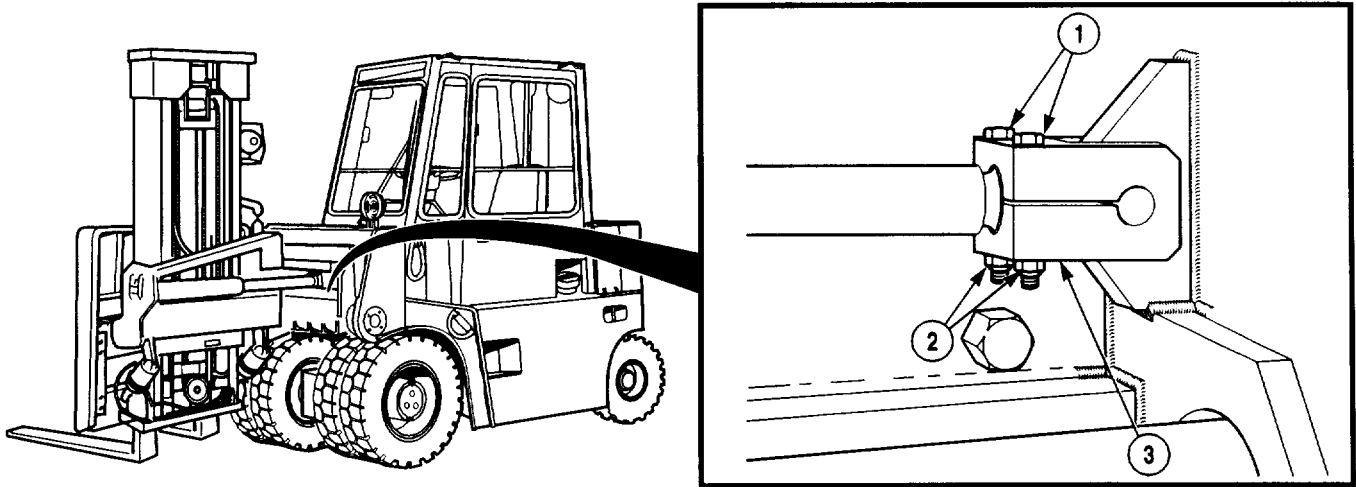
- (1) Remove two screws (1), washers (2), and locking plates (3) from support (4).
- (2) Start engine (TM 10-3930-669-10).
- (3) Shift carriage to right side (TM 10-3930-669-10).
- (4) Stop engine (TM 10-3930-669-10).
- (5) Tighten or loosen two screws (5), as required, until two chains (6) are tight.

14-4. SIDE SHIFT CHAIN ADJUSTMENT (CONT).



- (6) Start engine (TM 10-3930-669-10).
- (7) Using side shift, move mast to left to relieve tension on two chains (7).
- (8) Stop engine (TM 10-3930-669-10).
- (9) Tighten or loosen two screws (8), as required, until two chains (7) are tight.
- (10) Install two locking plates (3) on support (4) with two washers (2) and screws (1).

b. Side Shift Adjustment.



- (1) Start engine (TM 10-3930-669-10).
- (2) Raise carriage 3 in. (76.2 mm) (TM 10-3930-669-10).
- (3) Shift mast fully to right (TM 10-3930-669-10).
- (4) Tilt mast to vertical position using level device (Para 17-6).
- (5) Pivot mast fully to right to gain access to two screws (1) and nuts (2) on clevis (3) (TM 10-3930-669-10).

14-4. SIDE SHIFT CHAIN ADJUSTMENT (CONT).

(6) Position straight bar (4) against vertical portion of forks (5).

(7) Measure distance from face of tire rim (6) at points closest to forks (5).

NOTE

- If measurement A is equal to 1-7/8 to 2-1/8 in. (47.625 to 53.975 mm), proceed to Step (8).
- If measurement is not equal to 1-7/8 to 2-1/8 in. (47.625 to 53.975 mm), adjust side shift. Repeat Steps (6) and (7).

(8) Stop engine (TM 10-3930-669-10).

(9) Loosen two screws (1) and nuts (2) on clevis (3).

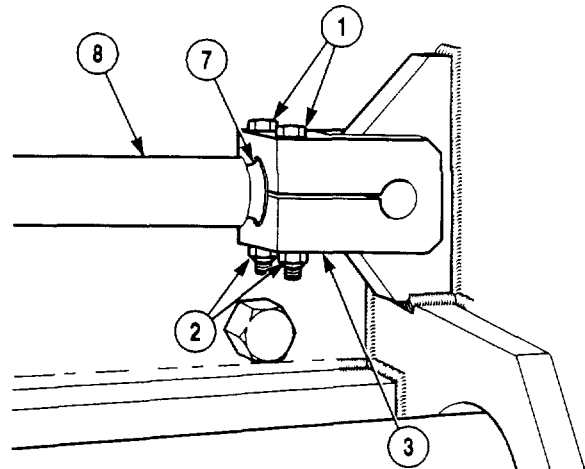
(10) Using wrench, turn wrench point (7) and adjust rod (8) length until measurement A equals 1-7/8 to 2-1/8 in. (47.625 to 53.975 mm).

(11) Tighten two nuts (2) on screws (1).

NOTE

Follow-on Maintenance:

- Pivot mast to front (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).



END OF TASK

CHAPTER 15

BODY AND CAB MAINTENANCE

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15-1. INTRODUCTION.

This chapter contains maintenance instructions for removing, replacing, repairing, and installing body and cab components authorized by the Maintenance Allocation Chart (MAC) at the Unit Maintenance level.

15-2. CAB POSITIONING/REPLACEMENT.

This task covers:

- | | | |
|-------------------------|------------|-----------------|
| a. Service Positioning | b. Removal | c. Installation |
| d. Service Installation | | |
-

INITIAL SETUP*Tools and Special Tools*

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Device, Lifting (2,000 lb)

Materials/Parts

Cable Ties (Item 4, Appendix C)
Cap and Plug Set (Item 5, Appendix C)
Tags, Identification (Item 21, Appendix C)
Tape (Item 26, Appendix C)
Pin, Cotter (8)
Washer, Lock (2)
Washer, Lock

Personnel Required

Two

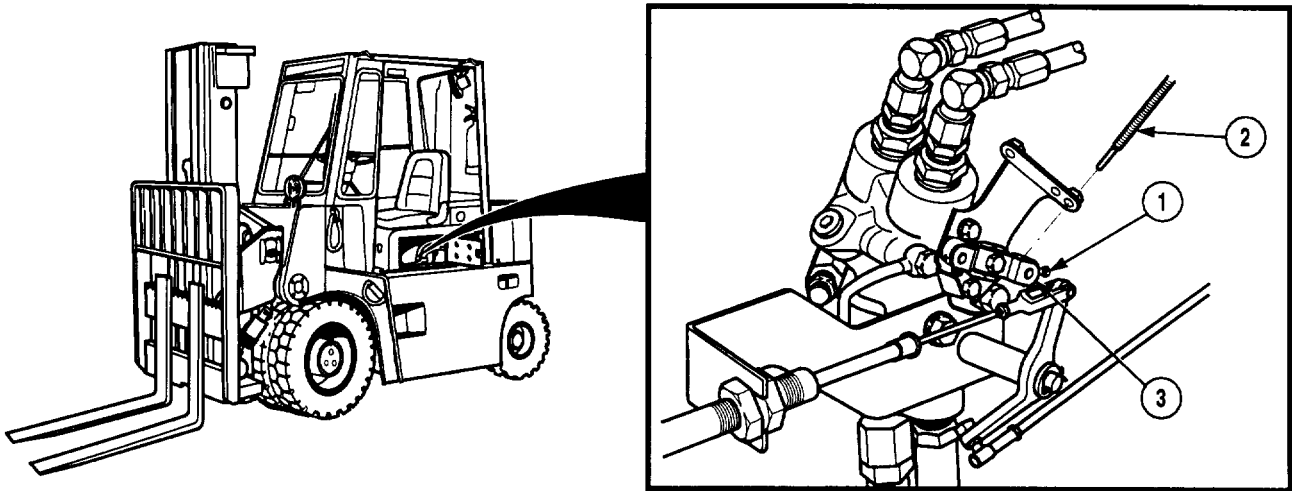
Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Mast pivoted 90° (TM 10-3930-669-10)
(Removal Only)
Right-hand engine access cover removed
(Para 15-8)
Load rest removed (Para 14-2)
(Removal Only)

Equipment Condition

Battery box removed (Para 15-15)
(Removal Only)
Oil filter tray removed (Para 4-13)
(Removal Only)
Cab floor plate removed (Para 15-12)
(Removal Only)
Front work light removed (Para 7-28)
(Removal Only)
Rear work light removed (Para 7-29)
Drive axle oil cooler removed (Para 10-2)
Cab ground cable removed (Para 7-53)
(Removal Only)
Left-hand rear engine access cover removed
(Para 15-10) (Removal Only)
Muffler removed (Para 5-2) (Removal Only)
Cab door removed (Para 15-3)
Cab engine access door opened
(TM 10-3930-669-10)
(Service Positioning Only)
Right-hand engine panel removed (Para 15-9)
Right-hand ventilation panel removed
(Para 6-3)
Engine ventilation panel removed (Para 6-2)

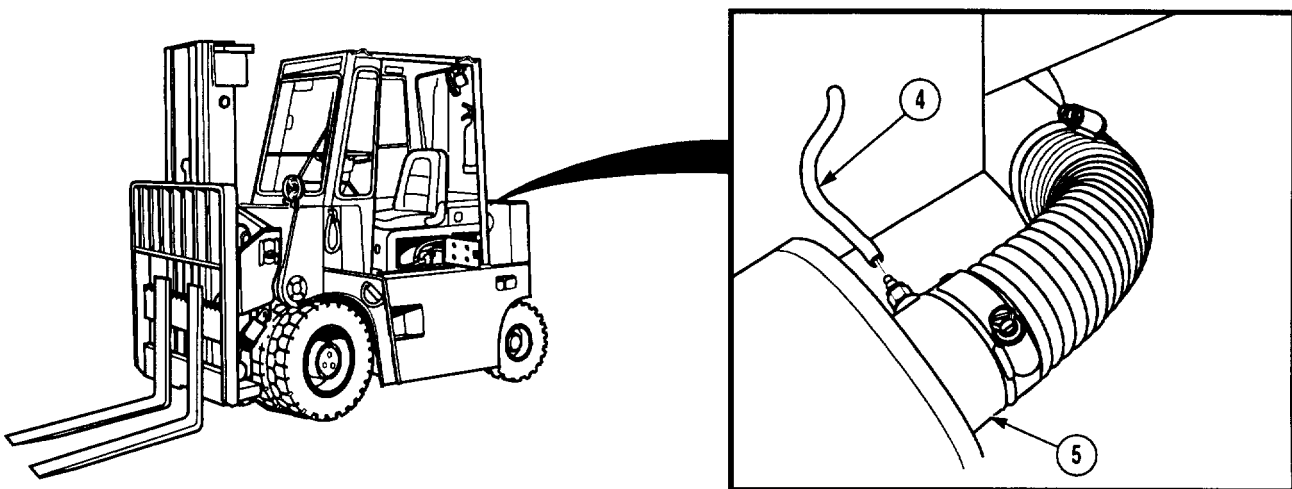
a. Service Positioning.



NOTE

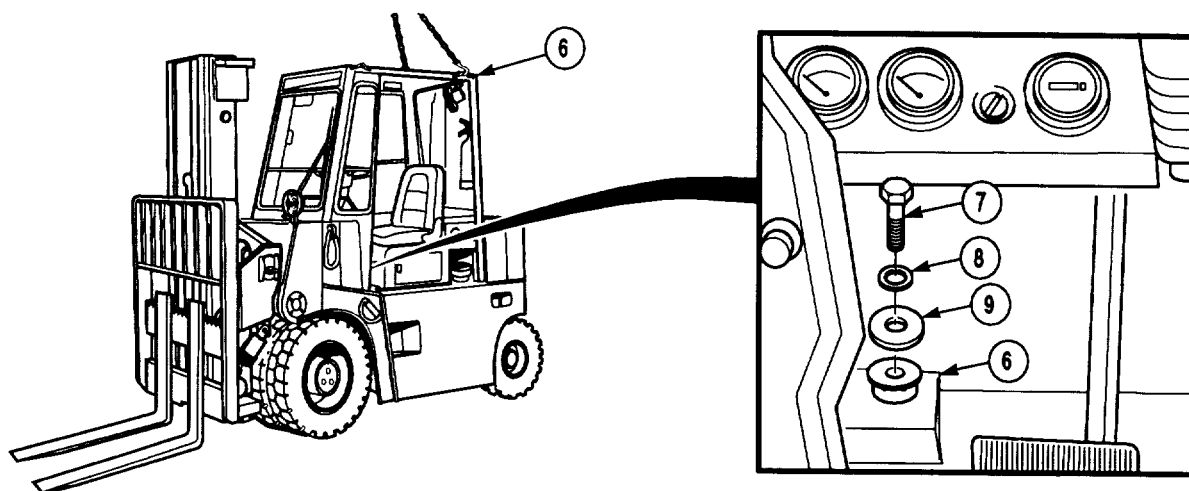
- Note positioning of cab assembly left rear corner on forklift prior to removal.
- Tag and mark all wires prior to removal.
- Tag and mark all cables prior to removal.
- Remove cable ties as required.
- If cab is to be raised only for servicing, proceed to Step (1).
- If cab is to be removed, proceed to **b. Removal.**

(1) Loosen screw (1) and remove cable (2) from clevis (3).



(2) Disconnect hose (4) from air cleaner assembly (5).

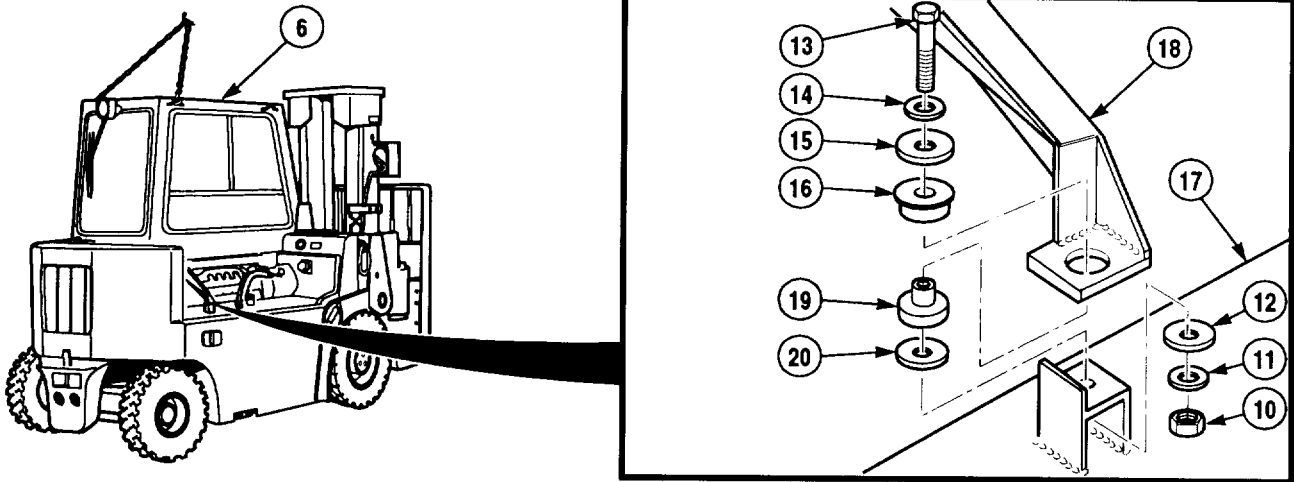
15-2. CAB POSITIONING/REPLACEMENT (CONT).



WARNING

Cab weighs 1,010 lbs (458 kg). Attach suitable lifting device prior to removal or installation to prevent possible injury to personnel.

- (3) Attaching lifting device to cab (6), remove screw (7), washer (8), and washer (9) from cab.



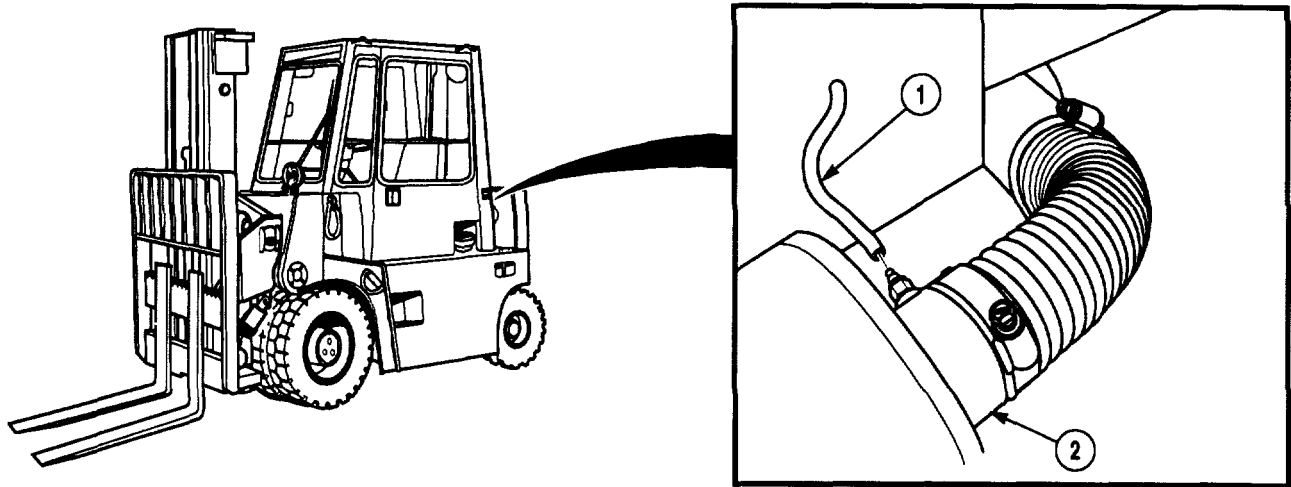
NOTE

Right front washers and nut should remain in position to stabilize the cab.

- (4) Loosen three nuts (10), washers (11), washers (12), screws (13), washers (14), washers (15), and mounts (16) on forklift (17).
- (5) Remove two rear nuts (10), washers (11), and washers (12) from rear mounting points (18).
- (6) With the aid of an assistant, lift rear of cab (6) from forklift (17) approximately 6 in. (15.24 cm).
- (7) Removing two mounts (19), mounts (16), washers (15), washers (14), screws (13), and washers (20) from rear cab mounting points (18) of forklift (17) and position two rear cab mounting points on wood blocks.
- (8) Verify stability of wood blocks prior to removing lifting device from cab (6).

15-2. CAB POSITIONING/REPLACEMENT (CONT).

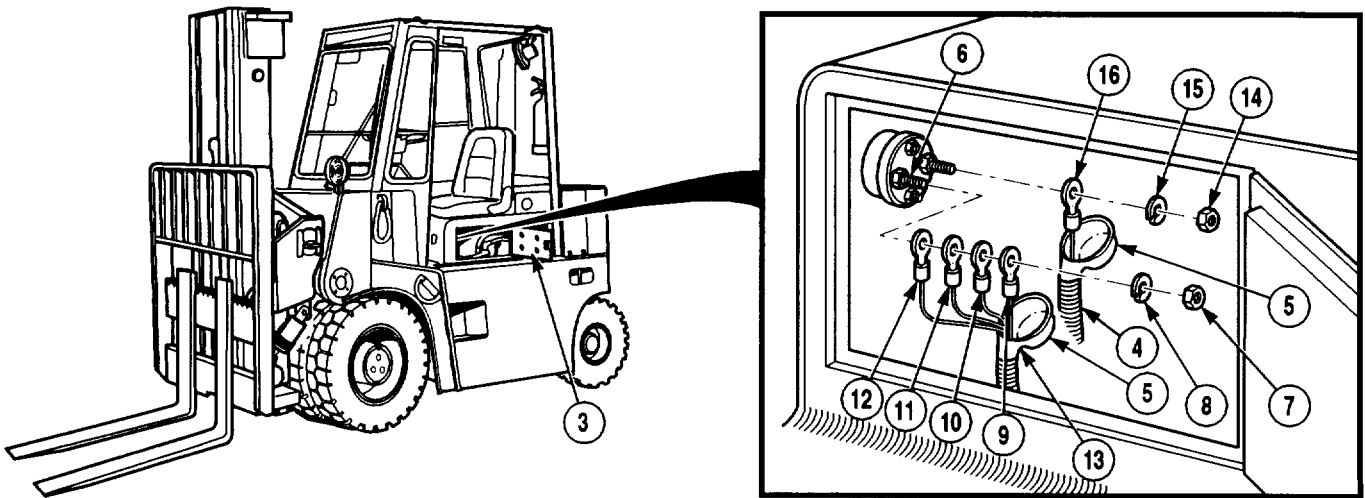
b. Removal.



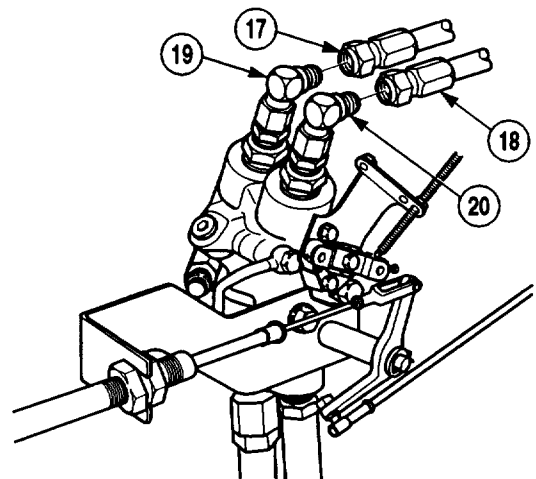
NOTE

- Note positioning of cab assembly left rear corner on forklift prior to removal.
- Tag and mark all wires prior to removal.
- Tag and mark all cables prior to removal.
- Remove cable ties as required.
- Cap and plug all hoses and fittings after removal.

(1) Remove hose (1) from air cleaner assembly (2).

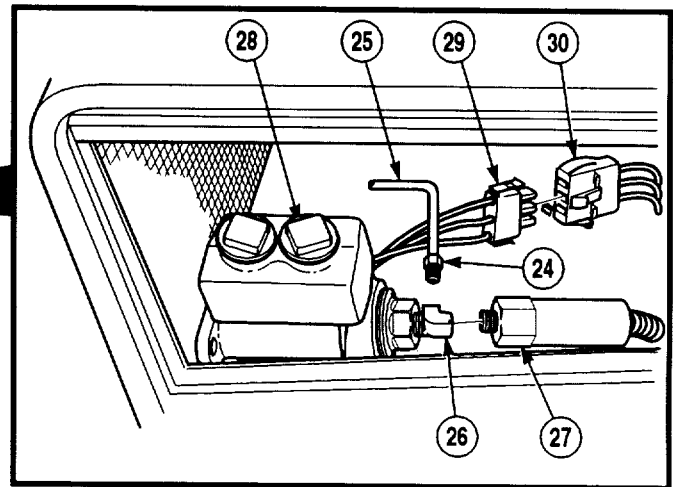
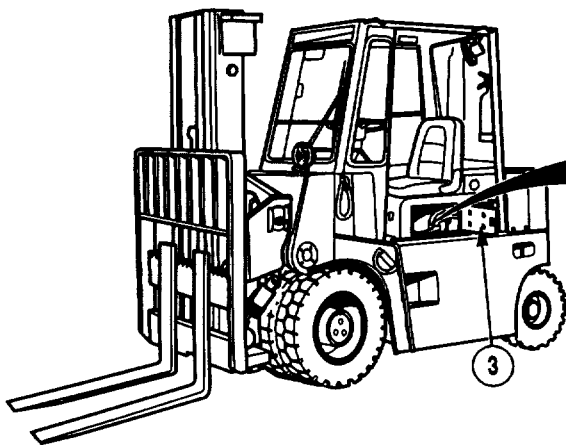
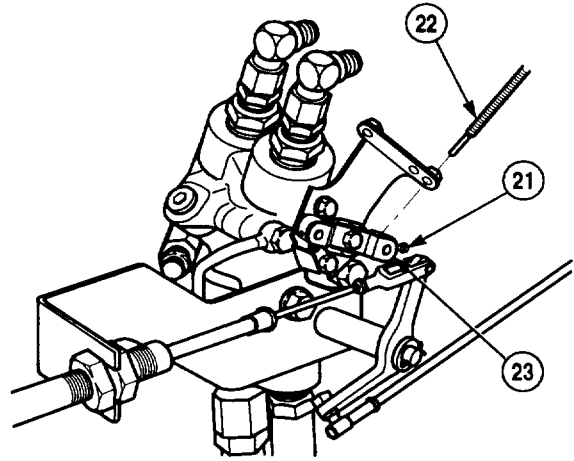


- (2) Opening cab engine access panel (3), locate wire harness (4).
- (3) Pull back red covers (5) from main power switch (6).
- (4) Remove nut (7), lock washer (8), and four wires (9, 10, 11, and 12) from main power switch (6). Discard lock washer.
- (5) Remove wires (9, 10, 11, and 12) from harness assembly (13).
- (6) Remove nut (14), lock washer (15), and wire (16) from main power switch (6). Discard lock washer.
- (7) Position wires (9, 10, 11, 12, and 16) clear of components that will be removed with the cab.
- (8) Remove hoses (17 and 18) from two fittings (19 and 20).

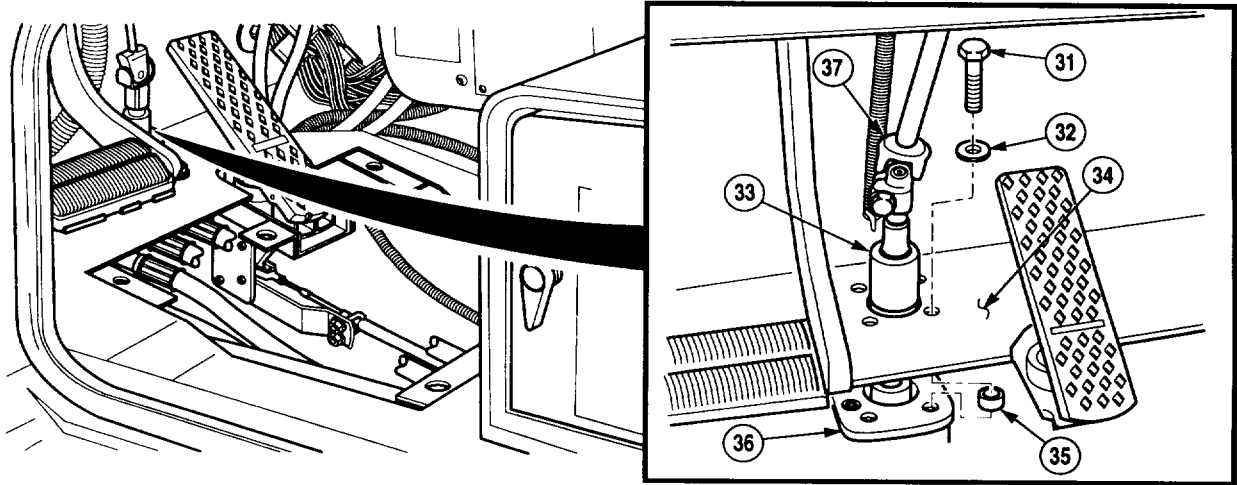


15-2. CAB POSITIONING/REPLACEMENT (CONT).

- (9) Loosen screw (21) and remove cable (22) from clevis (23).
- (10) Position cable (22) back to prevent damage



- (11) Loosen fitting (24) and remove brake line (25) from fitting (26).
- (12) Remove brake pressure switch (27) from master cylinder (28).
- (13) Disconnect connector P21 (29) from connector S21 (30).
- (14) Close cab engine access panel (3).

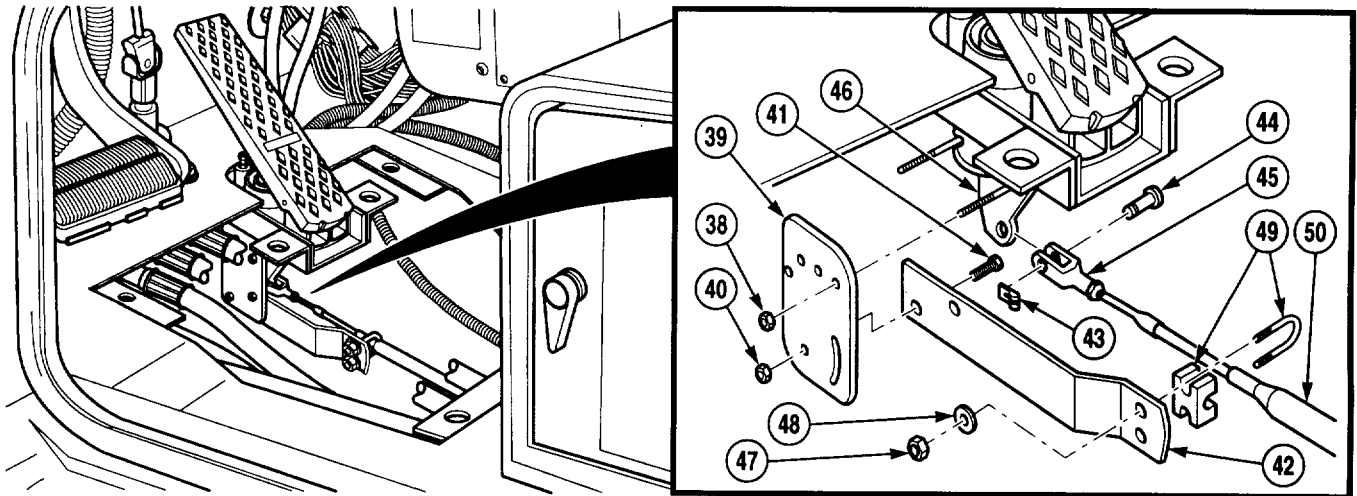


NOTE

- Steering control pump will drop slightly after removal of mounting hardware. Ensure spacers between steering control shaft and floor are retrieved for later use.
- Steering shaft will be removed from the steering pump when the cab is removed from the forklift.

(15) Remove four screws (31) and washers (32) from steering control shaft (33) and cab floor (34).

(16) Remove four spacers (35) and steering control pump (36) from steering control shaft (33) and steering column linkage (37).



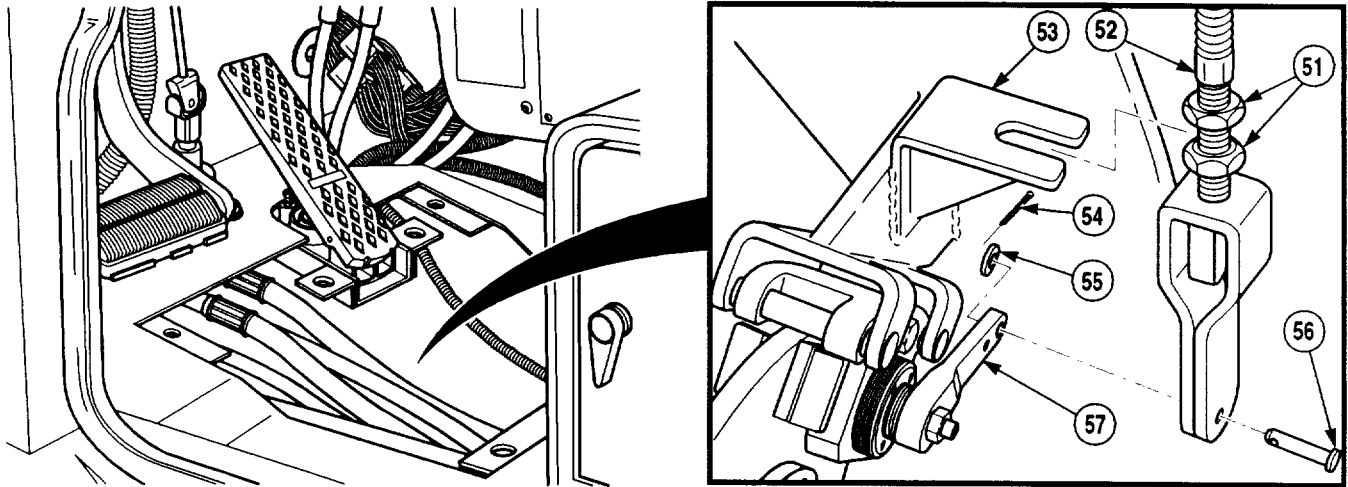
(17) Remove two nuts (38) from plate (39).

(18) Remove two nuts (40), screws (41), and plate (39) from bracket (42).

(19) Remove clip (43), pin (44), and clevis (45) from throttle bracket (46). Discard cotter pin.

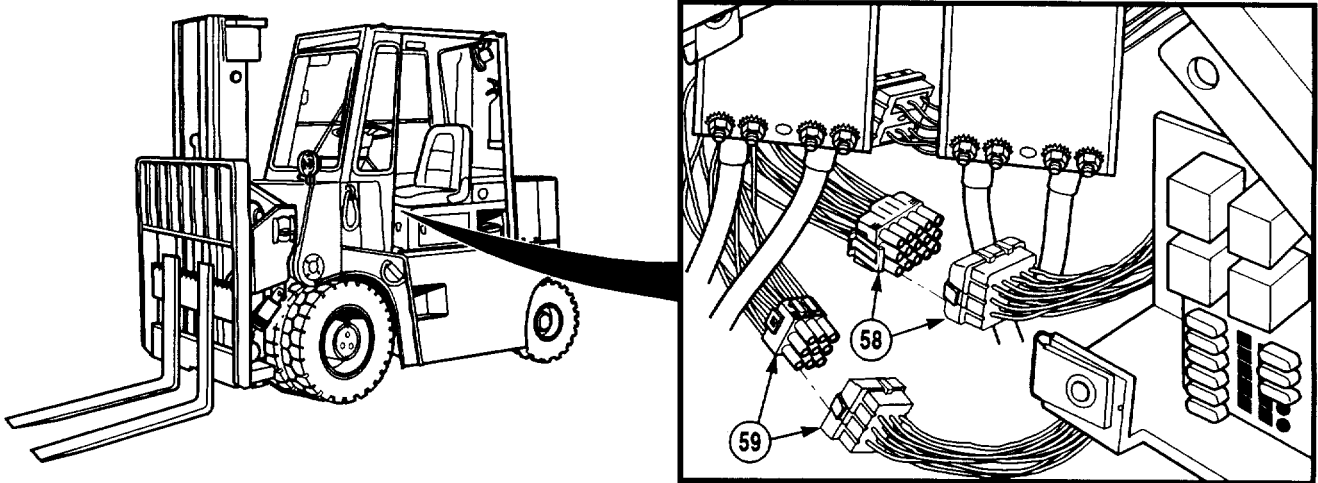
(20) Remove two nuts (47), two washers (48), clamp (49), and cable (50) from bracket (42).

15-2. CAB POSITIONING/REPLACEMENT (CONT).

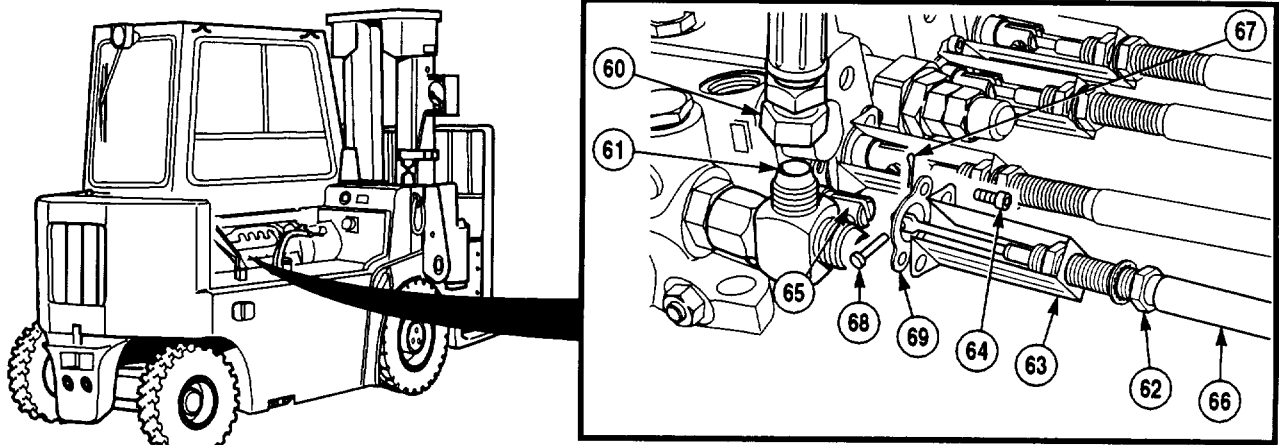


(21) Loosen two nuts (51) and remove parking brake cable (52) from bracket (53).

(22) Remove cotter pin (54), washer (55), pin (56), and parking brake cable (52) from brake lever (57). Discard cotter pin.



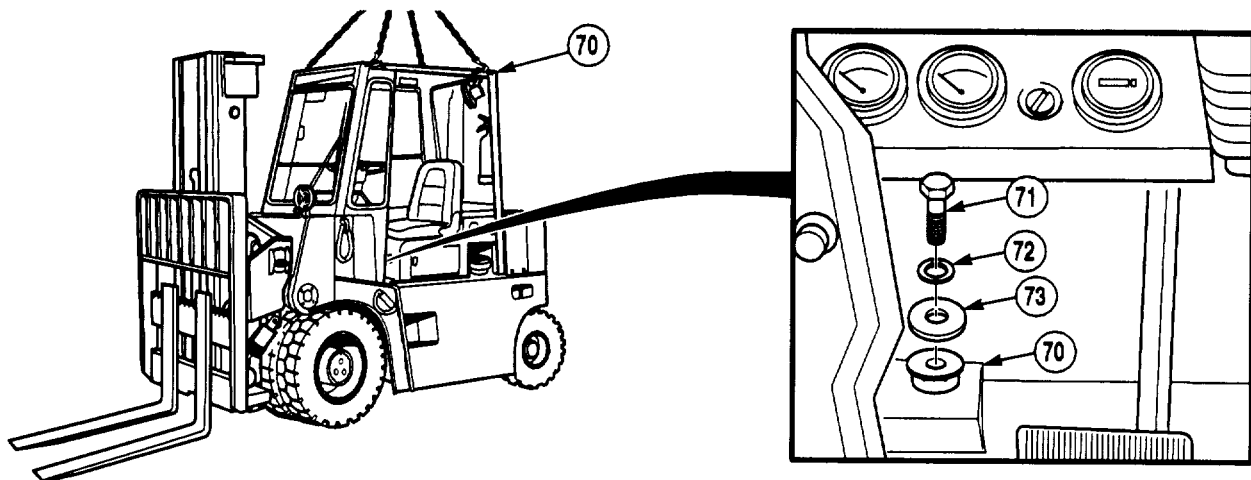
(23) Disconnect cab wiring harness connectors (58 and 59). Position two connectors clear of components that will be removed with the cab.



NOTE

Pivot cable shown. All others are the same.

- (24) Remove hose (60) from fitting (61).
- (25) Loosen nut (62) from bracket (63).
- (26) Remove two screws (64) from bracket (63) and stack valve (65).
- (27) Slide bracket (63) up cable (66) and remove cotter pin (67), pin (68), and cable from stack valve (65).
- (28) Remove gasket (69) from stack valve (65).

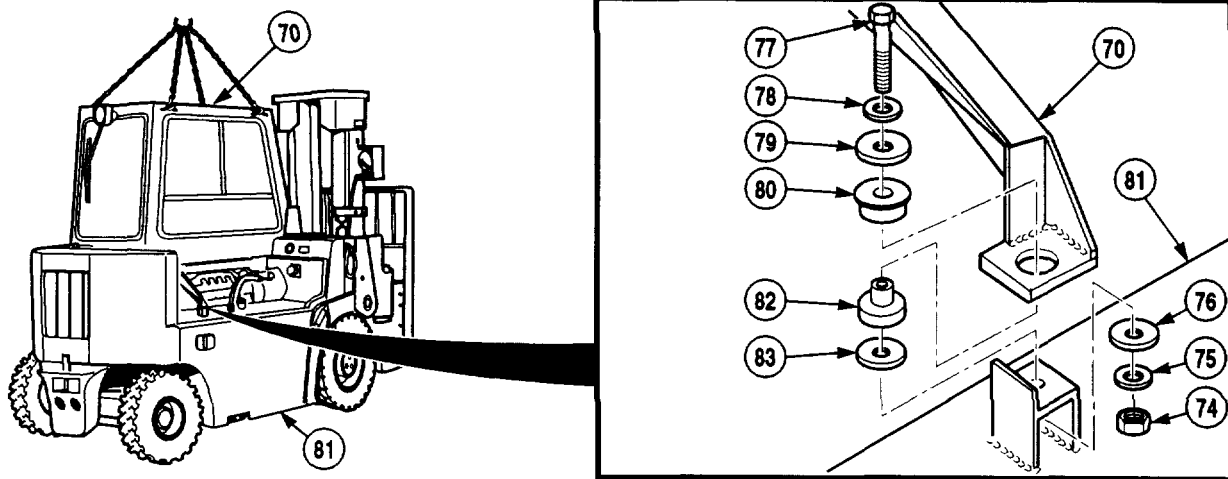


WARNING

Cab weighs 1,010 lbs (458 kg). Attach suitable lifting device prior to removal or installation to prevent possible injury to personnel.

- (29) Attach lifting device to cab (70) and remove screw (71), washer (72), and washer (73) from cab.

15-2. CAB POSITIONING/REPLACEMENT (CONT).



(30) Remove three nuts (74), washers (75), washers (76) from two rear mounting points and right front mounting point (70).

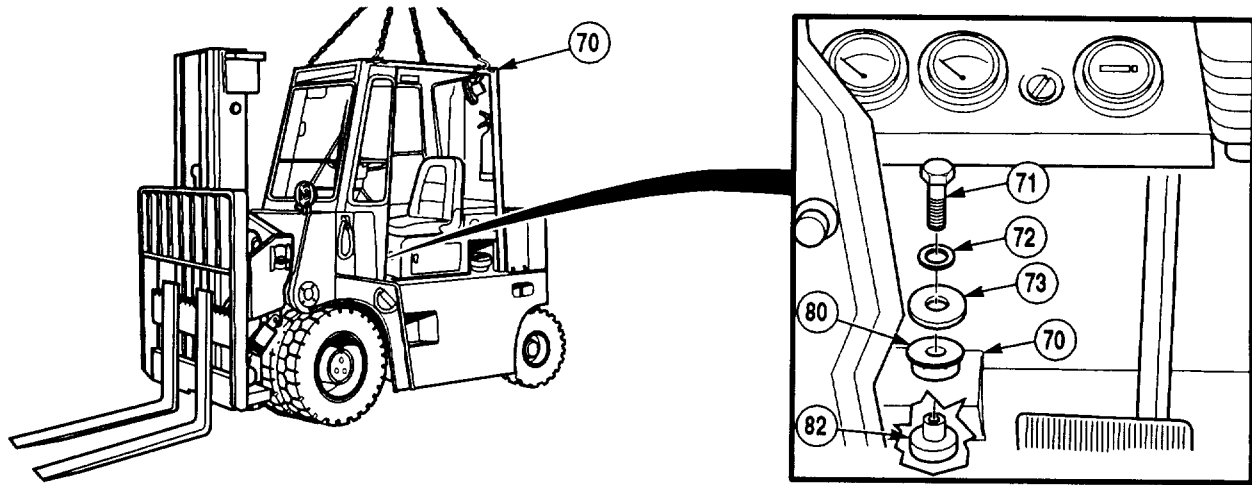
(31) With the aid of an assistant, remove cab (70) from forklift (81).

NOTE

Note position of washers prior to removal.

(32) Remove four mounts (82), mounts (80), three washers (79), washers (78), screws (77), and three washers (83) from mounting points (70) on forklift (81).

c. Installation.



NOTE

- During installation keep approximately .25 in. (6.4 mm) space between all parts of cab assembly and forklift assembly, and ensure cab is aligned as noted during removal.
- If cab was placed in service position, proceed to d: Service Installation.
- If cab was removed, proceed to Step (1).

- (1) With the aid of an assistant, install lifting device on cab (70) and lift to gain access to mounting points under cab.

WARNING

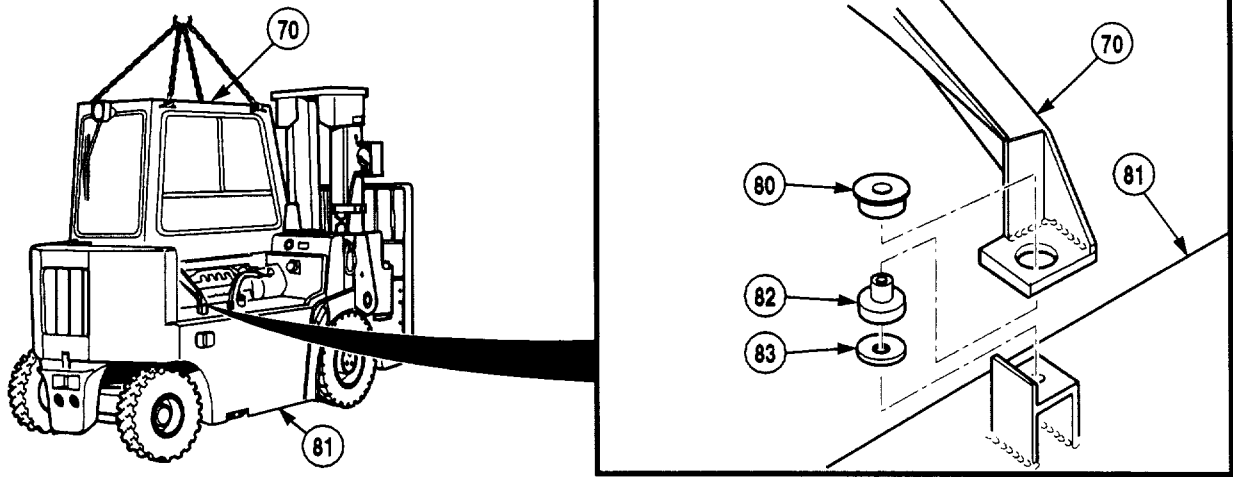
Cab weighs 1,010 lbs (458 kg). Attach suitable lifting device prior to removal or installation to prevent possible injury to personnel.

NOTE

Steering shaft will have to be installed on the steering pump when the cab is installed on the forklift.

- (2) Position mount (82), mount (80), washer (73), washer (72), and screw (71) inside cab (70).

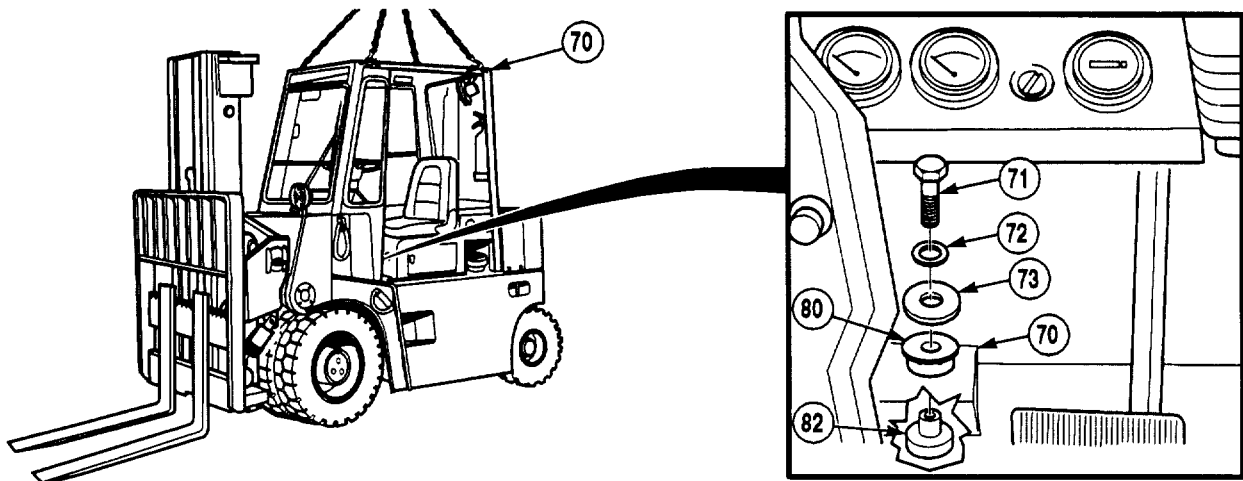
15-2. CAB POSITIONING/REPLACEMENT (CONT).



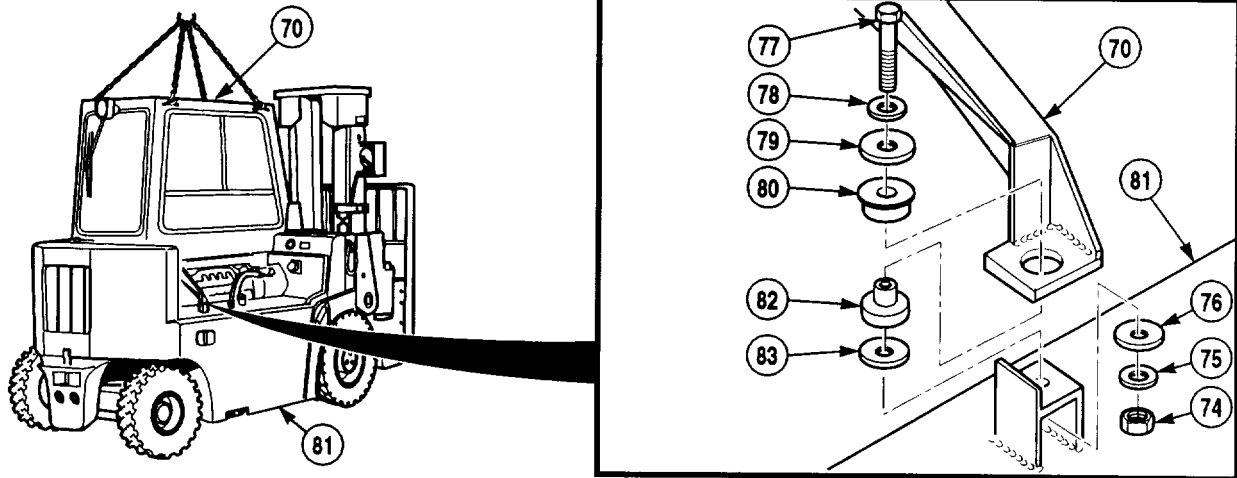
- (3) Install three mounts (82) on cab (70) with three mounts (80).
- (4) Position three washers (83) on forklift (81), as noted during removal and lower cab (70) until just touching forklift.

NOTE

Align bolt holes of cab mounts with bolt holes of forklift before allowing full weight to settle and final tightening of screws.



- (5) Install mount (82), mount (80), washer (73), washer (72), and screw (71) inside cab (70) and remove lifting device.



(6) With the aid of an assistant, install cab (70) on forklift (81) with three washers (79), washers (78), screws (77), washers (76), washers (75), and nuts (74).

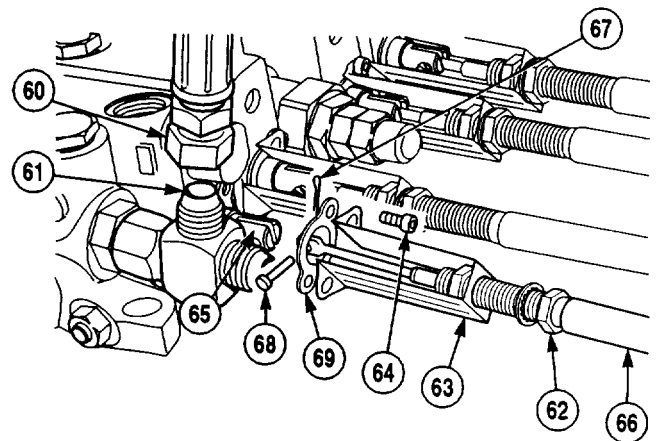
(7) Install gasket (69) on stack valve (65).

(8) Install cable (66) on stack valve (65) with pin (68) and cotter pin (67).

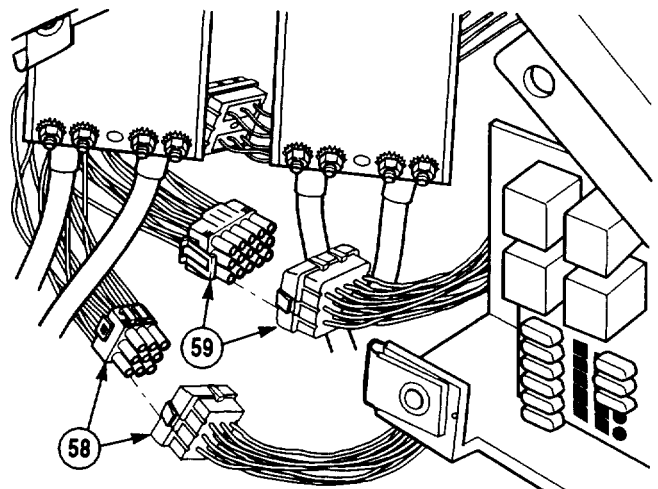
(9) Install bracket (63) on stack valve (65) with two screws (64).

(10) Tighten nut (62) to bracket (63).

(11) Install hose (60) on fitting (61).



(12) Connect cab wiring harness connectors (58 and 59).



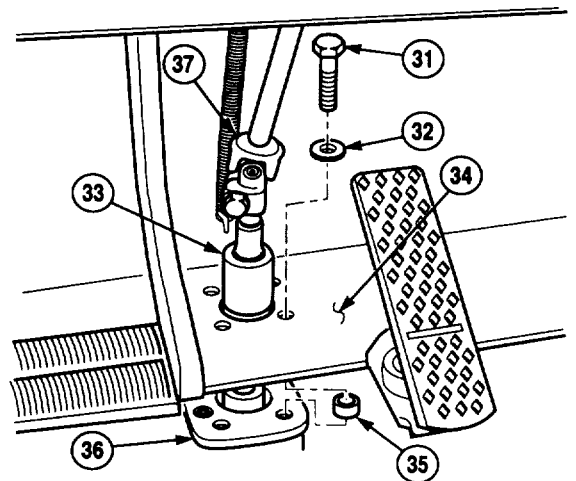
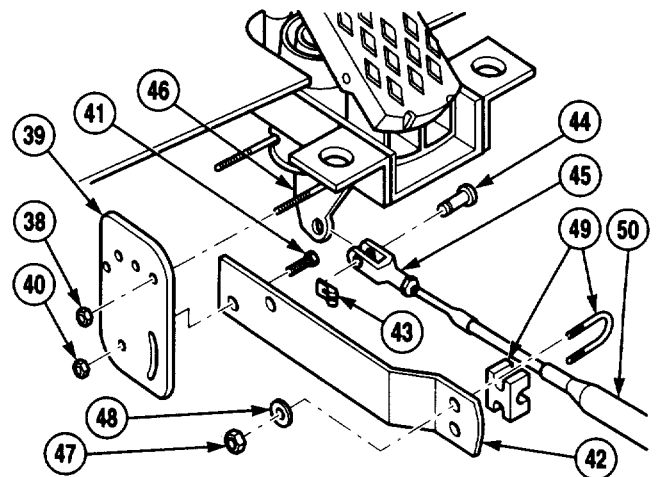
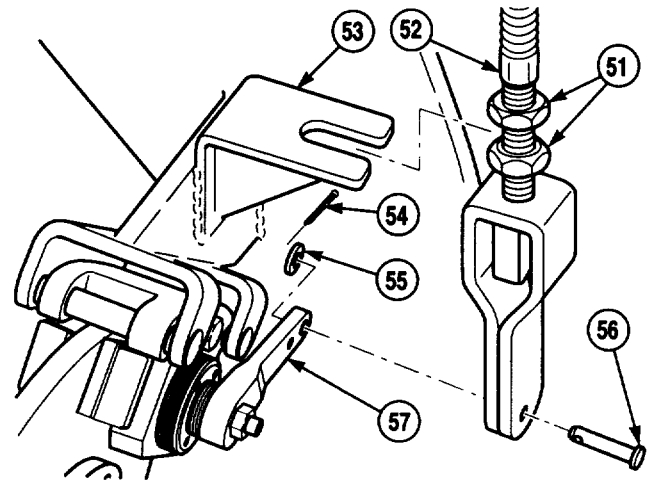
15-2. CAB POSITIONING/REPLACEMENT (CONT).

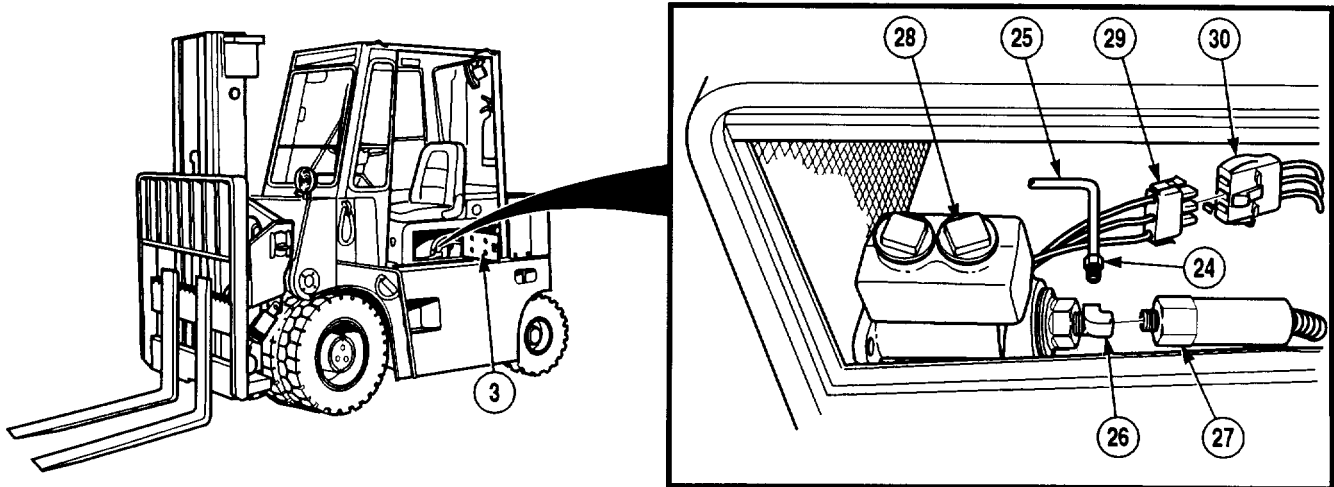
- (13) Install parking brake cable (52) on brake lever (57) with pin (56), washer (55), and cotter pin (54).
- (14) Position parking brake cable (52) in bracket (53). Do not tighten two nuts (51).
- (15) Install cable (50) to bracket (42) with clamp (49), two washers (48), and nuts (47).
- (16) Install clevis (45) on throttle bracket (46) with pin (44) and clip (43).
- (17) Install plate (39) on bracket (42) with two screws (41) and nuts (40).
- (18) Install two nuts (38) in plate (39).

NOTE

- Steering control pump will have to be raised slightly for installation of mounting hardware.
- Ensure spacers are aligned between floor plate and steering column prior to installation.

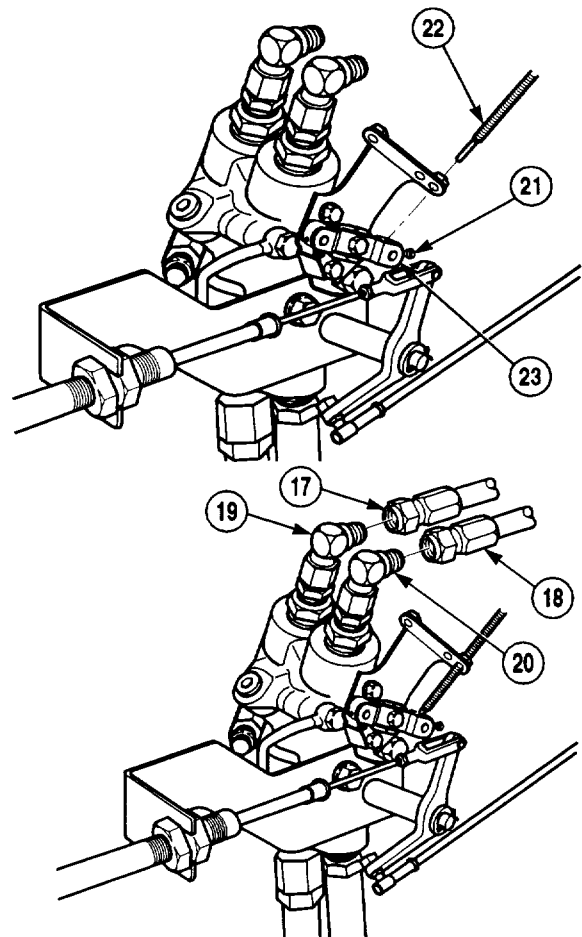
- (19) Position steering control pump (36) and four spacers (35) under steering control shaft (37).
- (20) Install steering control pump (36), with four spacers (35) on steering control shaft (33) and steering column linkage (37) with four washers (32) and screws (31).



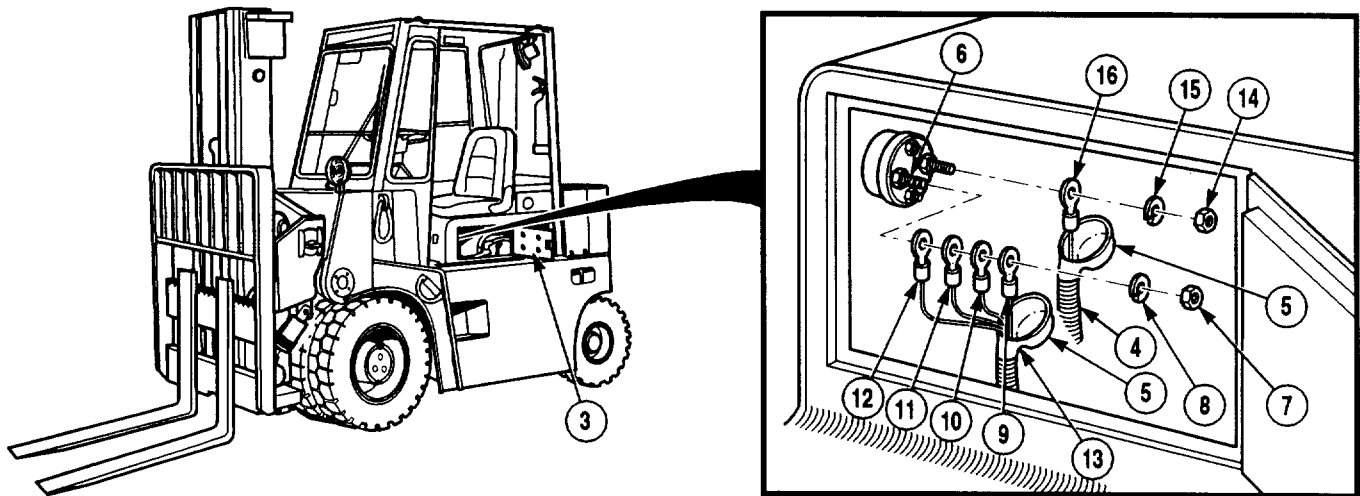


- (21) Open engine access panel (3).
- (22) Connect connector S21 (30) to connector P21 (29).
- (23) Install brake pressure switch (27) to master cylinder (28).
- (24) Install brake line (25) to fitting (26) and tighten fitting (24).
- (25) Install cable (22) on clevis (23) and tighten screw (21).

- (26) Install hoses (17 and 18) on two fittings (19 and 20).



15-2. CAB POSITIONING/REPLACEMENT (CONT).



(27) Install wire (16) of wire harness (4) on main power switch (6) with lock washer (15) and nut (14).

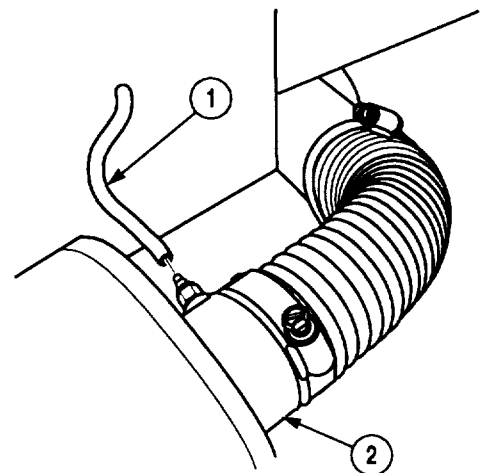
(28) Install wires (9, 10, 11, and 12) in harness assembly (13).

(29) Install wires (9, 10, 11, and 12) on main power switch (6) with lock washer (8) and nut (7).

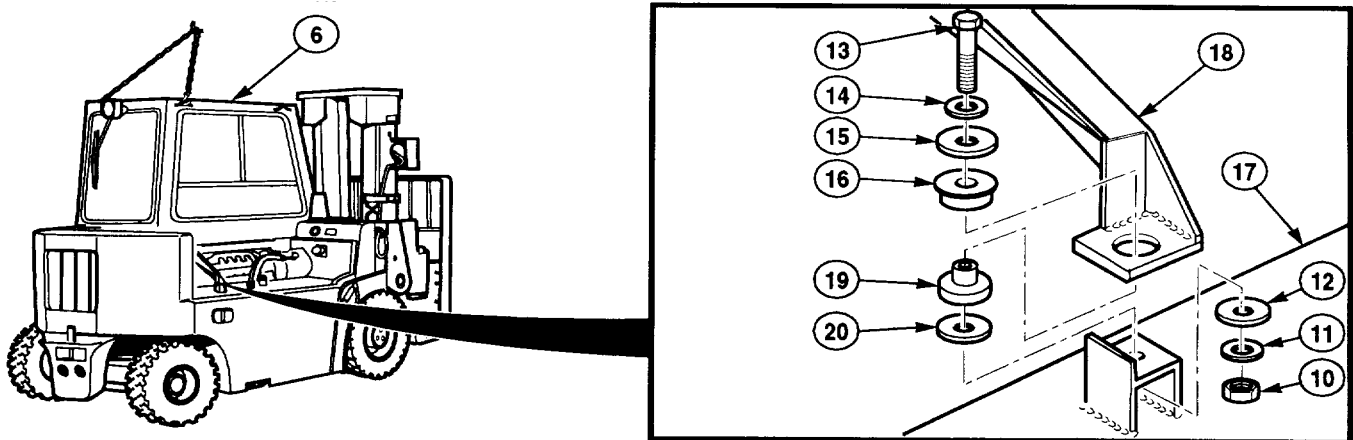
(30) Pull red covers (5) on main power switch (6).

(31) Close engine access panel (3).

(32) Install hose (1) on air cleaner assembly (2).



a. Service Installation.



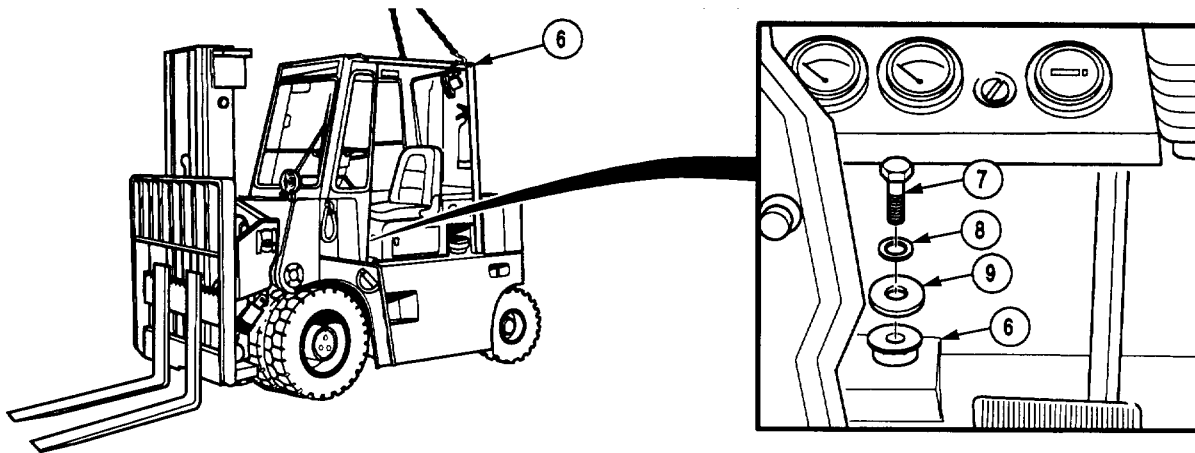
WARNING

Cab weighs 1,010 lbs (458 kg). Attach suitable lifting device prior to removal or installation to prevent possible injury to personnel.

NOTE

During installation keep approximately .25 in. (6.4 mm) space between all parts of cab assembly and forklift assembly, and ensure cab is aligned as noted during removal.

- (1) With the aid of an assistant, install lifting device on cab (6).
- (2) Raising cab (6) with lifting device, remove wood blocks and install two mounts (19) on cab rear mounting points (18) with two mounts (16), washers (15), washers (14), and screw (13).
- (3) Position two washers (20) on forklift (17) and lower cab (6) until just touching forklift and screws (13) pass through washers (20) and frame (17) mount.

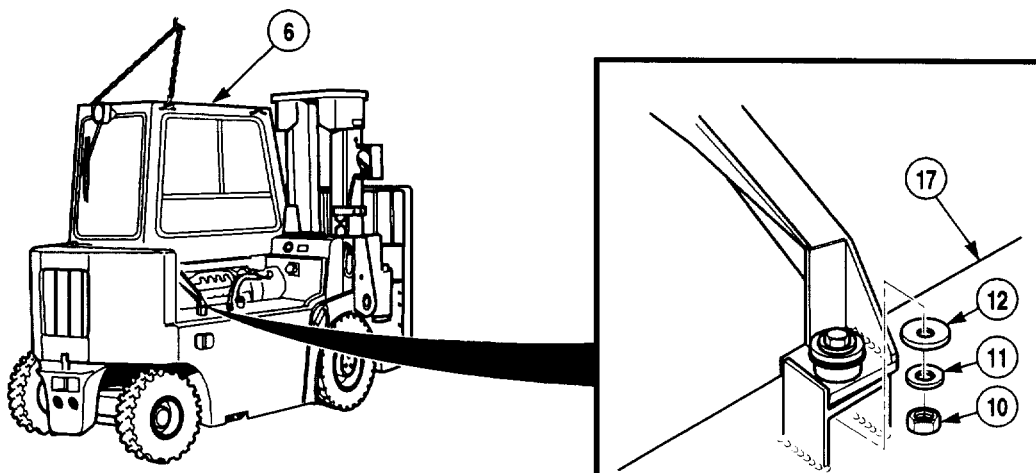


NOTE

Align bolt holes of cab mounts with bolt holes of forklift before allowing full weight to settle and final tightening of screws.

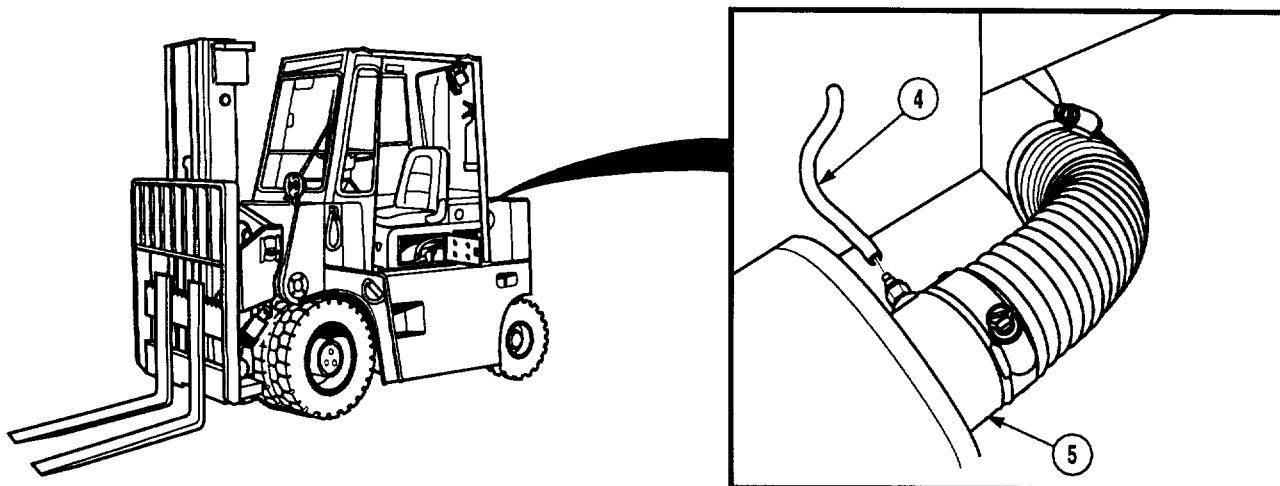
- (4) Align hole in cab (6) with hole in forklift and install washer (9) and washer (8) with screw (7).

15-2. CAB POSITIONING/REPLACEMENT (CONT).

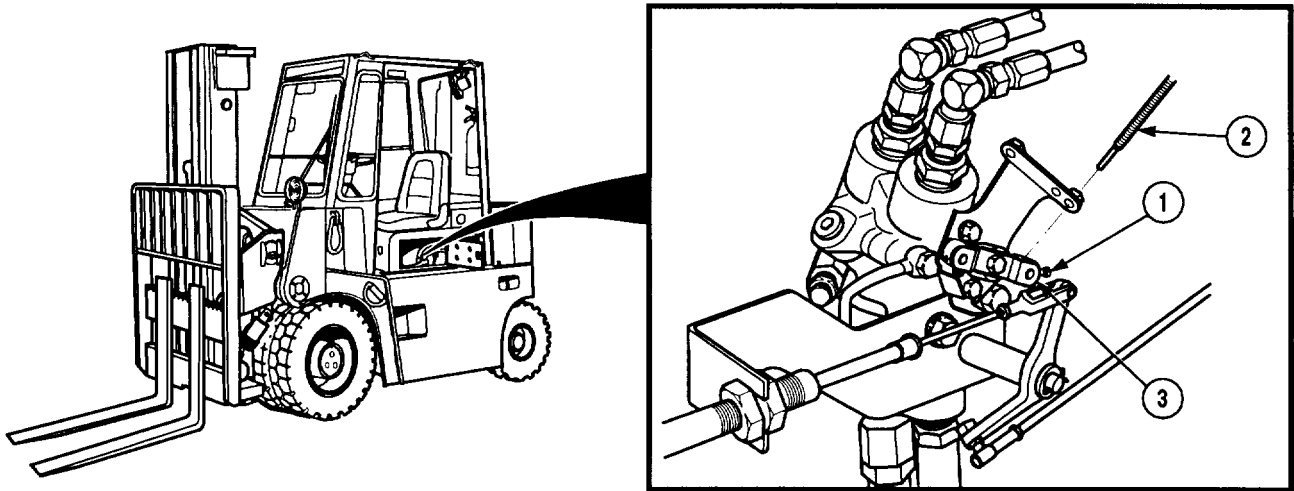


(5) With the aid of an assistant, install cab (6) on forklift (17) with washers (12), washers (11), and nuts (10).

(6) Re-tighten right front mount hardware and remove lifting device from cab (6).



(7) Connect hose (4) to air cleaner assembly (5).



- (8) Install cable (2) on clevis (3) with screw (1). Tighten screw.

NOTE

Follow-on Maintenance:

- Install cab ground cable (Para 7-53)(Removal Only).
- Install muffler (Para 5-2)(Removal Only).
- Adjust Pivot/Shift joystick cable (Para 17-2) (Removal Only)
- Adjust Tilt/Lift joystick cable (Para 17-3) (Removal Only)
- Install right-hand engine access cover (Para 15-8)(Removal Only).
- Install cab floor plate (Para 15-12)(Removal Only).
- Install battery box (Para 15-15)(Removal Only).
- Install oil filter tray (Para 4-13)(Removal Only).
- Install front work light (Para 7-28)(Removal Only).
- Install rear work light (Para 7-29)(Removal Only).
- Install left-hand rear engine access cover (Para 15-10)(Removal Only).
- Install drive axle oil cooler (Para 10-2)(Removal Only).
- Bleed brakes (Para 11-8)(Removal Only).
- Adjust parking brake linkage (Para 11-3)(Removal Only).
- Install load rest (Para 14-2)(Removal Only).
- Close mast (TM 10-3930-669-10)(Removal Only).
- Install cab door (Para 15-3).
- Install right-hand engine panel (Para 15-9).
- Install right-hand ventilation panel (Para 6-5).
- Install engine ventilation panel (Para 6-2).
- Close mast (TM 10-3930-669-10)(Removal Only).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

15-3. CAB DOOR REPLACEMENT.

This task covers:

- a. Removal

b. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)

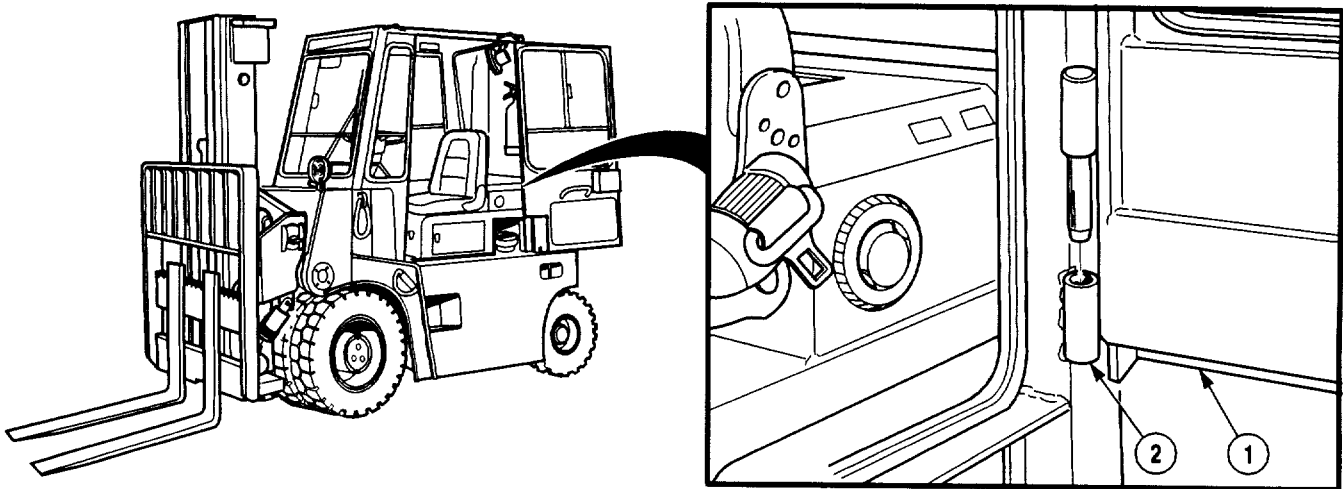
Personnel Required

Two

Materials/Parts

Washer, Lock

a. Removal.



- (1) Open cab door (1).

WARNING

Cab door weighs 85 lbs (39 kg). Use the aid of an assistant for removal to prevent possible injury to personnel.

NOTE

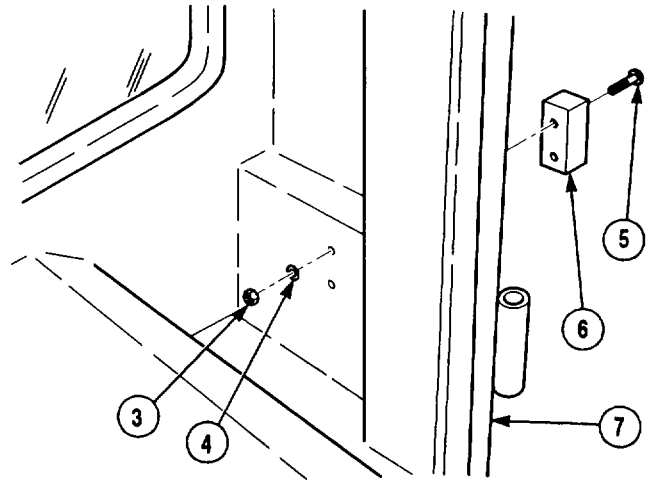
Cab door must be fully opened prior to removal from door hinges in order to clear the cab lifting point.

- (2) With the aid of an assistant, remove door (1) from door hinges (2) by lifting door upward.

- (3) Remove two nuts (3), washers (4), screws (5) and door stop (6).

b. Installation.

- (1) Install door stop (6) on cab (7) with two screws (5), washers (4), and nuts (3).



- (2) With the aid of an assistant, install door (1) on door hinges (2).

WARNING

Cab door weighs 85 lbs (39 kg). Use the aid of an assistant for installation to prevent possible injury to personnel.

NOTE

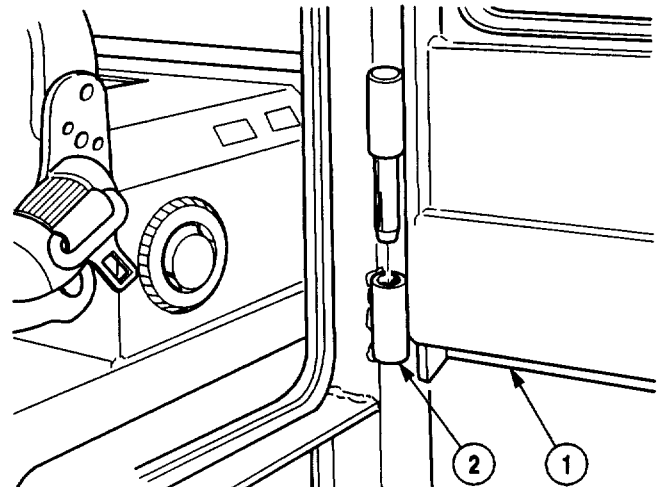
Cab door must be fully opened prior to installation on door hinges in order to clear the cab lifting point.

- (3) Close door (1).

NOTE

Follow-on Maintenance:

- Remove wheel chocks (TM 10-3930-669-10).



END OF TASK

15-4. CAB DOOR LATCH REPLACEMENT.

This task covers:

- a. Removal b. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

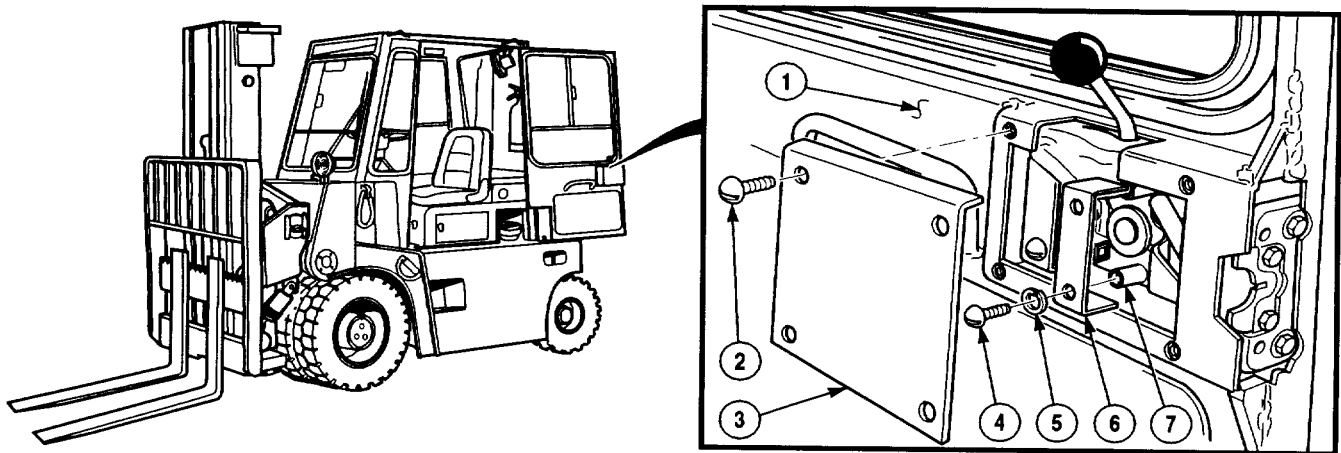
Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)

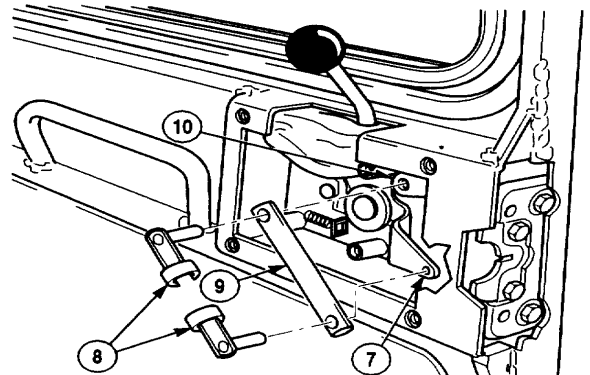
Materials/Parts

Washer, Lock (4)

a. Removal.



- (1) Open door (1).
- (2) Remove four screws (2) and cover (3) from door (1).
- (3) Remove four screws (4), lock washers (5), and two brackets (6) from handle (7). Discard lock washers.
- (4) Remove two clips (8) and pin (9) from latch (10) and handle (7).



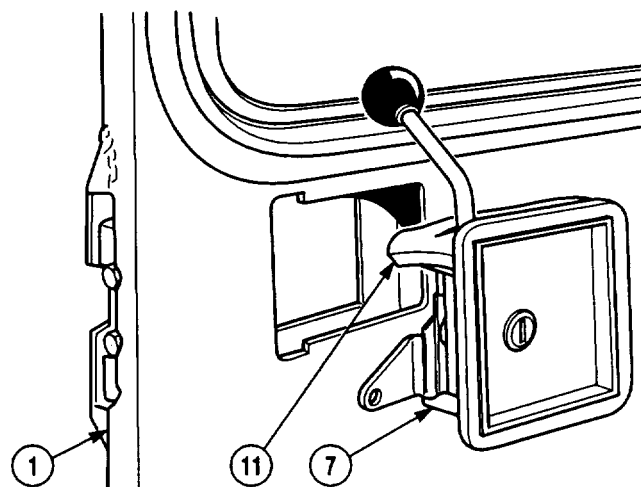
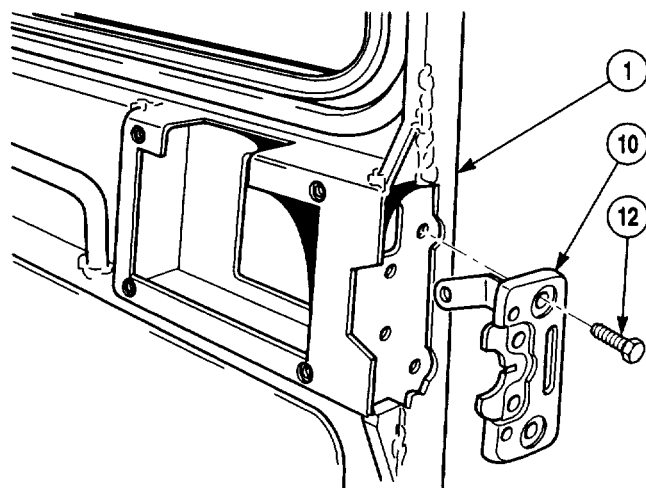
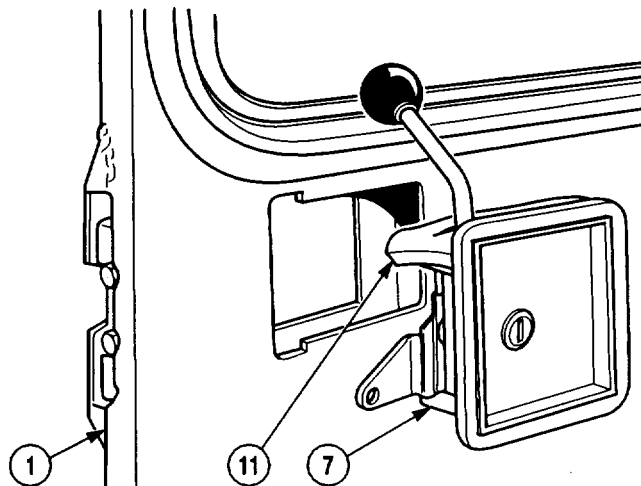
- (5) Remove handle (7) and padding (11) from door (1).

- (6) Remove four screws (12) and latch (10) from door (1).

b. Installation.

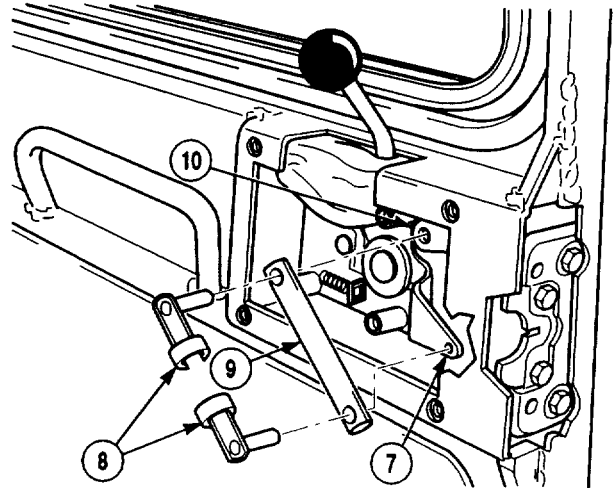
- (1) Install latch (10) on door (1) with four screws (12).

- (2) Position padding (11) and handle (7) in door (1).

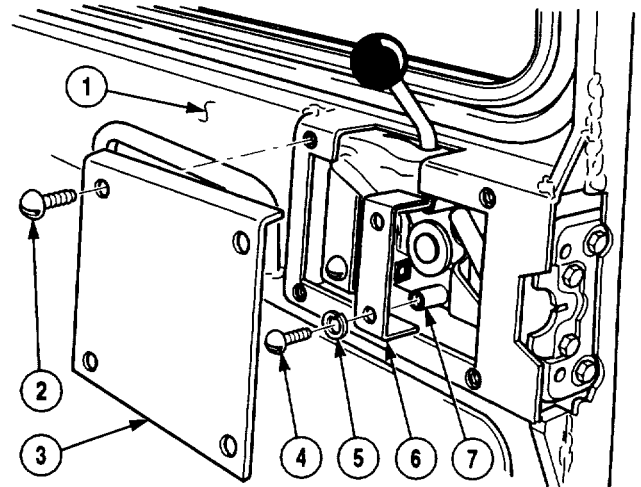


15-4. CAB DOOR LATCH REPLACEMENT (CONT).

- (3) Install pin (9) and two clips (8) on handle (7) and latch (10).



- (4) Install two brackets (6), four lock washers (5), and screws (4) on handle (7).
- (5) Install cover (3) on door (1) with four screws (2).
- (6) Close door (1).



NOTE

Follow-on Maintenance:

- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

15-5. CAB DOOR LATCH POST REPLACEMENT.

This task covers:

- a. Removal b. Cleaning/Inspection c. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Wrench, Torque (0 to 175 lb-ft [0-237 N-m])
(Item 2, Appendix B)

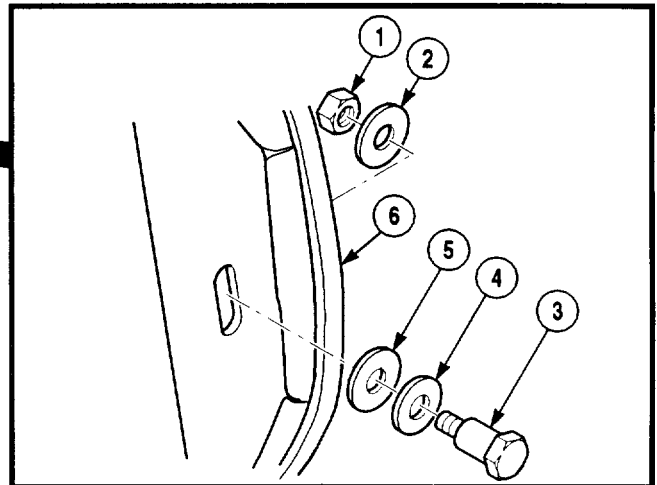
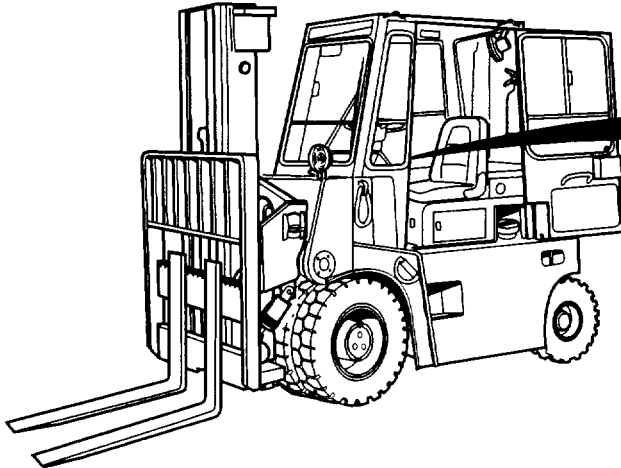
Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Cab door opened (TM 10-3930-669-10)

Materials/Parts

Solvent, Drycleaning (Item 20, Appendix C)

a. Removal.



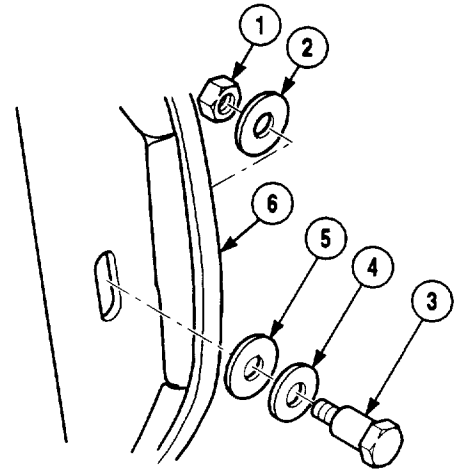
- (1) Remove nut (1) and washer (2) from screw (3).
- (2) Remove screw (3) and washers (4 and 5) from cab (6).

15-5. CAB DOOR LATCH POST REPLACEMENT (CONT).**b. Cleaning/Inspection.****WARNING**

- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

- (1) Clean all parts and air dry.
- (2) Inspect parts for damaged threads, cracks, burrs, and sharp edges.
- (3) Replace all damaged parts.

- c. Installation.** Install screw (3) and two washers (4 and 5) on cab (6) with washer (2) and nut (1). Tighten nuts to 36 lb-ft (49 N•m).

**NOTE**

Follow-on Maintenance:

- Close cab door (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

15-6. CAB DOOR STEP PLATE REPLACEMENT.

This task covers:

- a. Removal b. Installation

INITIAL SETUP

Tools and Special Tools

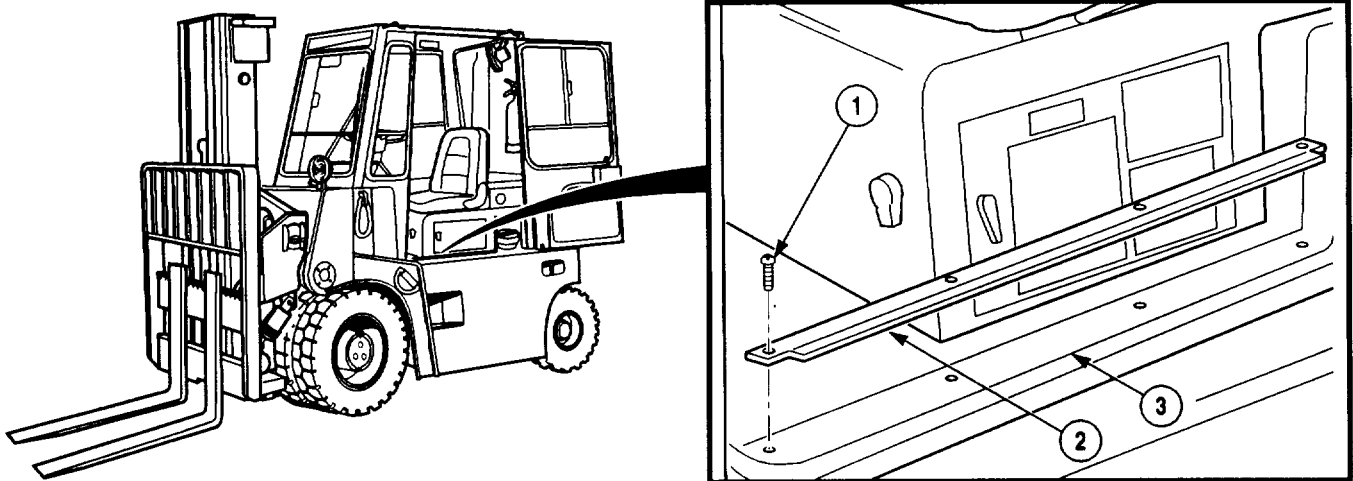
Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Cab door open (TM 10-3930-669-10)

Materials/Parts

Rags, Wiping (Item 19, Appendix C)
Screw, Self-tapping (4)



a. Removal. Remove four self-tapping screws (1) and step plate (2) from cab (3). Discard self-tapping screws.

b. Installation. Install step plate (2) in cab (3) with four self-tapping screws (1).

NOTE

Follow-on Maintenance:

- Close cab door (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

15-7. CAB DOOR SEAL REPLACEMENT.

This task covers:

a. Removal

b. Cleaning/Inspection

c. Installation

INITIAL SETUP*Tools and Special Tools*

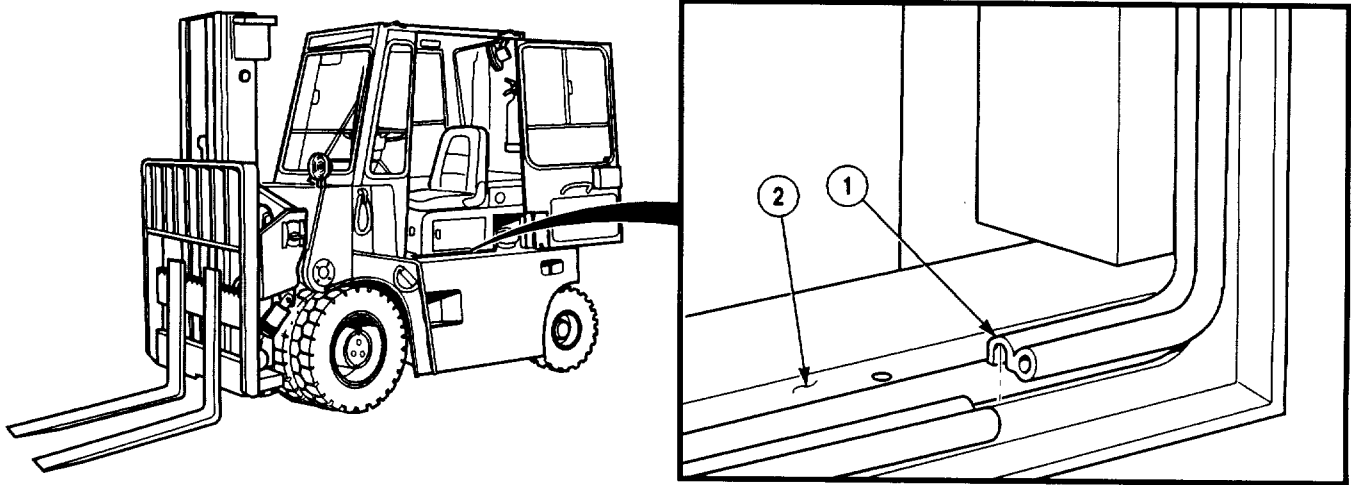
Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Brush, Cleaning (Item 2, Appendix B)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Cab door opened (TM 10-3930-669-10)
Step plate removed (Para 15-6)

Materials /Parts

Detergent (Item 10, Appendix B)
Rag, Wiping (Item 19, Appendix C)
Solvent, Drycleaning (Item 20, Appendix C)



a. Removal. Remove cab door seal (1) from cab (2).

b. Cleaning/Inspection.

WARNING

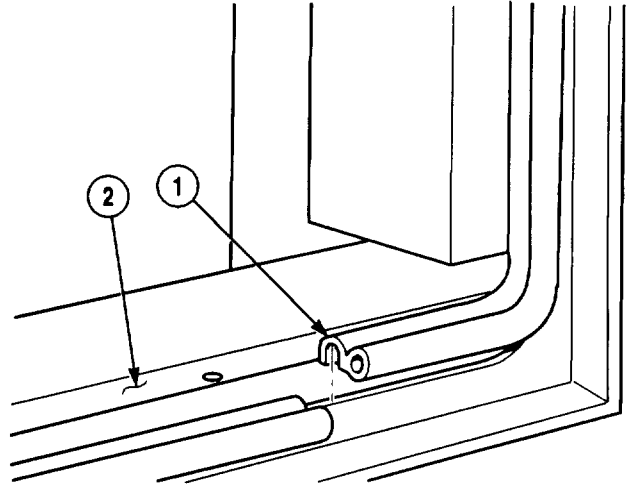
- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

- (1) Clean metal door frame with drycleaning solvent and wipe dry.
- (2) Using a dry brush, clean inside flange of door seal.

(3) Clean outside of seal with mild soap and water.

(4) Replace all damaged parts.

c. Installation. Starting at bottom center of door, install cab door seal (1) on cab (2).



NOTE

Follow-on Maintenance:

- Install step plate (Para 15-6).
- Close cab door (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

15-8. RIGHT-HAND ENGINE ACCESS COVER REPLACEMENT.

This task covers:

- a. Removal b. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

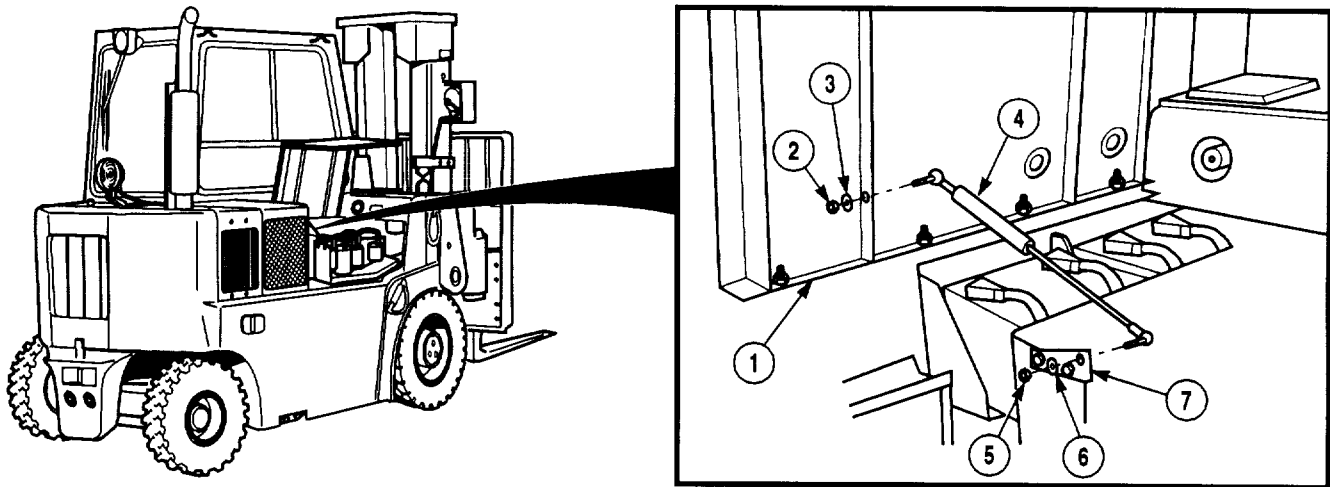
Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)

Personnel Required

Two

a. Removal.



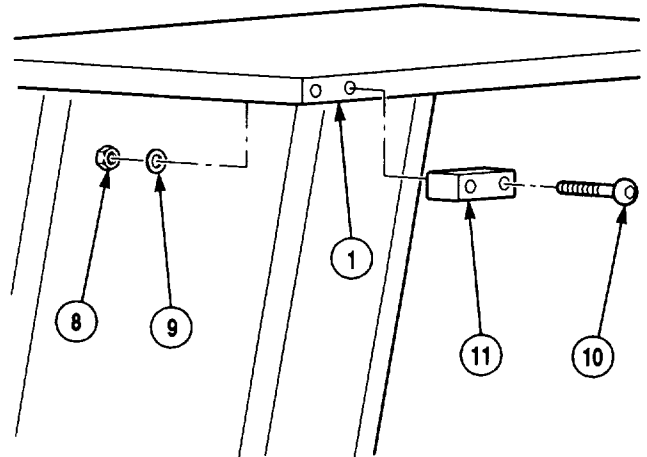
- (1) Open right-hand engine access cover (1).

NOTE

An assistant will be required to support the engine access cover after removal of strut from oil filter tray in Step (2) below.

- (2) Remove nut (2), washer (3), and strut (4) from engine access cover (1).
(3) Remove nut (5), washer (6), and strut (4) from filter tray (7).

- (4) Remove four nuts (8), washers (9), screws (10), and two door stops (11) from engine access cover (1).



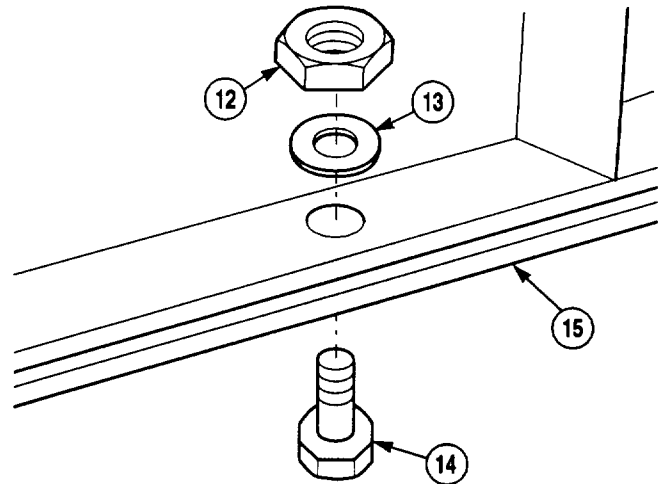
WARNING

Engine access cover weighs 55 lbs (25 kg). Attach suitable lifting device prior to removal to prevent possible injury to personnel.

- (5) With the aid of an assistant, remove four nuts (12), washers (13), screws (14), and engine access cover (1) from mount (15).

b. Installation.

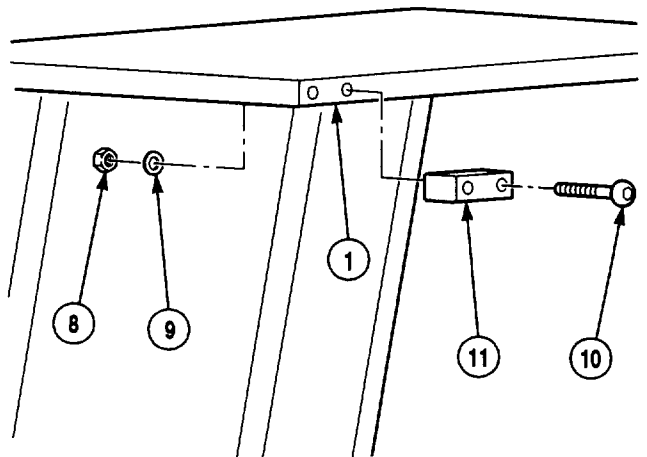
- (1) With the aid of an assistant, install engine access cover (1) on mount (15) with four screws (14), washers (13), and nuts (12).



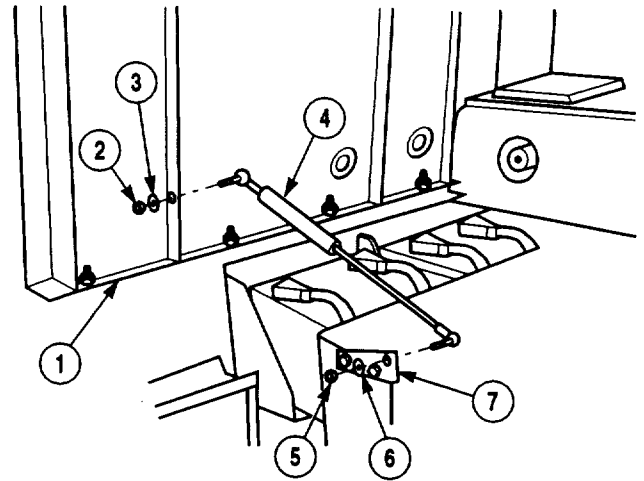
NOTE

An assistant will be required to support the engine access cover while installing the strut in Steps (2) and (3) below.

- (2) Install two door stops (11) on engine access cover (1) with four screws (10), washers (9), and nuts (8).



- (3) Install strut (4) on filter tray (7) with washer (6) and nut (5).
- (4) Install strut (4) to engine access cover (1) with washer (3) and nut (2).
- (5) Close right-hand engine access cover (1).



Follow-on Maintenance:

- END OF TASK**

15-9. RIGHT-HAND ENGINE PANEL REPLACEMENT.

This task covers:

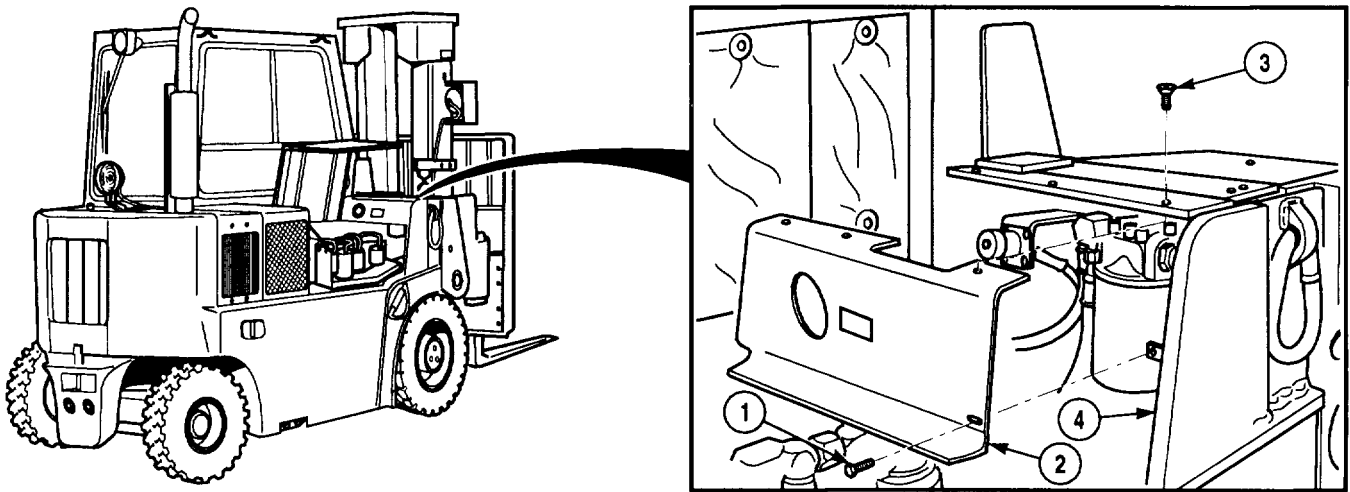
- a. Removal b. Installation

INITIAL SETUP*Tools and Special Tools*

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Right-hand engine access cover opened
(TM 10-3930-669-10)

a. Removal.

- (1) Remove screw (1) from right-hand engine panel (2).
- (2) Remove three screws (3) and right-hand engine panel (2) from forklift (4).

b. Installation.

- (1) Install right-hand engine panel (2) with three screws (3) on forklift (4).
- (2) Install screw (1) on right-hand engine panel (2).

NOTE**Follow-on Maintenance:**

- Close right-hand engine access cover (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

15-10. LEFT-HAND REAR ENGINE ACCESS COVER REPLACEMENT.

This task covers:

- a. Removal b. Installation

INITIAL SETUP

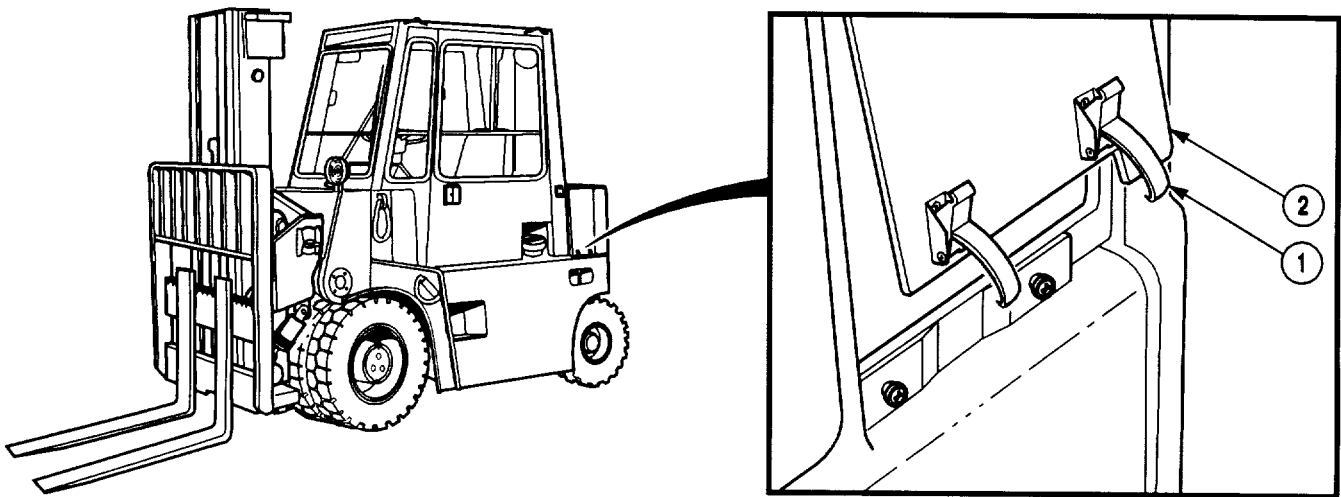
Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

Equipment Condition

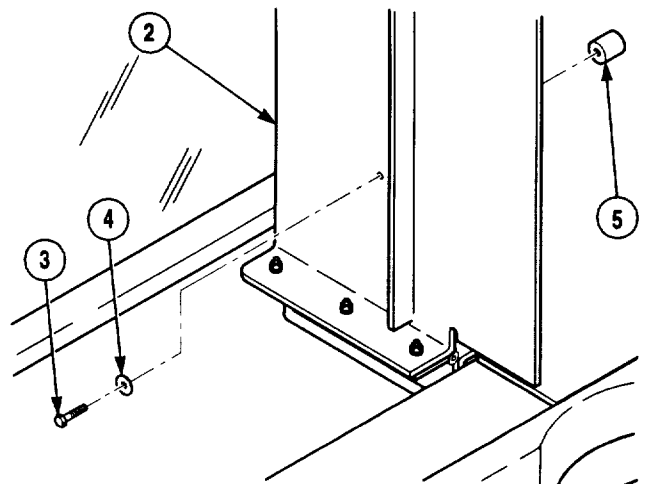
Engine OFF (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Rear work light and bracket removed
(Para 7-29)

a. Removal.

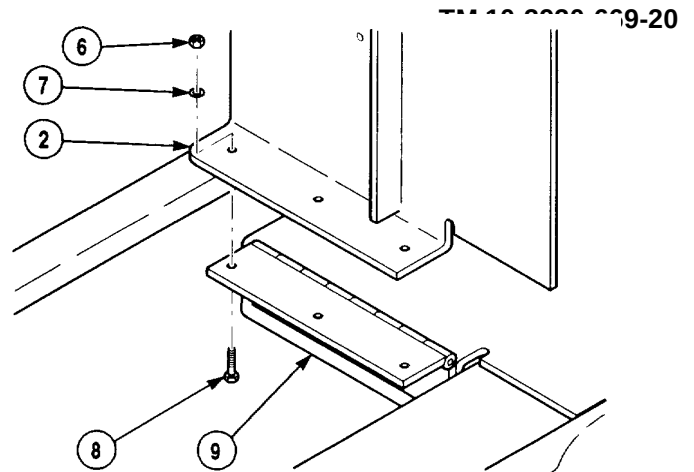


(1) Release two latches (1) and raise engine access cover (2).

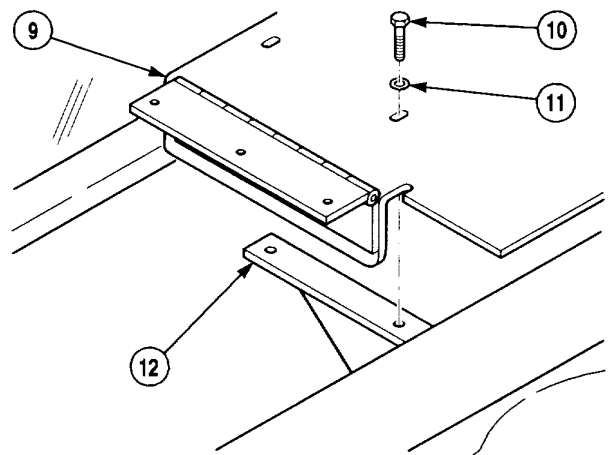
(2) Remove screw (3), washer (4), and stop (5) from engine access cover (2).



- (3) Remove three nuts (6), washers (7), screws (8), and engine access cover (2) from plate (9).

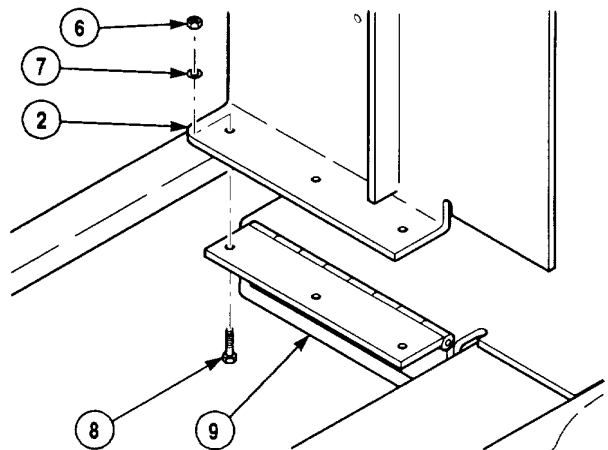


- (4) Remove five screws (10), washers (11), and plate (9) from forklift (12).

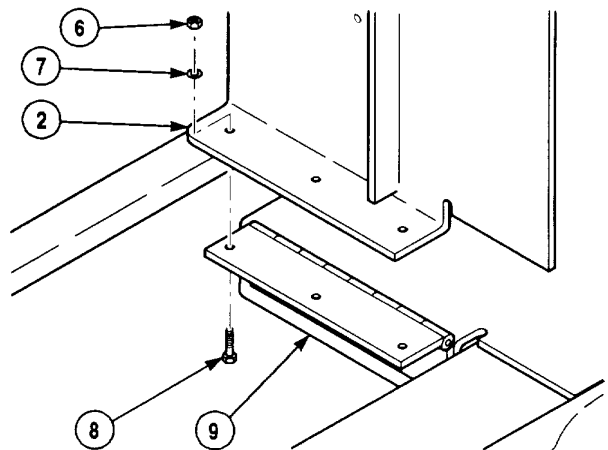


b. Installation.

- (1) Install plate (9) on forklift (12) with five washers (11) and screws (10).

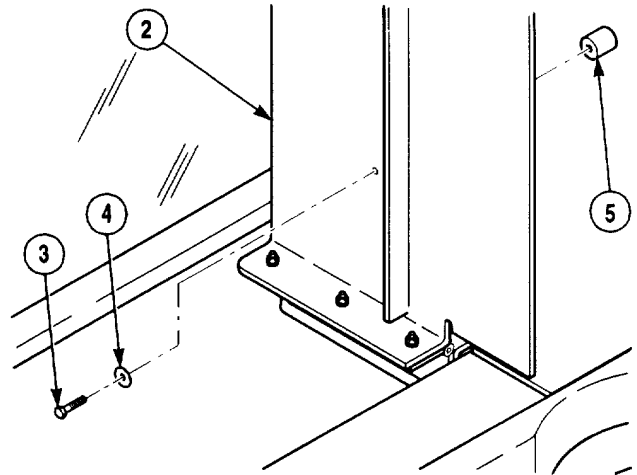


- (2) Install engine access cover (2) on plate (9) with three screws (8), washers (7), and nuts (6).



15-10. LEFT-HAND REAR ENGINE ACCESS COVER REPLACEMENT (CONT).

- (3) Install stop (5) on engine access cover (2) with washer (4) and screw (3).



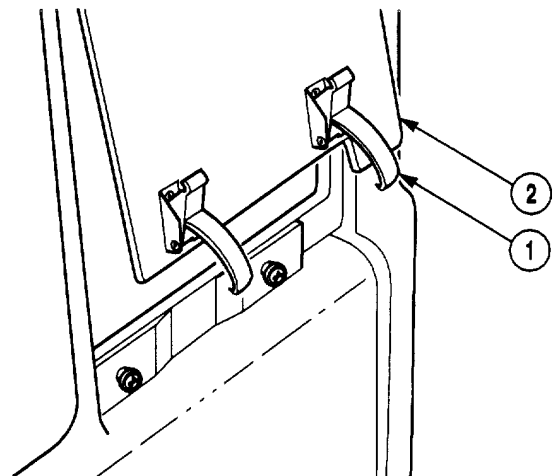
- (4) Lower engine access cover (2) and latch two latches (1).

NOTE

Follow-on Maintenance:

- Install rear work light and bracket (Para 7-29).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK



15-11. ENGINE ACCESS COVER LATCH REPLACEMENT.

This task covers:

- a. Removal b. Cleaning/Inspection c. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Wrench, Torque (0 to 175 lb-ft [0-238 N-m])
(Item 2, Appendix B)

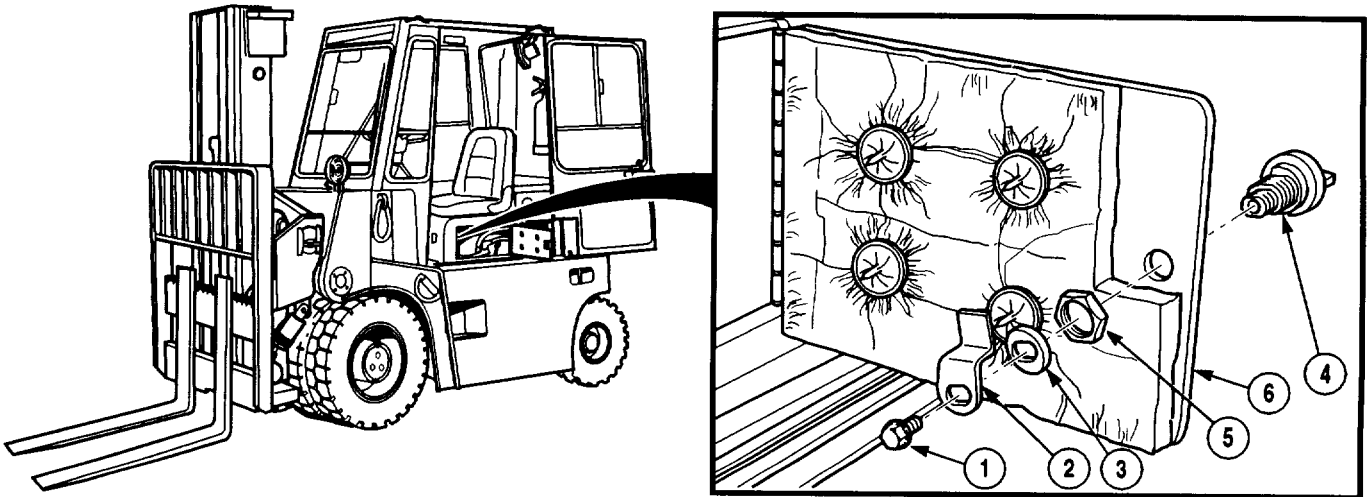
Materials /Parts

Solvent, Drycleaning (Item 20, Appendix C)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Open cab door (TM 10-3930-669-10)
Open engine access cover
(TM 10-3930-669-10)

a. Removal



- (1) Remove screw (1), catch (2), and washer (3) from latch handle (4).
- (2) Remove nut (5) from latch handle (4).
- (3) Remove latch handle (4) from door (6).

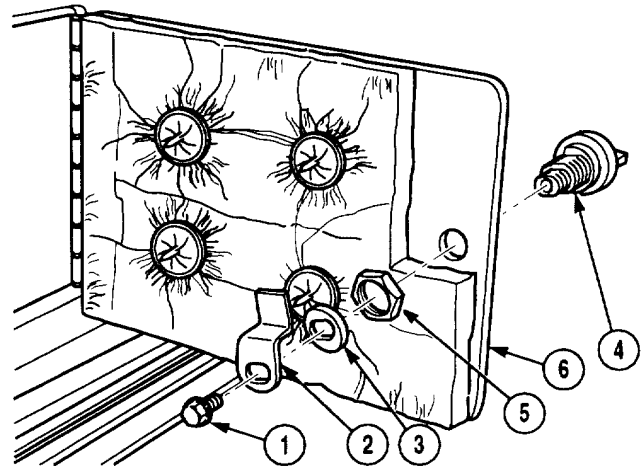
15-11. CAB ENGINE ACCESS COVER LATCH REPLACEMENT (CONT).***b. Cleaning/Inspection.*****WARNING**

- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

- (1) Clean all metal parts with drycleaning solvent.
- (2) Inspect all parts for breaks, cracks, burrs, and sharp edges.
- (3) Inspect threads for damage.
- (4) Replace all damaged parts.

c. Installation.

- (1) Install latch handle (4) in door (6) with nut (5).
- (2) Install washer (3) and catch (2) on latch handle (4) with screw (1).

**NOTE**

Follow-on Maintenance:

- Close engine access cover (TM 10-3930-669-10).
- Close cab door (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

15-12. CAB FLOOR PLATE REPLACEMENT.

This task covers:

- a. Removal c. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Wrench, Torque (0 to 175 lb-ft [0-237 N-m])
(Item 2, Appendix B)

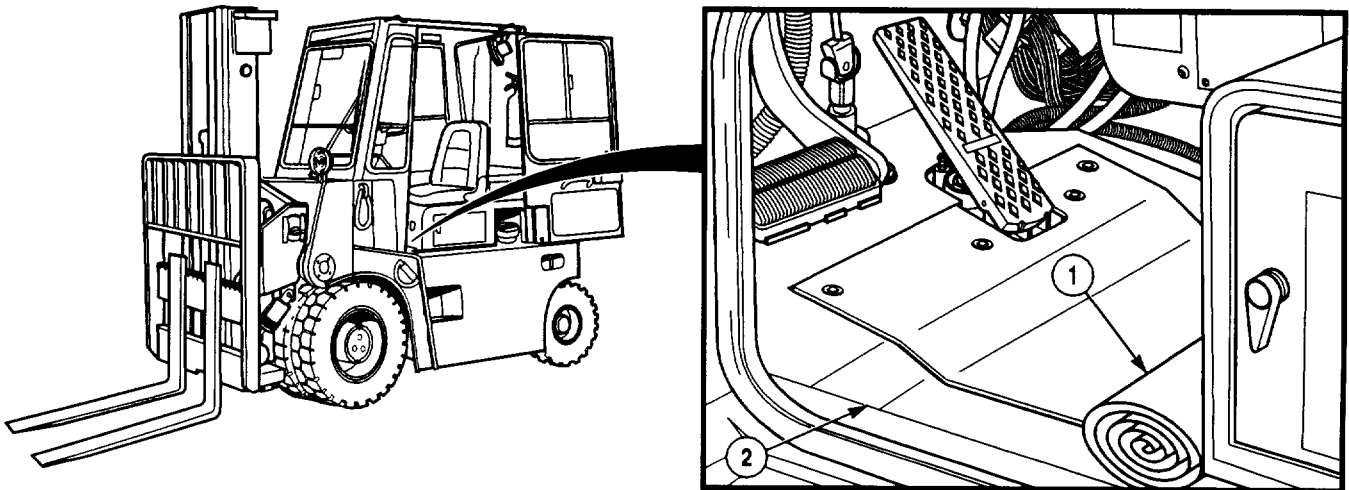
Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Cab door opened (TM 10-3930-669-10)

Materials/Parts

Rags, Wiping (Item 19, Appendix C)
Solvent, Drycleaning (Item 20, Appendix C)

a. Removal.



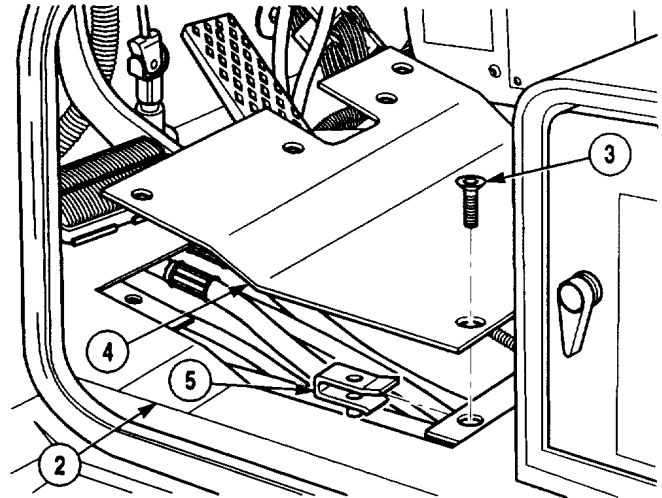
- (1) Remove floormat (1) from cab floor (2).

15-12. CAB FLOOR PLATE REPLACEMENT (CONT).

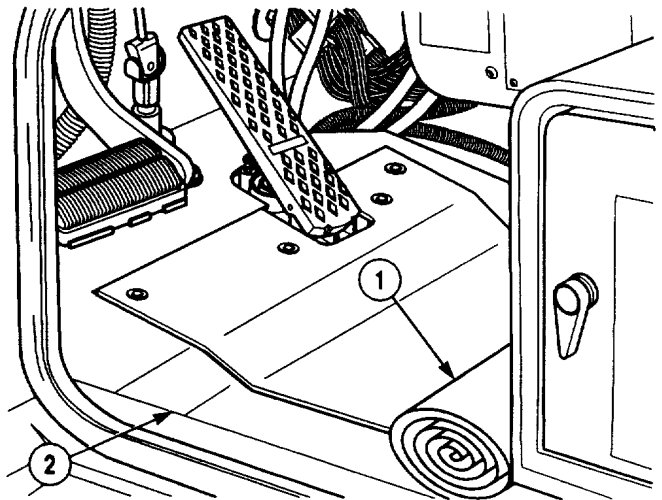
- (2) Remove seven screws (3) and floor plate (4) from cab floor (2).
- (3) Remove seven nuts (5) from cab floor (2).

b. Installation.

- (1) Install seven nuts (5) on cab floor (2).
- (2) Install floor plate (4) on cab floor (2) with seven screws (3).



- (3) Install floor mat (1) on cab floor (2).



NOTE

Follow-on Maintenance:

- Close cab door (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

15-13. CONSOLE WELDMENT REPLACEMENT.

This task covers:

- a. Removal b. Cleaning/Inspection c. Installation

INITIAL SETUP*Tools and Special Tools*

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Wrench, Torque (0 to 175 lb-ft [0-237 N•m])
(Item 2, Appendix B)

Materials/Parts

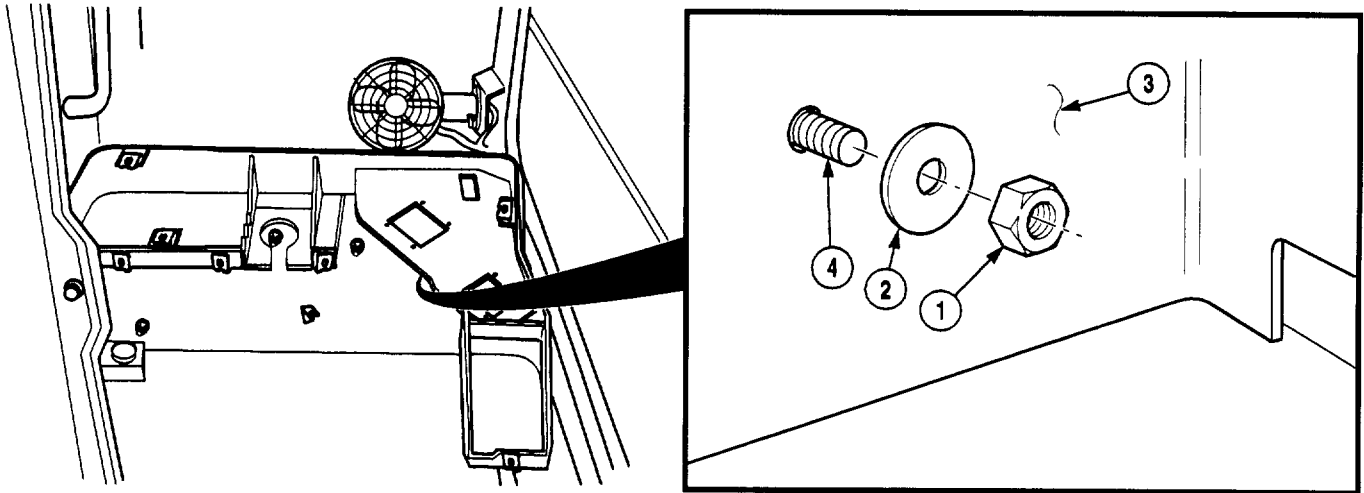
Solvent, Drycleaning (Item 20, Appendix C)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Batteries disconnected (Para 7-48)

Equipment Condition - Continued

Cab door opened (TM 10-3930-669-10)
Fuse panel and mounting bracket removed
(Para 7-34)
Instrument panel removed (Para 7-8)
Parking brake handle removed (Para 11-2)
Steering column removed (Para 13-2)
Brake pedal and linkage removed
(Para 11-6)

a. Removal.**WARNING**

Dash frame weighs 83 lbs (38 kg). Attach suitable lifting device prior to removal or installation to prevent possible injury to personnel.

- (1) Remove four nuts (1) and washers (2) from cab dash frame (3) and cab (4).
- (2) With the aid of an assistant, remove dash frame (3) from cab (4).

15-13. CONSOLE WELDMENT REPLACEMENT (CONT).***b. Cleaning/Inspection.*****WARNING**

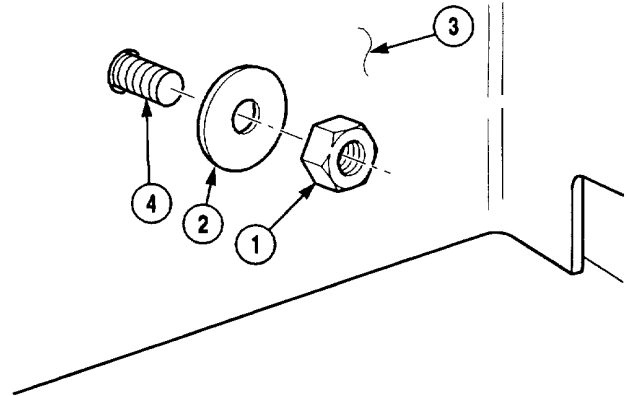
- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
 - If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate
- (1) Clean all metal parts with drycleaning solvent.
 - (2) Inspect all parts for breaks, cracks, burrs, and sharp edges.
 - (3) Replace all damaged parts.

c. Installation.**WARNING**

Dash frame weighs 83 lbs (38 kg). Attach suitable lifting device prior to removal or installation to prevent possible injury to personnel.

CAUTION

Use caution when installing cab dash frame in cab to prevent damage to wiring and equipment.



- (1) With the aid of an assistant, position dash frame (3) in cab (4).
- (2) Install dash frame (3) in cab (4) with four washers (2) and nuts (1). Tighten four nuts to 30 lb-ft (41 N.m).

NOTE

Follow-on Maintenance:

- Install brake pedal and linkage (Para 11-6).
- Install steering column (Para 13-2).
- Install parking brake handle (Para 11-2).
- Install instrument panel (Para 7-8).
- Install fuse panel and mounting bracket (Para 7-34).
- Connect batteries (Para 7-48).
- Close cab door (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

15-14. TOP WINDOW GUARD REPLACEMENT.

This task covers:

- a. Removal b. Installation

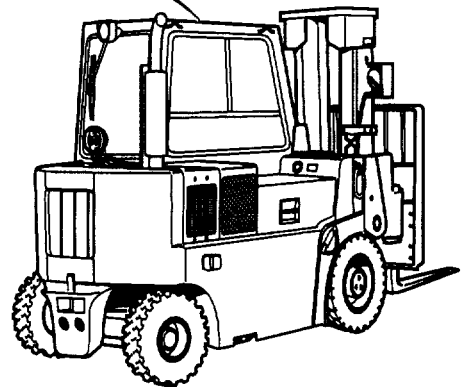
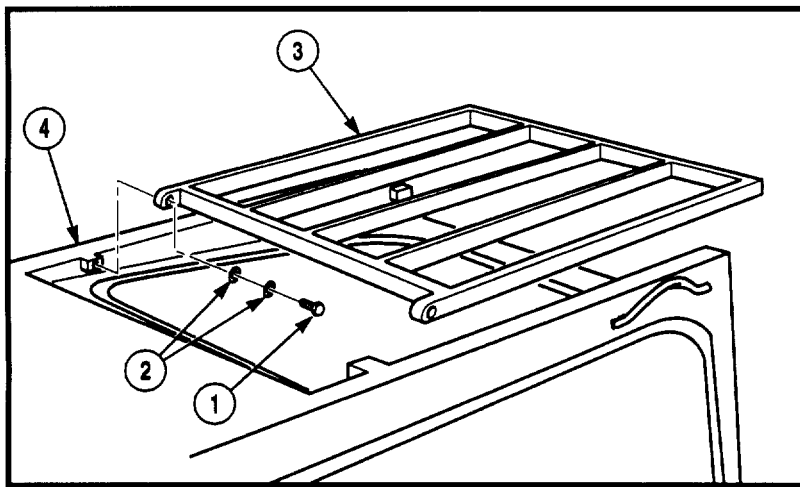
INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)



CAUTION

When removing or installing the top window guard, be careful not to strike the top window or damage to equipment may occur.

- a. **Removal.** Remove two screws (1), four washers (2), and overhead guard (3) from forklift (4).
b. **Installation.** Install overhead guard (3) with four washers (2) and two screws (1) on forklift (4).

NOTE

Follow-on Maintenance:

- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

15-15. BATTERY BOX REPLACEMENT.

This task covers:

- a. Removal b. Cleaning/Inspection c. Installation

INITIAL SETUP*Tools and Special Tools*

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

References

Maintenance and Repair for Lead-Acid
Storage Batteries, (TM 9-6140-200-14)

Materials/Parts

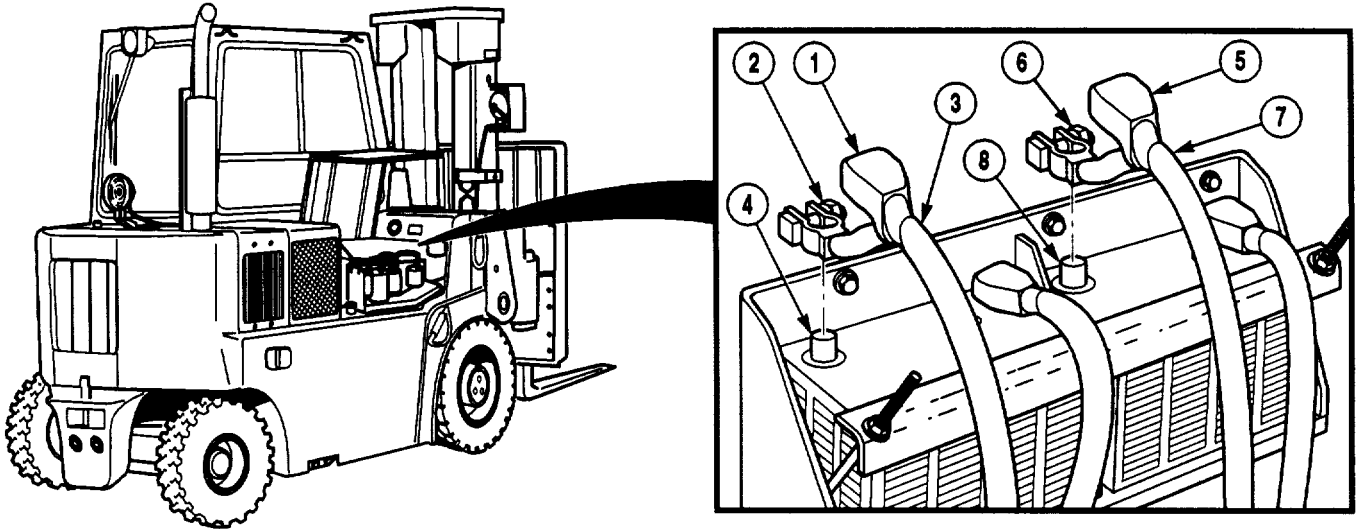
Baking Soda (Item 3, Appendix C)
Detergent (Item 10, Appendix B)
Compound, Corrosion Preventive
(Item 7, Appendix C)
Rags, Wiping (Item 19, Appendix C)
Solvent, Drycleaning (Item 20, Appendix C)
Tags, Identification (Item 21, Appendix C)
Washer, Lock (2)
Washer, Lock (2)
Washer, Lock (3)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Right-hand engine access cover removed
(Para 15-8)
Right-hand engine panel removed (Para 15-9)
Oil filter tray removed (Para 4-13)

15-15. BATTERY BOX REPLACEMENT (CONT).

a. Removal.



WARNING

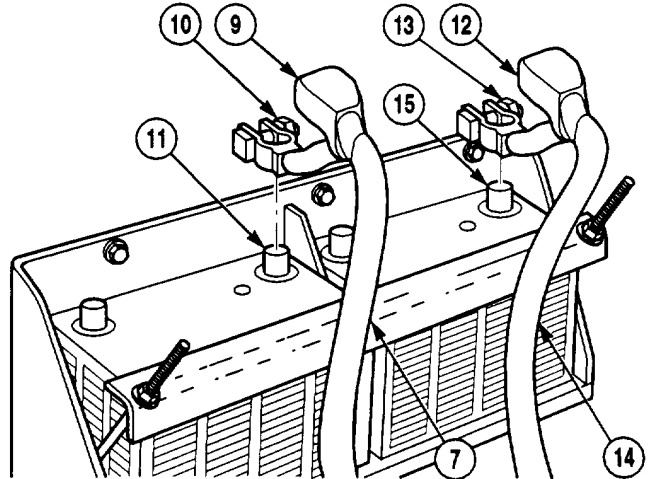
- Battery acid (electrolyte) is extremely harmful. Always wear safety goggles and rubber gloves, and do not smoke when performing maintenance on batteries. Injury will result if acid contacts skin or eyes. Wear rubber apron to prevent clothing being damaged.
- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry contacts battery terminal, a direct short may result in instant heating of tools, damage to equipment, and injury or death to personnel.

NOTE

Tag and mark all wires prior to removal.

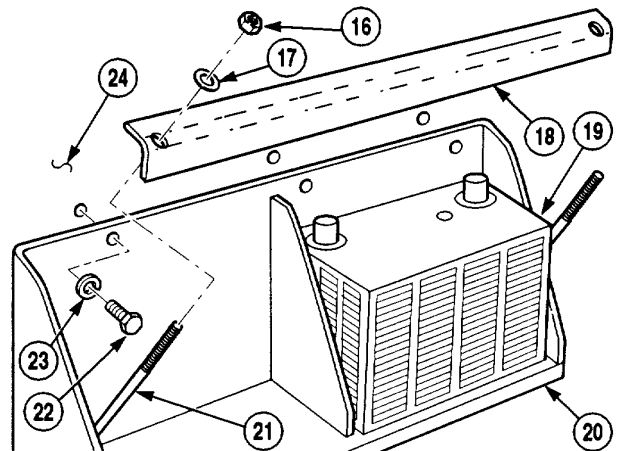
- (1) Lift black rubber terminal cover (1) and loosen nut (2) until negative cable (3) can be removed from negative battery terminal (4).
- (2) Lift black rubber terminal cover (5) and loosen nut (6), until negative side of cable (7) can be removed from negative battery terminal (8).

- (3) Lift red rubber terminal cover (9) and loosen nut (10) until positive side of cable (7) can be removed from positive battery terminal (11).
- (4) Lift red rubber terminal cover (12) and loosen nut (13) until positive cable (14) can be removed from positive battery terminal (15).



WARNING

- Battery acid (electrolyte) is extremely harmful. Always wear safety goggles and rubber gloves, and do not smoke when performing maintenance on batteries. Injury will result if acid contacts skin or eyes. Wear rubber apron to prevent clothing being damaged.
 - Remove all jewelry such as rings, dogs tags, bracelets, etc. If jewelry contacts battery terminal, a direct short may result in instant heating of tools, damage to equipment, and injury or death to personnel.
- (5) Remove two nuts (16) washers (17), and battery hold down clamp (18).
 - (6) Remove two batteries (19) from battery box (20).
 - (7) Remove two studs (21) from battery box (20).
 - (8) Remove five screws (22), lock washer (23), and battery box (20) from forklift (24). Discard lock washer.



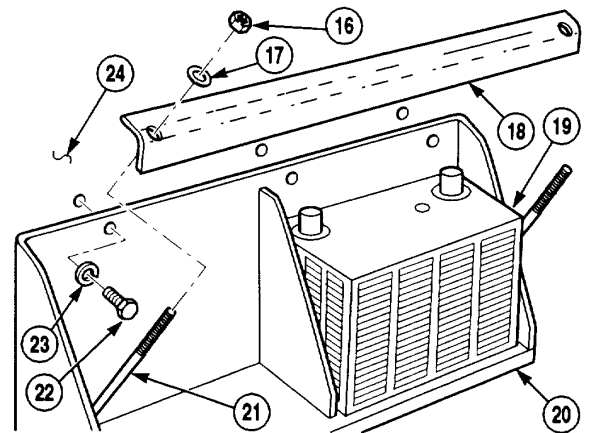
15-15. BATTERY BOX REPLACEMENT (CONT).***b. Cleaning/Inspection.*****WARNING**

- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

- (1) Clean all metal parts with drycleaning solvent.
- (2) Inspect battery hold down clamp for cracks or damage.
- (3) Clean battery box with wiping cloths and detergent.
- (4) Neutralize battery acid on battery box with baking soda.
- (5) Inspect battery box for cracks or breaks.
- (6) Replace damaged parts or notify supervisor.

c. Installation.

- (1) Install battery box (20) on forklift (24) with five lock washers (23) and screws (22).
- (2) Install two studs (21) on battery box (20).
- (3) Install two batteries (19) in battery box (20).
- (4) Install battery hold down clamp (18) and secure with two washers (17) and nuts (16).



WARNING

When connecting battery cables to battery, always connect positive terminal before connecting negative terminal. Failure to do so could cause an electrical arc and serious injury to personnel or damage to equipment.

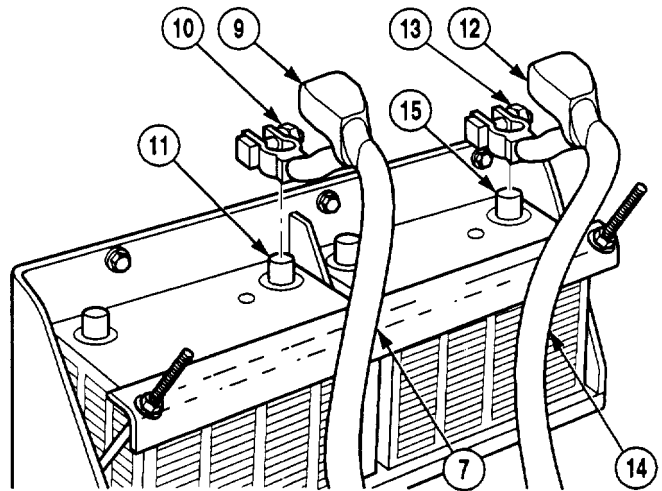
Battery acid (electrolyte) is extremely harmful. Always wear safety goggles and rubber gloves, and do not smoke when performing maintenance on batteries. Injury will result if acid contacts skin or eyes. Wear rubber apron to prevent clothing being damaged.

Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry contacts battery terminal, a direct short may result in instant heating of tools, damage to equipment, and injury or death to personnel.

- (5) Coat positive battery terminal (15) with corrosion preventive compound.
- (6) Install positive cable (14) on positive battery terminal (15) and tighten nut (13). Cover positive battery terminal (15) with red rubber terminal cover (12).

WARNING

Corrosion inhibitor contains alkali. Do not get in eyes; wear goggles/safety glasses when using. Avoid contact with skin. In case of contact, immediately wash area with soap and water. If eyes are contacted, flush eyes with large amounts of water for at least 15 minutes and get immediate medical attention.



- (7) Coat positive battery terminal (11) with corrosion preventive compound.
- (8) Install positive side of cable (7) on positive battery terminal (11) and tighten nut (10). Cover positive battery terminal (11) with red rubber terminal cover (9).

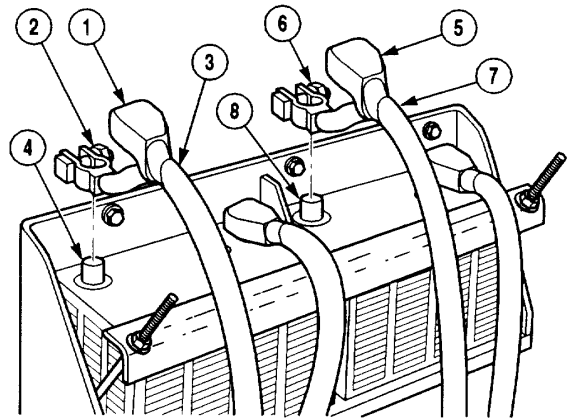
15-15. BATTERY BOX REPLACEMENT (CONT).**WARNING**

Corrosion inhibitor contains alkali. Do not get in eyes; wear goggles/safety glasses when using. Avoid contact with skin. In case of contact, immediately wash area with soap and water. If eyes are contacted, flush eyes with large amounts of water for at least 15 minutes and get immediate medical attention.

- (9) Coat negative battery terminal (8) with corrosion preventive compound.
- (10) Install negative side of cable (7) on negative battery terminal (8) and tighten nut (6). Cover negative battery terminal (8) with black rubber terminal cover (5).

WARNING

- Battery acid (electrolyte) is extremely harmful. Always wear safety goggles and rubber gloves, and do not smoke when performing maintenance on batteries. Injury will result if acid contacts skin or eyes. Wear rubber apron to prevent clothing being damaged.
- Remove all jewelry such as rings, dog tags, bracelets, etc. If jewelry contacts battery terminal, a direct short may result in instant heating of tools, damage to equipment, and injury or death to personnel.



- (11) Coat negative battery terminal (4) with corrosion preventive compound.
- (12) Install negative cable (3) on negative battery terminal (4) and tighten nut (2). Cover negative battery terminal (4) with black rubber terminal cover (1).

NOTE

Follow-on Maintenance:

- Close Right-hand engine access cover (Para 15-8)
- Close Right-hand engine panel (Para 15-9)
- Oil filter tray (Para 4-13)
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

15-16. SEAT REPLACEMENT.

This task covers:

- a. Removal c. Cleaning/Inspection e. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

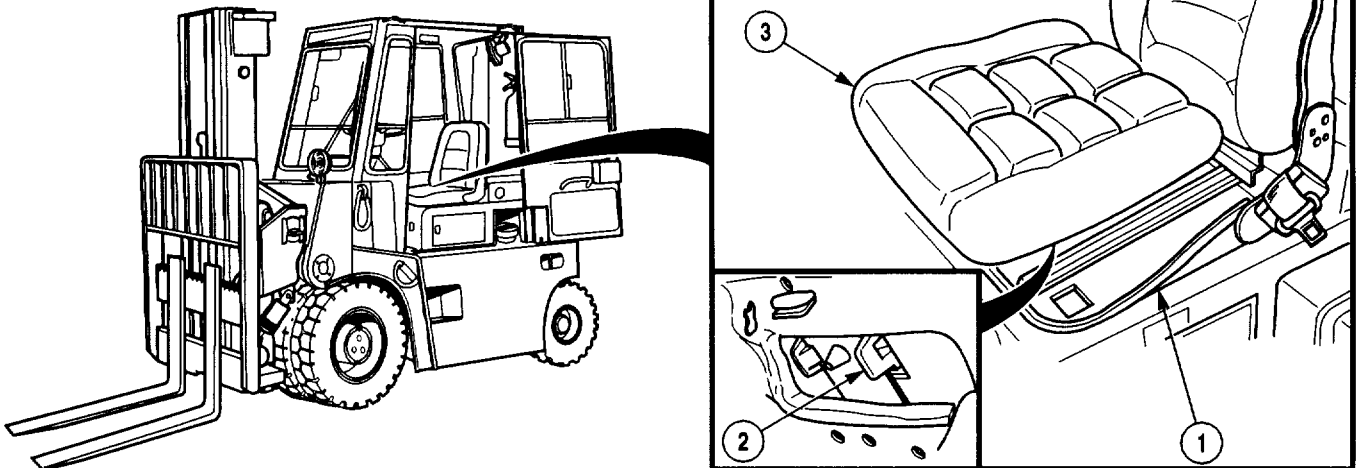
Materials/Parts

Solvent, Drycleaning (Item 20, Appendix C)
Nut, Lock (2)

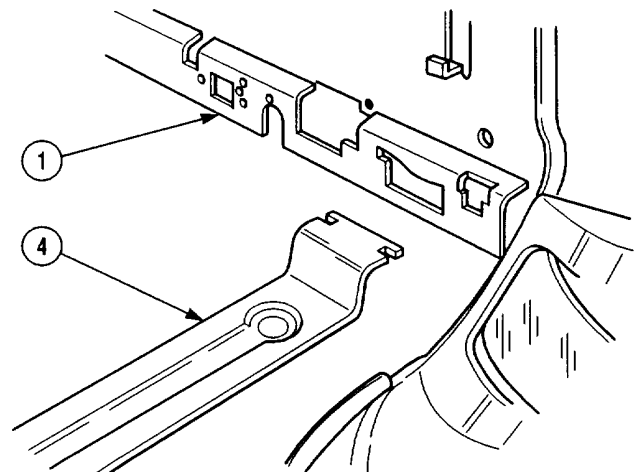
Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Cab door opened (TM 10-3930-669-10)

a. Removal

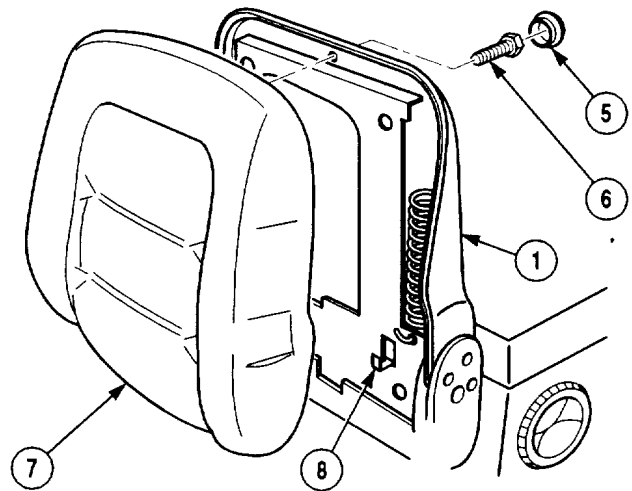


- (1) Pull seat assembly (1) to front position (TM 10-3930-669-10).
- (2) Pull four tabs (2) and remove cushion (3) from seat assembly (1).
- (3) Remove two brackets (4) from seat assembly (1).

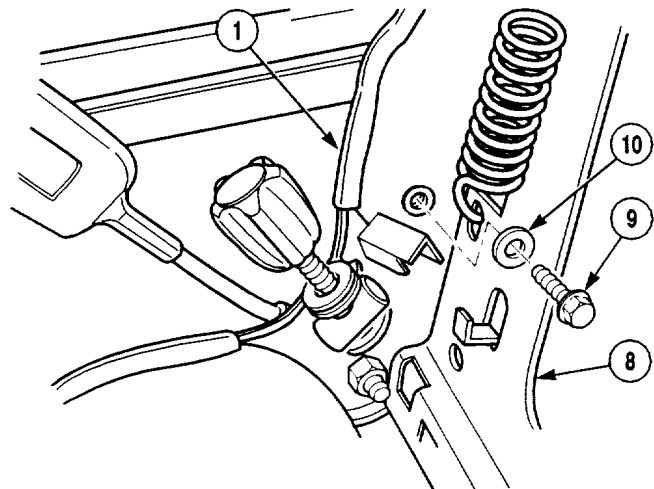


15-16. SEAT REPLACEMENT/REPAIR (CONT).

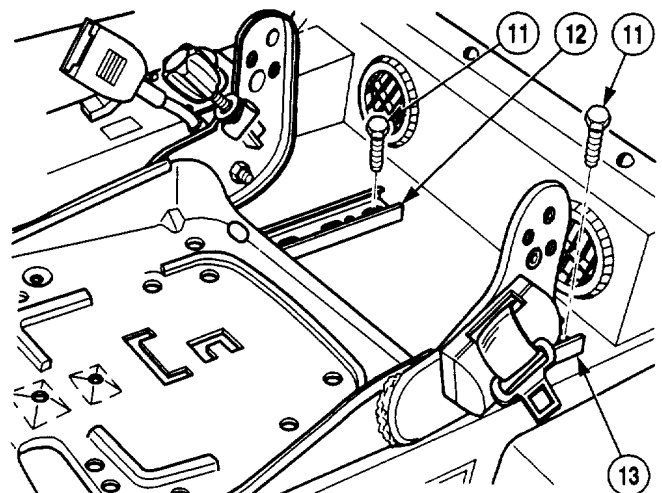
- (4) Remove plug (5) and screw (6) from back of seat assembly (1).
- (5) Remove cushion (7) from tabs on rear seat frame assembly (8).



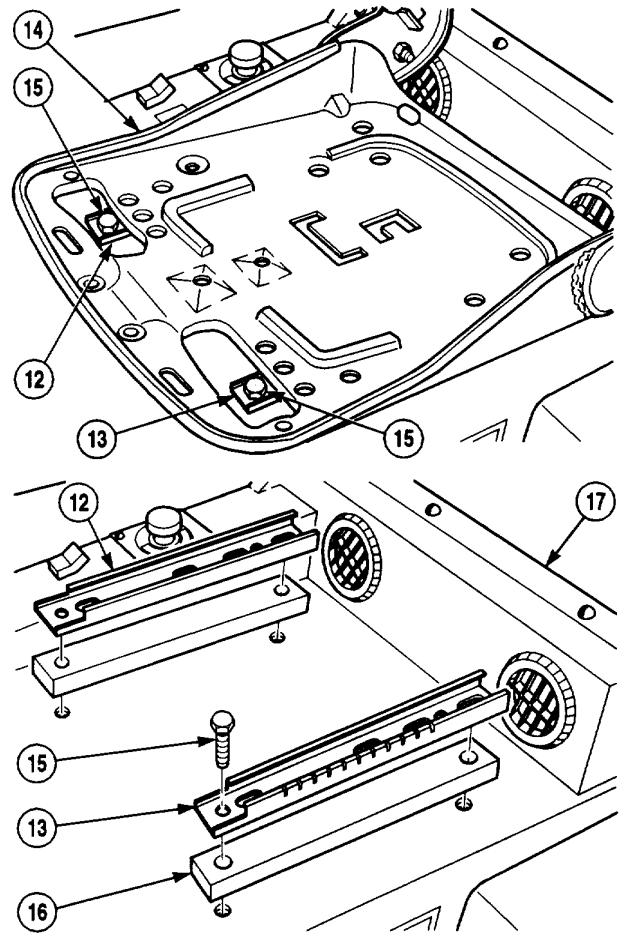
- (6) Remove three screws (9), washers (10), and rear seat frame assembly (8) from seat assembly (1).



- (7) Remove two screws (11) from slide rails (12 and 13).



- (8) Push lower seat frame assembly (14) to the rear position (TM 10-3930-669-10).
- (9) Loosen two screws (15) and remove lower seat frame assembly (14) from two slide rails (12 and 13).
- (10) Remove two screws (15), two slide rails (12 and 13), and two brackets (16) from cab mount (17).



b. Cleaning/Inspection.

WARNING

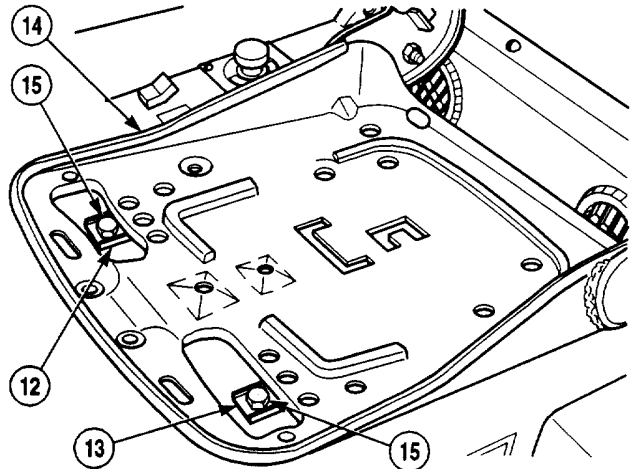
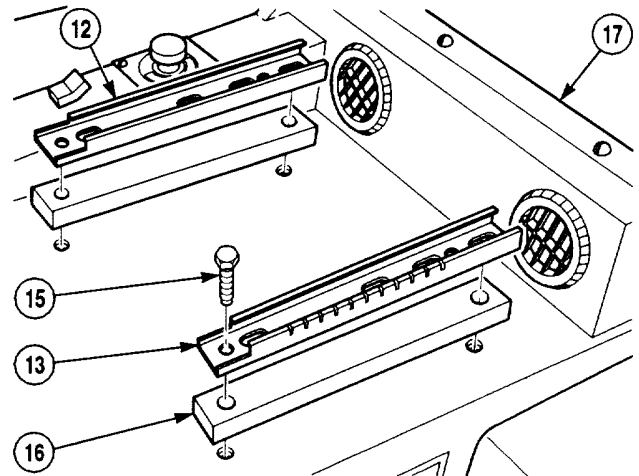
- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
 - If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.
- (1) Clean sealing compound from four screws with drycleaning solvent. Allow to air dry.

15-16. SEAT REPLACEMENT/REPAIR (CONT).

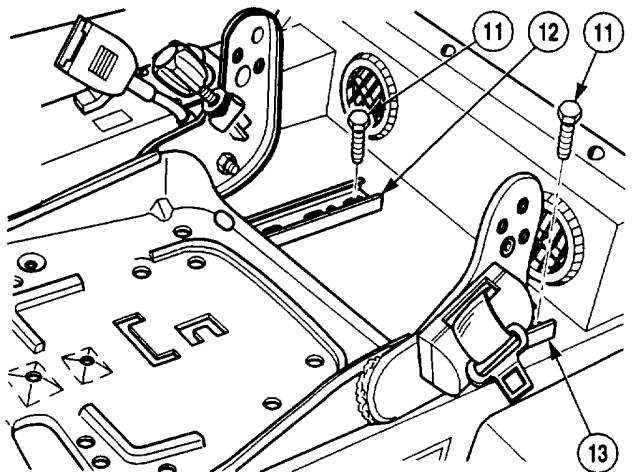
- (2) Inspect all parts for cracks.
- (3) Replace damaged parts or notify supervisor.

c. Installation.

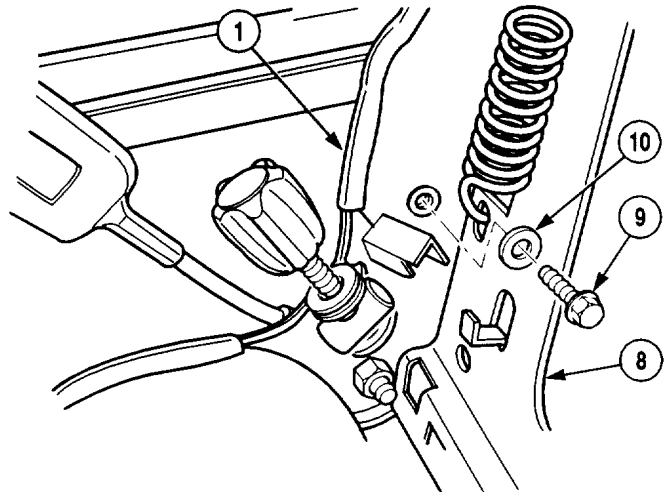
- (1) Position two brackets (16) on cab mount (17).
- (2) Position two screws (15) in front holes of two slide rails (12 and 13).
- (3) Position two slide rails (12 and 13) on two brackets (16).
- (4) Position lower seat frame assembly (14) on two slide rails (12 and 13).
- (5) Tighten two screws (15).



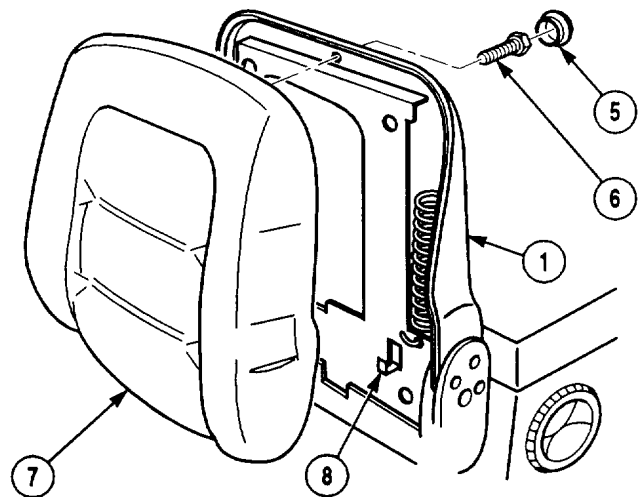
- (6) Pull lower seat frame assembly (14) to the front position (TM 10-3930-669-10).
- (7) Install two screws (11) in rear holes of two slide rails (12 and 13).



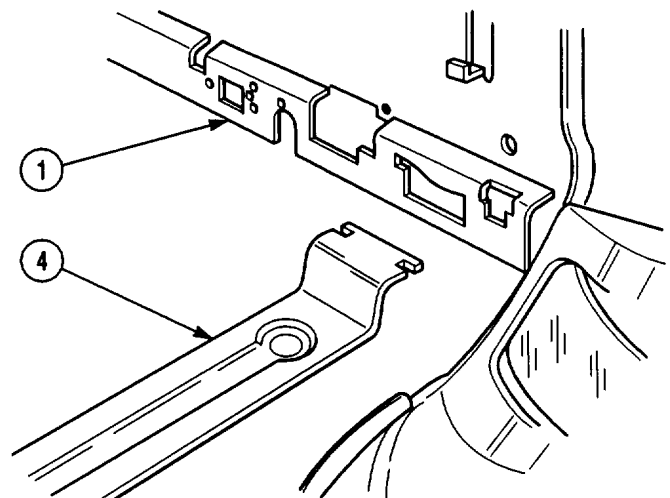
- (8) Install rear seat frame assembly (8) with three washers (10) and screws (9) on seat assembly (1).



- (9) Position cushion (7) on tabs of rear seat frame assembly (8).
- (10) Install screw (6) and plug (5) on back of seat assembly (1).

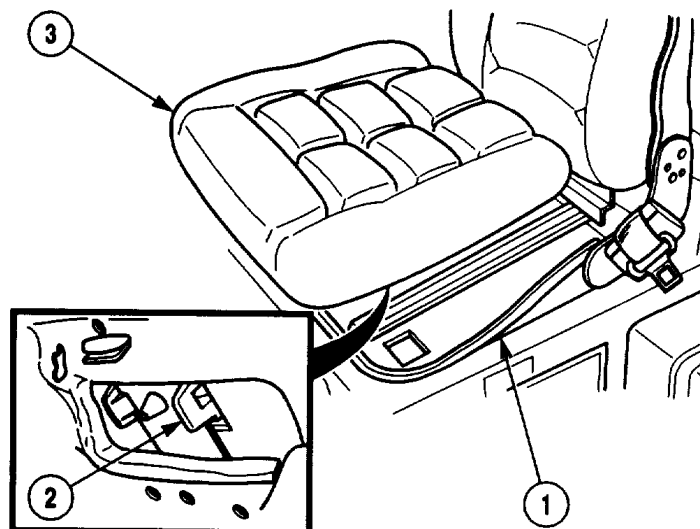


- (11) Install two brackets (4) on seat assembly (1).



15-16. SEAT REPLACEMENT/REPAIR (CONT).

- (12) Install cushion (3) on seat assembly (1) until four tabs (2) snap in place.



NOTE

Follow-on Maintenance:

- Remove wheel chocks (TM 10-3930-669-10).
- Close cab door (TM 10-3930-669-10).

END OF TASK

15-17. CAB INSULATION REPLACEMENT.

This task covers:

- a. Removal b. Installation c. Specifications of Insulation Panels

INITIAL SETUP*Tools and Special Tools*

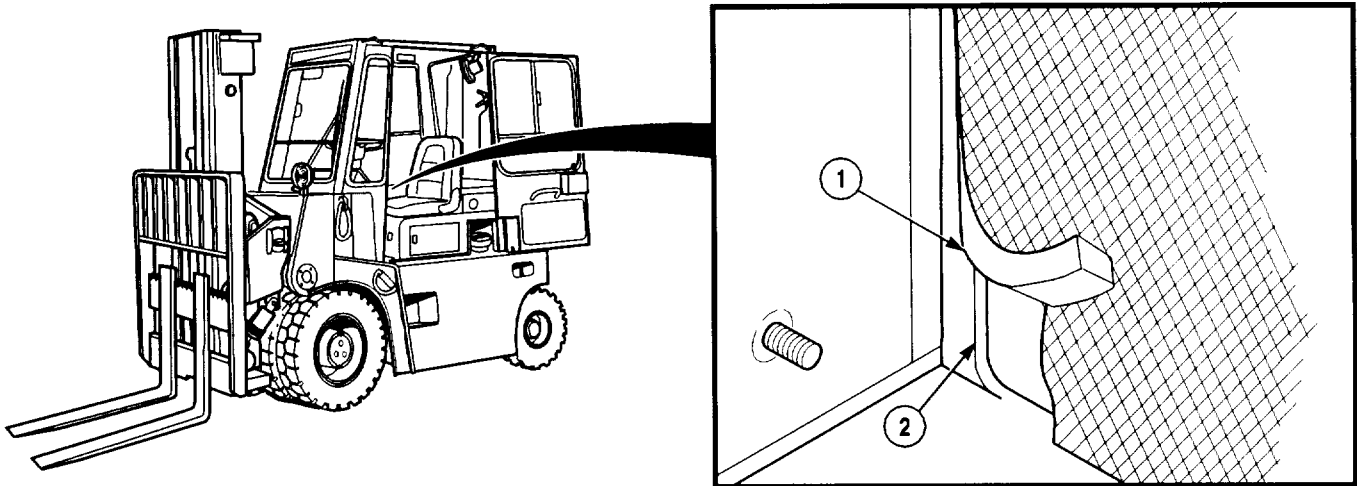
Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

Materials /Parts

Adhesive (Item 1, Appendix C)
Insulation

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Batteries disconnected (Para 7-48)
Lower dash panel removed (Para 15-20)
Cab interior light and bracket removed
(Para 7-32)
Rear windshield wiper assembly removed
(Para 16-3)
Cab door opened (TM 10-3930-669-10)

a. Removal**NOTE**

Insulation removal is shown for cab side wall. Procedures for cab door and cab roof are similar.

- (1) Remove insulation (1) from cab wall (2).
- (2) Remove any old adhesive, insulation, or dirt from cab wall (2).

15-17. CAB INSULATION REPLACEMENT (CONT).***b. Installation.*****WARNING**

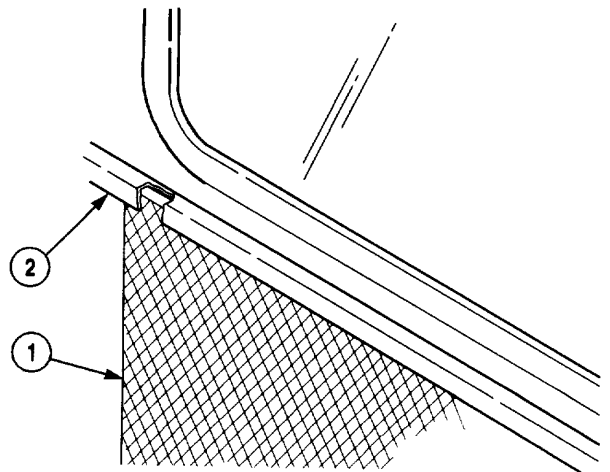
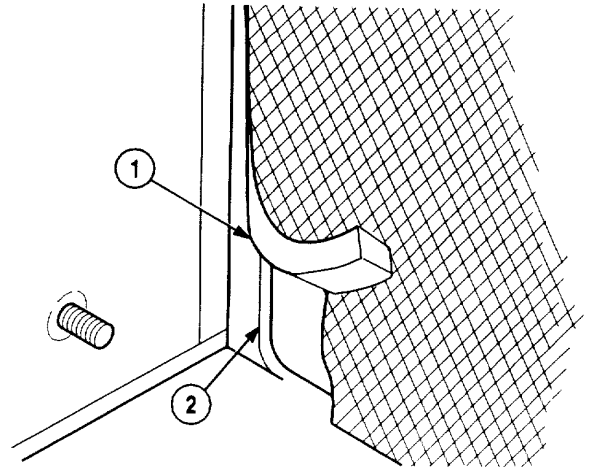
Adhesive causes immediate bonding on contact with eyes, skin, or clothing and also gives off harmful vapors. Wear protective goggles and use in well-ventilated area. If adhesive gets in eyes, try to keep eyes open; flush eyes with water for 15 minutes and get immediate medical attention.

CAUTION

- Use proper adhesive on all panels that are used inside the cab. Using wrong adhesive will cause premature failure.
- Ensure that cab surface is free of old adhesive, insulation, dirt, and grease. Dirty surface will cause premature failure.

NOTE

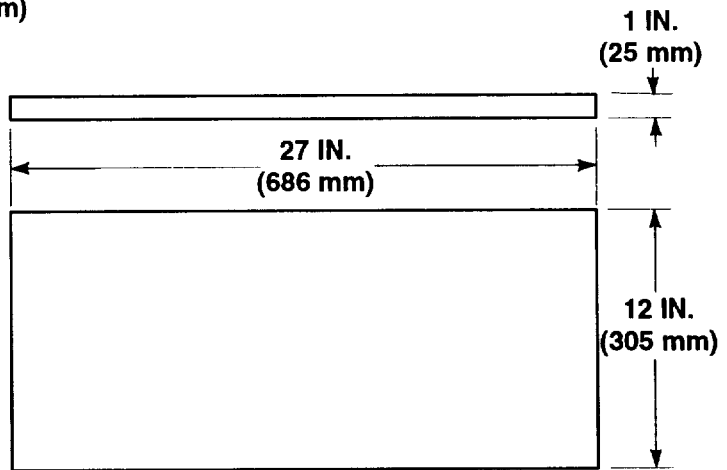
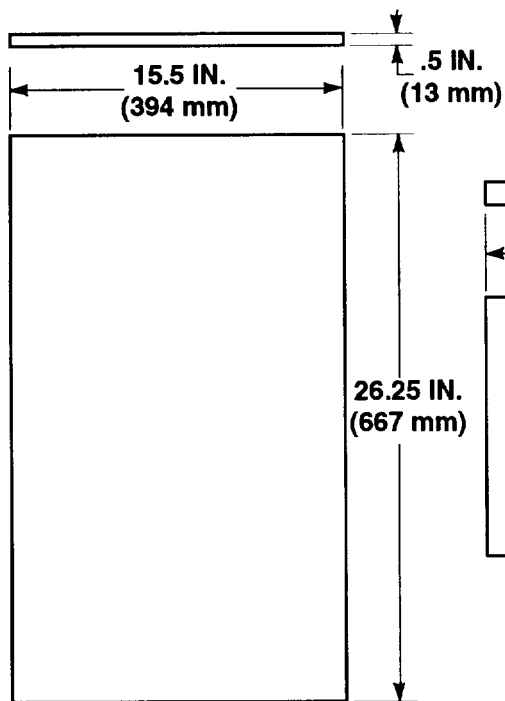
- Ensure that insulation panels meet specifications of drawings in Step c.
- Ensure that insulation panel fits section of cab to be covered.
- Ensure that adhesive is applied to side of insulation panel that contacts cab surface.
- Cab wall installation procedure is shown. Installation procedures for cab roof and cab door are similar.



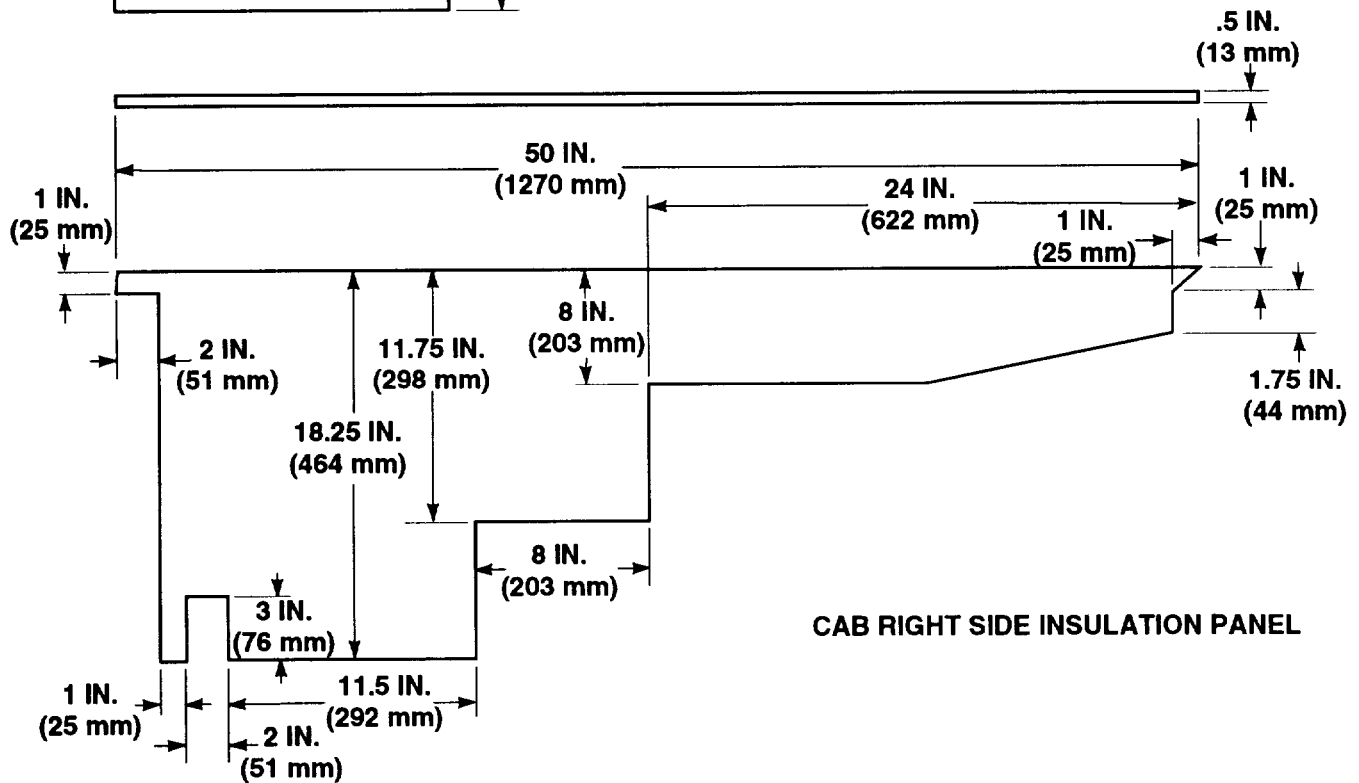
- (1) Coat insulation (1) with adhesive.
- (2) Position insulation (1) on cab wall (2).
- (3) Press insulation (1) uniformly over entire surface.
- (4) Press top edge of insulation (1) under metal trim edge of cab wall (2).

c. Specifications of Insulation Panels.

CAB ROOF INSULATION PANEL



CAB DOOR INSULATION PANEL



CAB RIGHT SIDE INSULATION PANEL

15-17. CAB INSULATION REPLACEMENT (CONT).

NOTE

Follow-on Maintenance:

- Install lower dash panel (Para 15-20).
- Install cab interior light and bracket (Para 7-32).
- Install rear windshield wiper assembly (Para 16-3).
- Apply parking brake (TM 10-3930-669-10).
- Close cab door (TM 10-3930-669-10).
- Connect batteries (Para 7-48).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

15-18. ENGINE COMPARTMENT INSULATION REPLACEMENT.

This task covers:

- | | | |
|------------|-----------------|---|
| a. Removal | b. Installation | c. Specifications of
Insulation Panels |
|------------|-----------------|---|

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

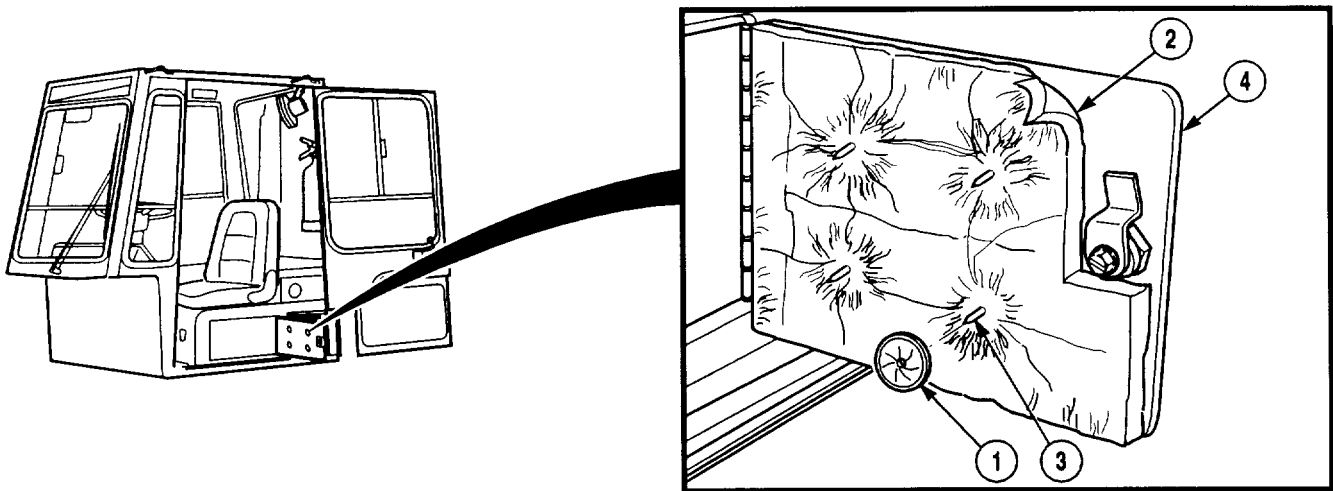
Equipment Condition

Cab removed (Para 15-2)
Master cylinder removed (Para 11-4)

Materials/Parts

Adhesive (Item 1, Appendix C)
Insulation

a. Removal



NOTE

Engine access door insulation panel removal is shown. Removal of all other insulation panels are similar except for sizes and shapes of insulation panels and quantities of retainers.

- (1) Remove four retainers (1) from insulation panel (2) and studs (3).
- (2) Remove insulation panel (2) from cab (4) and studs (3).
- (3) Remove any old adhesive, insulation, or dirt from cab (4) surface.

15-18. ENGINE COMPARTMENT INSULATION REPLACEMENT (CONT).***b. Installation.*****WARNING**

Adhesive causes immediate bonding on contact with eyes, skin, or clothing and also gives off harmful vapors. Wear protective goggles and use in well-ventilated area. If adhesive gets in eyes, try to keep eyes open; flush eyes with water for 15 minutes and get immediate medical attention.

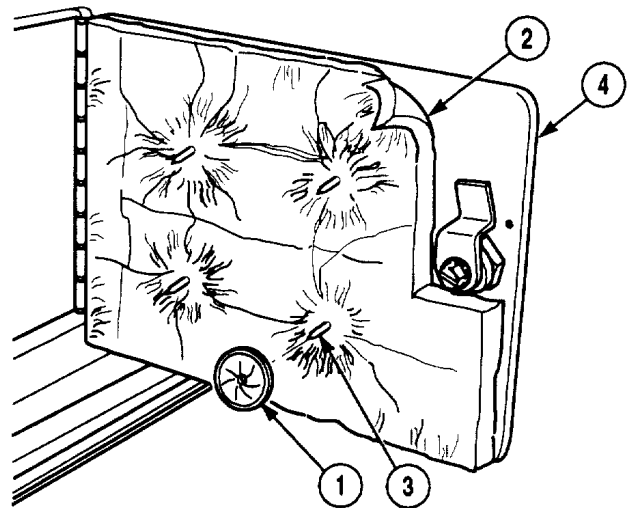
CAUTION

- Use proper adhesive on all panels that are used inside the engine compartment or right hand engine access cover. Using wrong adhesive will cause premature failure.
- Ensure engine compartment surface is free of old adhesive, insulation, dirt, and grease. Dirty surface will cause premature failure.

NOTE

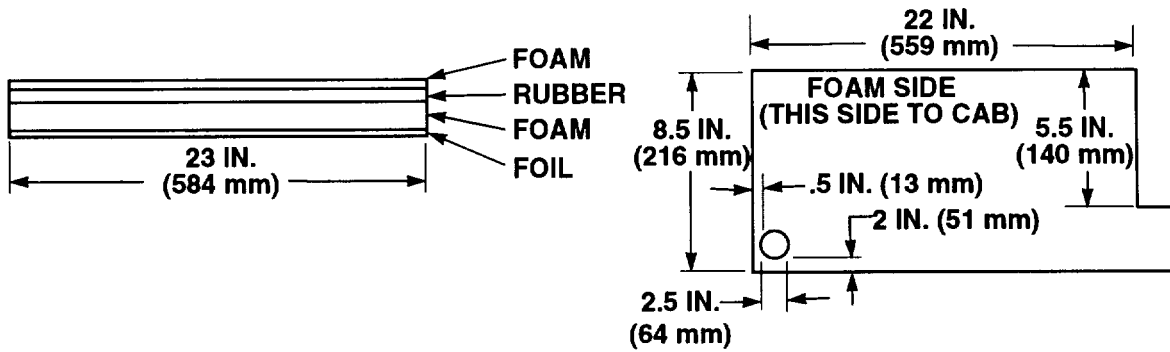
- See insert sheet.
- Ensure that insulation panels meet specifications of drawings in step c.
- Ensure that insulation panel fits section of engine compartment or right hand engine access cover to be covered.
- Ensure that adhesive is applied to foam side of insulation that contacts engine compartment or right hand engine access cover surface.

- (1) Cut new insulation panel (2) as specified in step C.
- (2) Coat foam side of insulation panel (2) with adhesive.
- (3) Position insulation panel (2) on cab (4).
- (4) Press insulation panel (2) uniformly over entire surface against cab (4).
- (5) Install four retainers (1) on studs (3) and press retainers (1) until insulation panel (2) compress slightly.

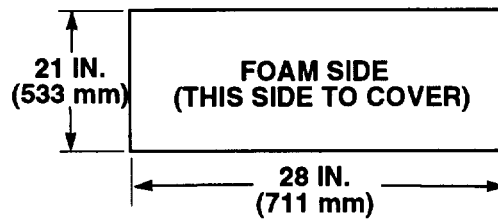
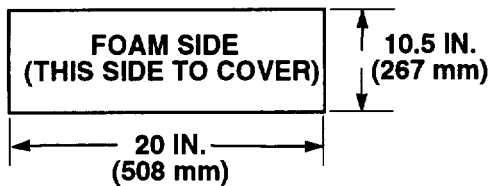
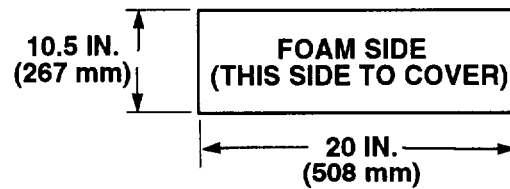
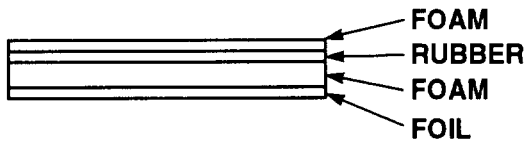


c. Specifications of Insulation Panels.

**FRONT ENGINE COMPARTMENT
INSULATION PANEL**



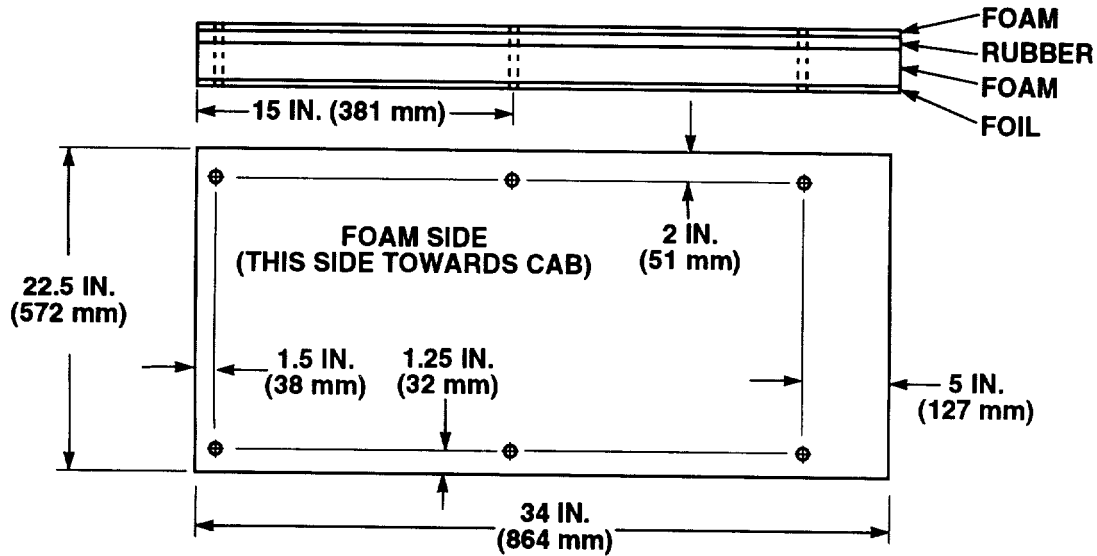
**RIGHT-HAND ENGINE ACCESS
COVER INSULATION PANELS**



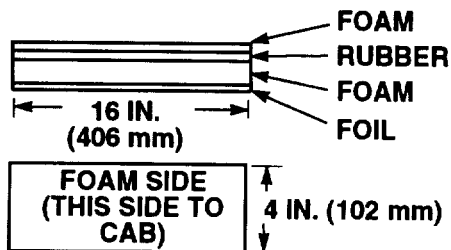
15-18. ENGINE COMPARTMENT INSULATION REPLACEMENT (CONT).

c. Specifications of Insulation Panels (Continued).

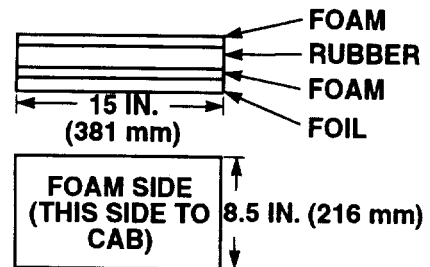
**UPPER ENGINE COMPARTMENT
INSULATION PANEL**



**LOWER FRONT ENGINE COMPARTMENT
INSULATION PANEL**

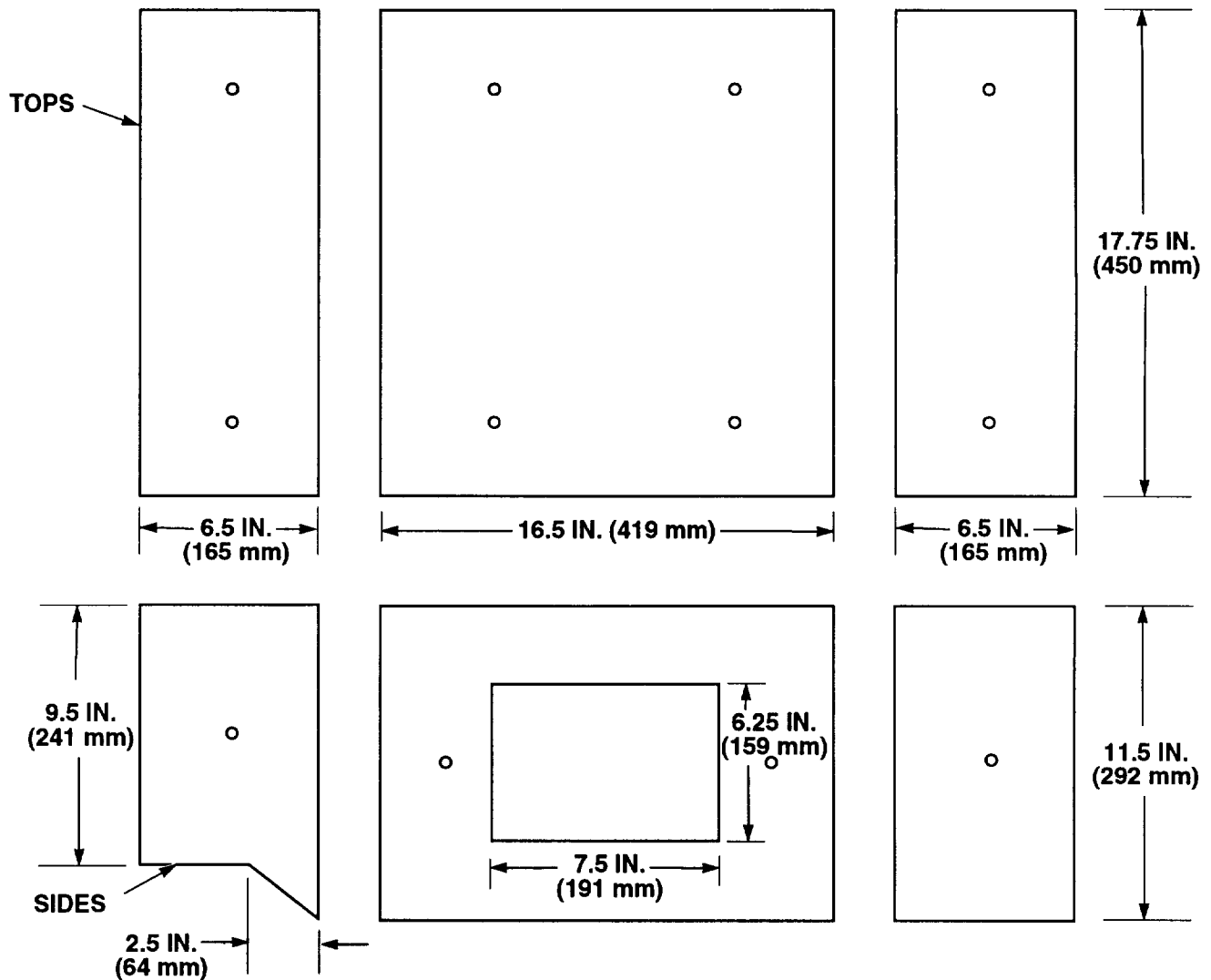


**LEFT-HAND ENGINE COMPARTMENT
INSULATION PANEL**



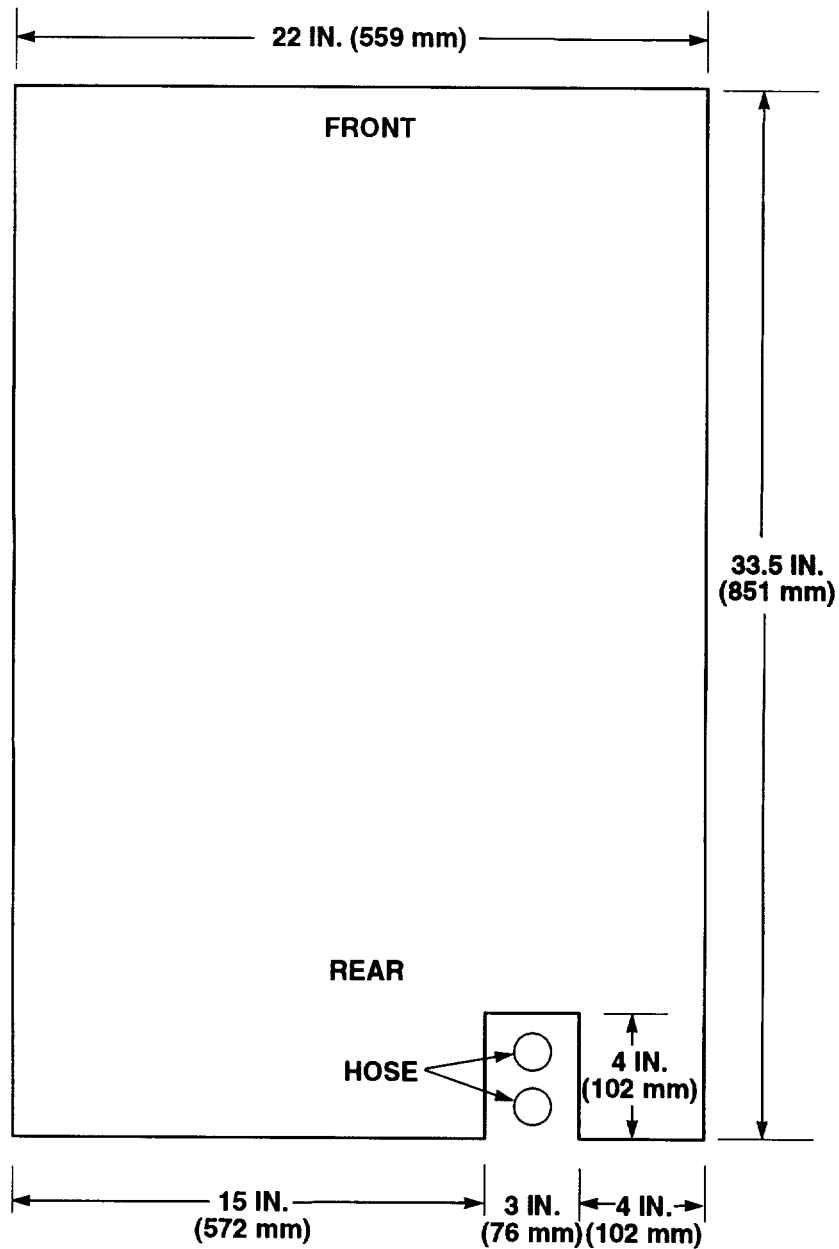
c. Specifications of Insulation Panels (Continued).

**RIGHT-HAND ENGINE ACCESS
INSULATION PANELS**

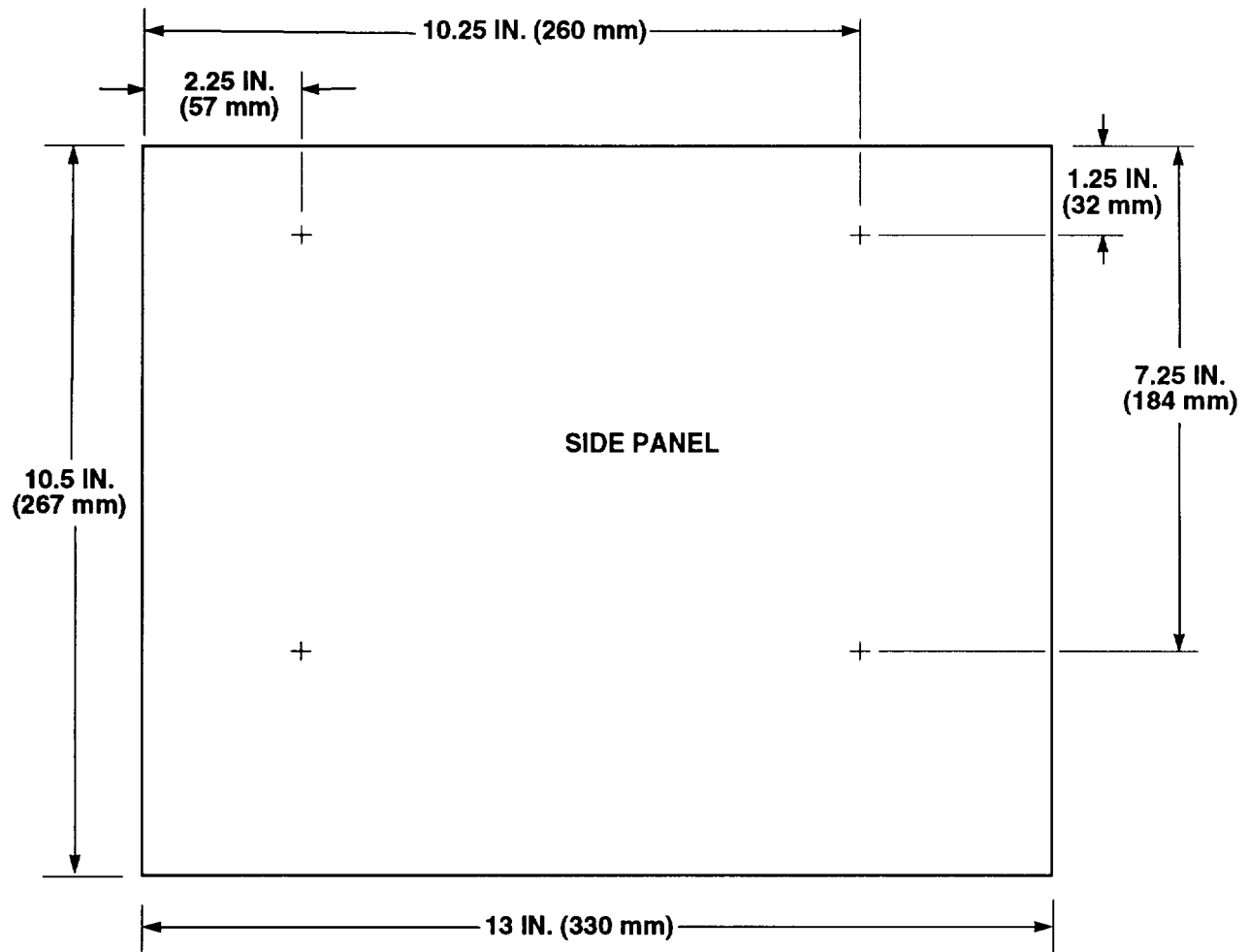


15-18. ENGINE COMPARTMENT INSULATION REPLACEMENT (CONT).

c. Specifications of Insulation Panels (Continued).



c. Specifications of Insulation Panels (Continued).



15-18. ENGINE COMPARTMENT INSULATION REPLACEMENT (CONT).

NOTE

Follow-on Maintenance:

- Install master cylinder (Para 11-4).
- Install cab (Para 15-2).

END OF TASK

15-19. MAST LEVEL INDICATOR REPLACEMENT/ADJUSTMENT.

This task covers:

- | | |
|------------------------|-----------------|
| a. Removal | c. Installation |
| b. Cleaning/Inspection | d. Adjustment |

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Square, Combination (Item 5, Appendix B)
Wrench, Torque (0 to 175 lb-ft [0-237 N•m])
(Item 2, Appendix B)

Materials/Parts

Solvent, Drycleaning (Item 20, Appendix C)

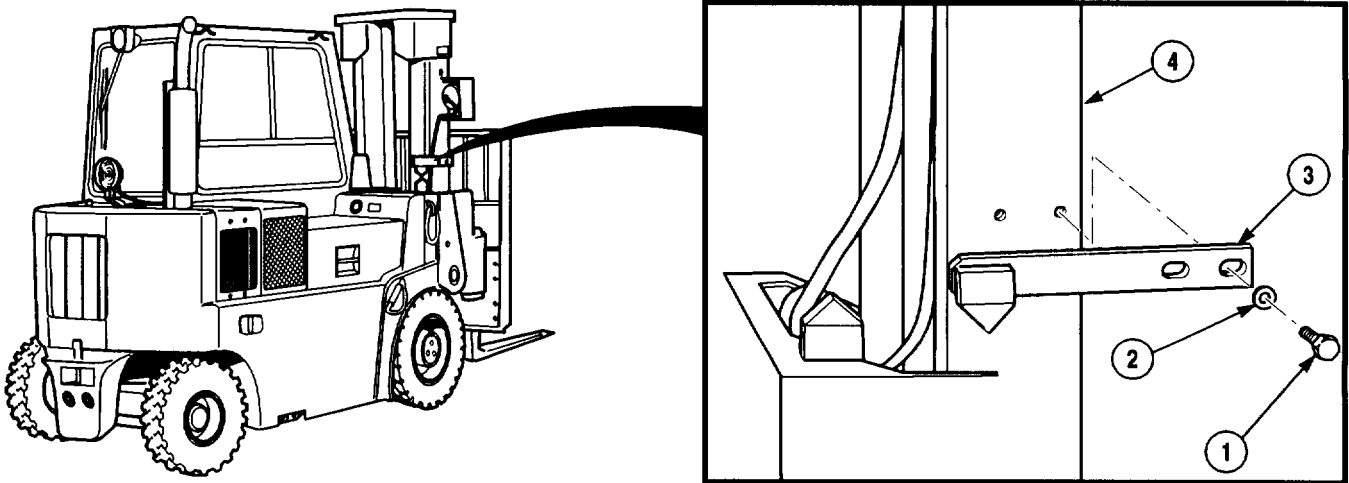
Personnel Required

Two

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Forklift on level surface (TM 10-3930-669-10)
Cab door opened (TM 10-3930-669-10)
Carriage lowered and in forward position
(TM 10-3930-669-10)

- a. Removal.** Remove two screws (1), washers (2), and indicator (3) from mast (4). Discard lock washers.

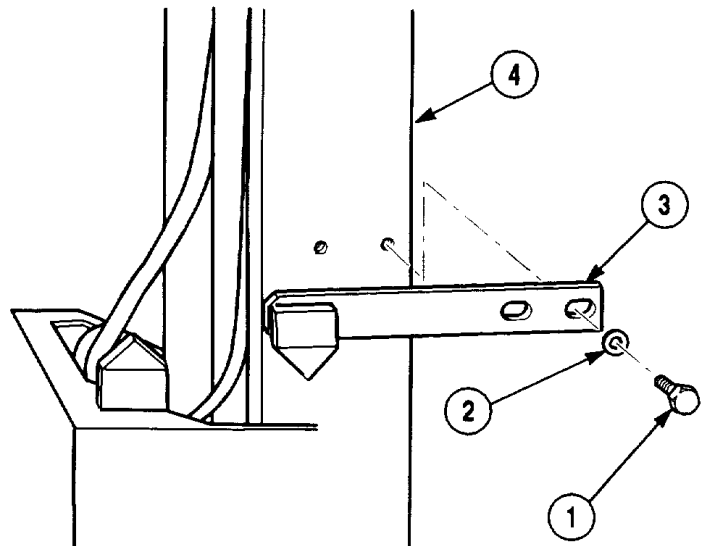


15-19. MAST LEVEL INDICATOR REPLACEMENT/ADJUSTMENT (CONT).***b. Cleaning/Inspection.*****WARNING**

- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

- (1) Clean all metal parts with drycleaning solvent.
- (2) Inspect all parts for breaks, cracks, burrs, and sharp edges.
- (3) Inspect indicator for straightness.
- (4) Inspect screws for signs of damage.
- (5) Replace all damaged parts.

c. Installation. Install indicator (3) on mast (4) with two washers (2), and screws (1). Do not tighten screws.



d. Adjustment.

- (1) Loosen two screws (1) on mast (4) until indicator (3) moves freely. Do not remove screws.
- (2) Start engine (TM 10-3930-669-10).
- (3) Adjust combination square for vertical surface measurement.

WARNING

Keep clear of mast and carriage. Mast or carriage can cause crushing injuries or death.

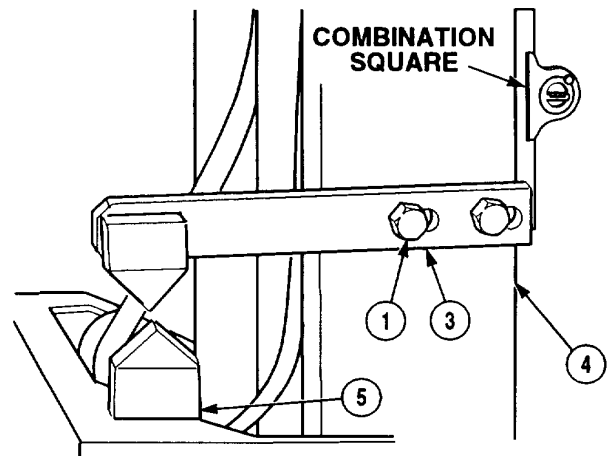
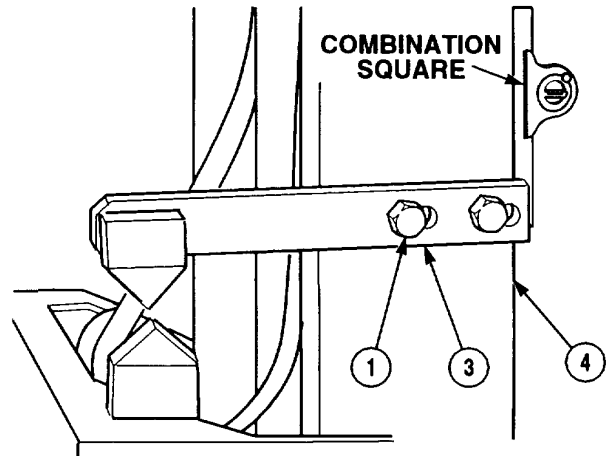
- (4) With the aid of an assistant to place combination square on forward surface of mast, tilt mast until combination square indicates mast is vertical.
- (5) Turn engine OFF (TM 10-3930-669-10).
- (6) Align indicator (3) with indicator (5).
- (7) Tighten two screws (1) 75 lb-ft (102 N•m).
- (8) Remove combination square from mast (4).

NOTE

Follow-on Maintenance:

- Close cab door (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK



15-20. LOWER DASH PANEL REPLACEMENT.

This task covers:

- a. Removal b. Installation

INITIAL SETUP

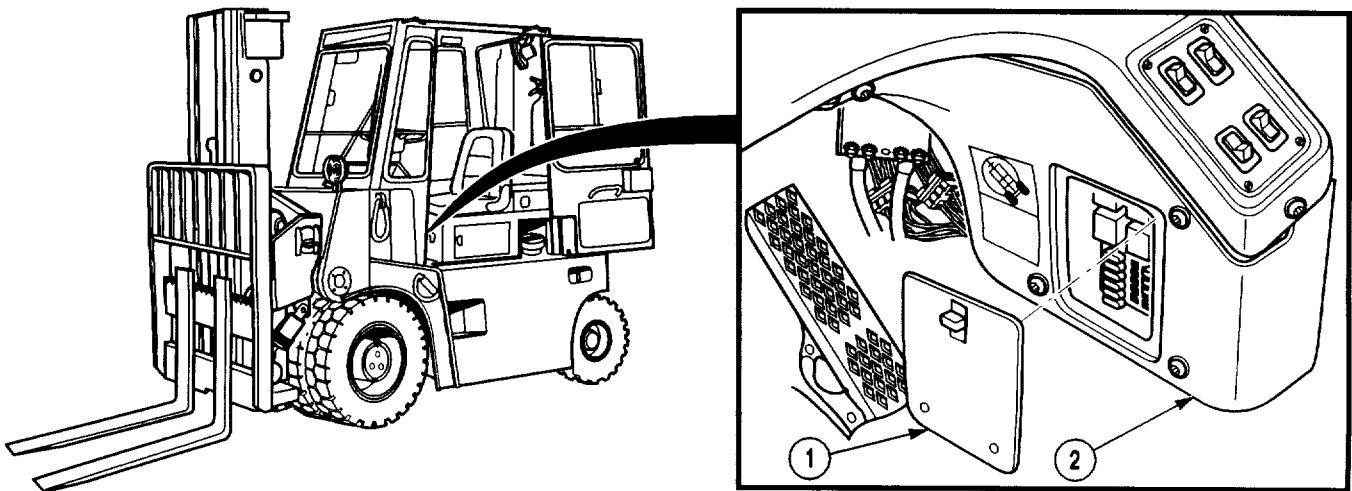
Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)

a. Removal



- (1) Remove fuse cover (1) from lower dash panel (2).

- (2) Remove seven screws (3), washers (4), and lower dash panel (2) from dash frame (5).
- (3) If damaged, remove seven clip nuts (6) from dash frame (5).

b. Installation.

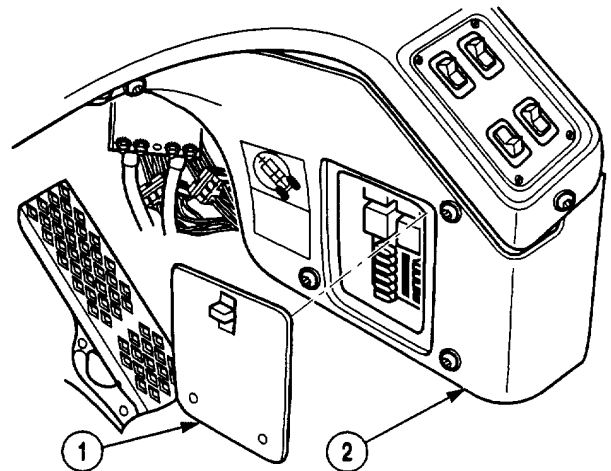
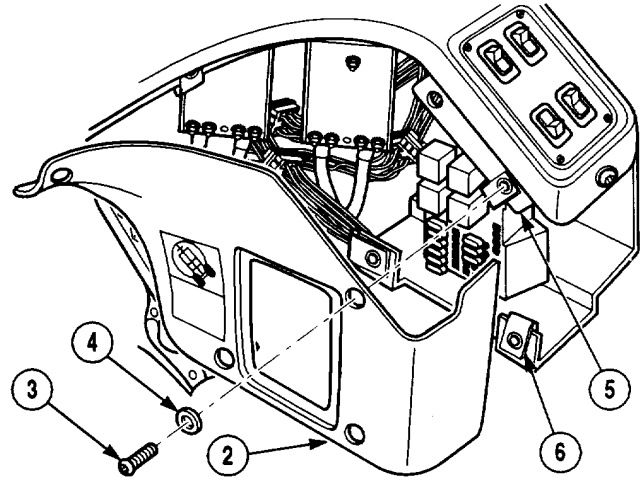
- (1) If removed, install seven clip nuts (6) on dash frame (5).
- (2) Install lower dash panel (2) on dash frame (5) with seven washers (4) and screws (3).
- (3) Install fuse cover (1) on lower dash panel (2).

NOTE

Follow-on Maintenance:

- * Remove wheel chocks (TM 10-3930-669-10).

END OF TASK



15-21. REAR VIEW MIRROR REPLACEMENT.

This task covers:

- a. Removal b. Installation

INITIAL SETUP

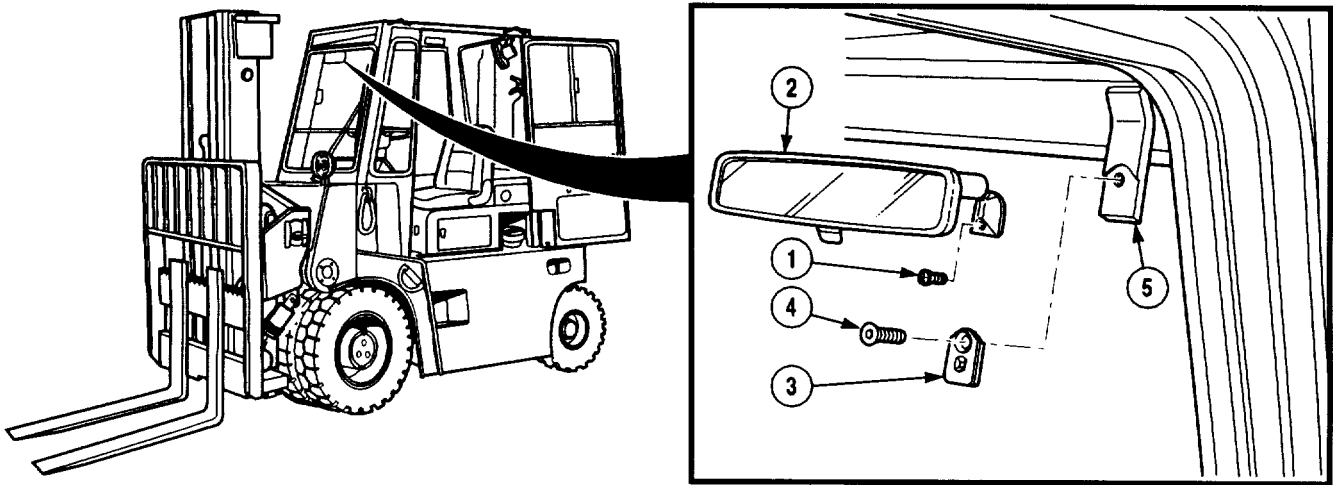
Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Cab door open (TM 10-3930-669-10)

a. Removal



- (1) Remove screw (1) from mirror (2).
- (2) Slide mirror (2) from plate (3).
- (3) Remove screw (4) and plate (3) from cab (5).

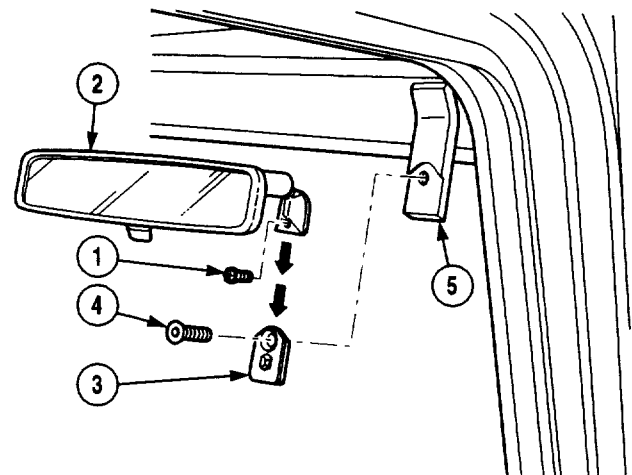
b. Installation.

- (1) Install plate (3) on cab (5) with screw (4).
- (2) Slide mirror (2) on plate (3).
- (3) Install screw (1) on mirror (2).

NOTE

Follow-on Maintenance:

- Remove wheel chocks (TM 10-3930-669-10).
- Close cab door ((TM 3930-669-10).



END OF TASK

15-22. MAST ADJUSTMENT.

This task covers:

Adjustment

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

Materials /Parts

Kit, Shims

Equipment Condition

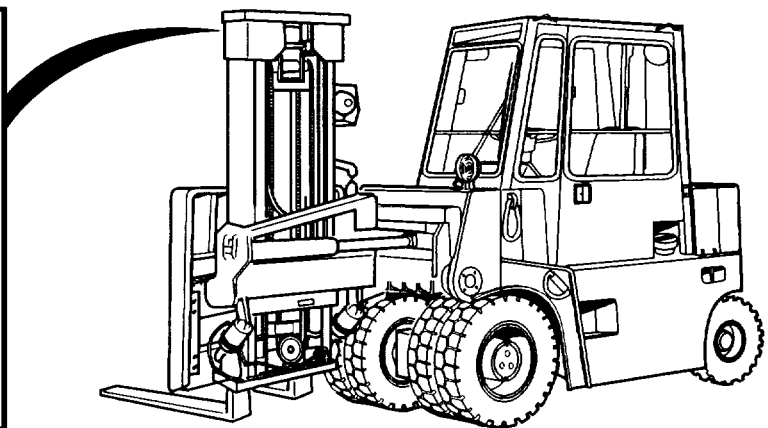
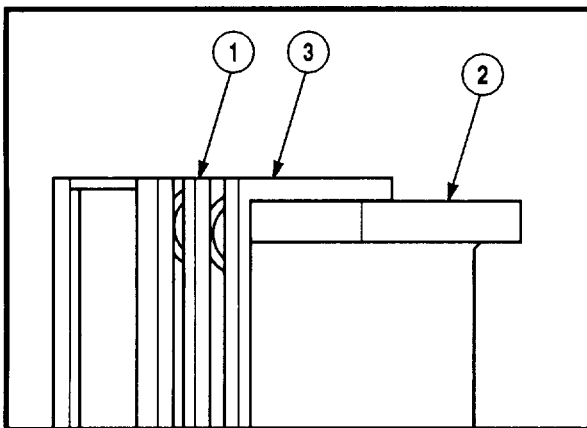
Engine OFF (TM 10-3930-669-10)

Parking brake applied (TM 10-3930-669-10)

Wheels chocked (TM 10-3930-669-10)

Mast pivoted 90° (TM 10-3930-669-10)

Adjustment.

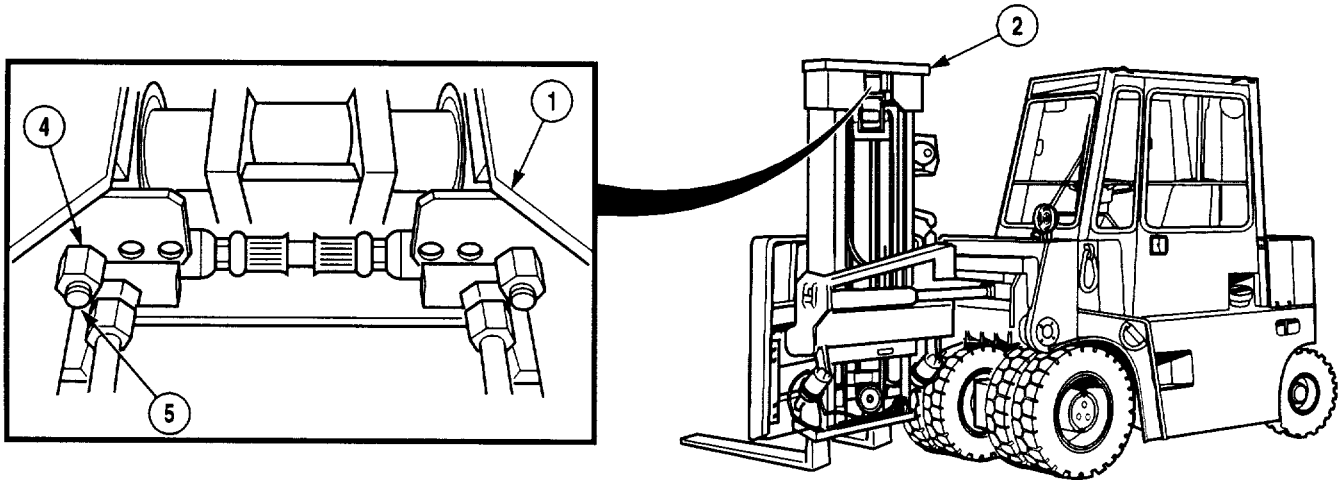


NOTE

Position the top of all three rails to the closest even position.

(1) Adjust inner rail (1) of mast assembly (2) so that it is the same height as the center rail (3).

15-22. MAST ADJUSTMENT (CONT).



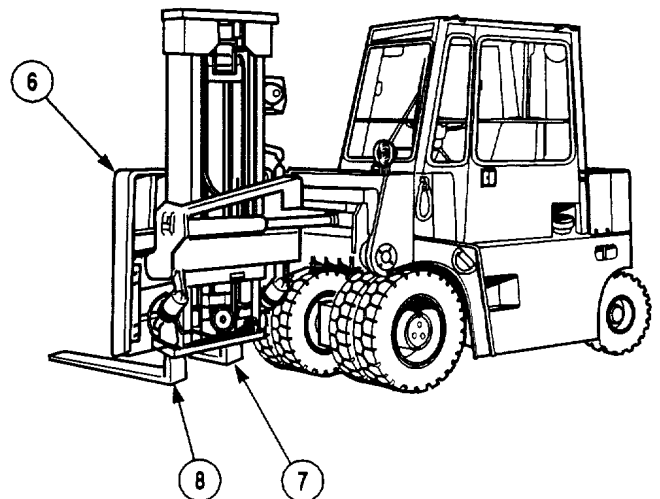
NOTE

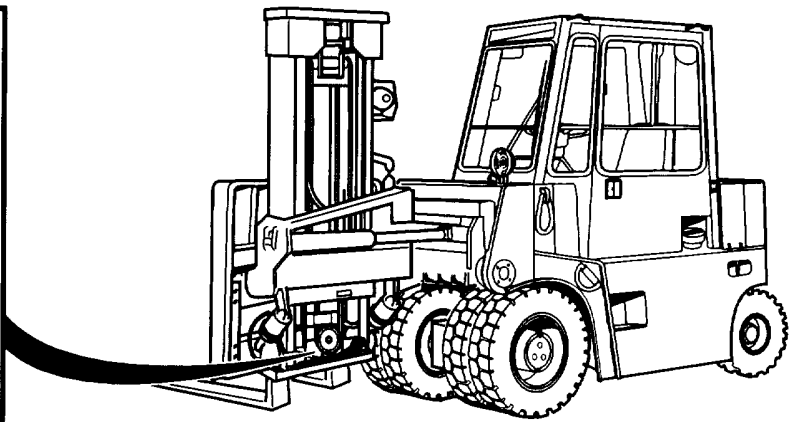
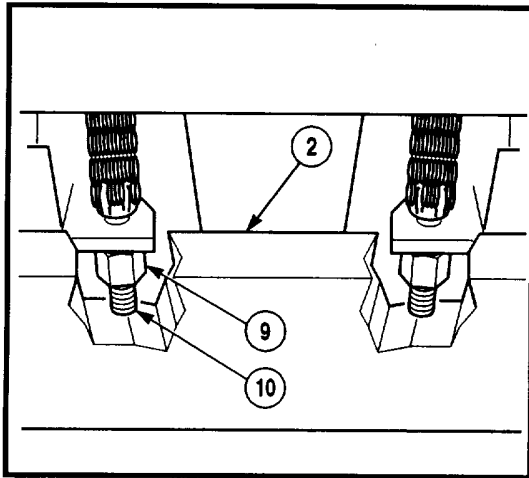
- When adjusting the inner rail, ensure to keep the same amount of tension on both upper/secondary chains.
- The distance from end of nut to end of shaft should be a minimum of 1/4 in. (6 mm) on each side.

(2) To adjust inner rail (1), tighten or loosen nuts (4) on shafts (5) at rear top side of mast (2) until inner rail is even with center rail.

(3) Lower mast carriage (6) to the ground.

(4) Position fork (7) to the far right of the carriage (6) and fork (8) to the far left of the carriage.

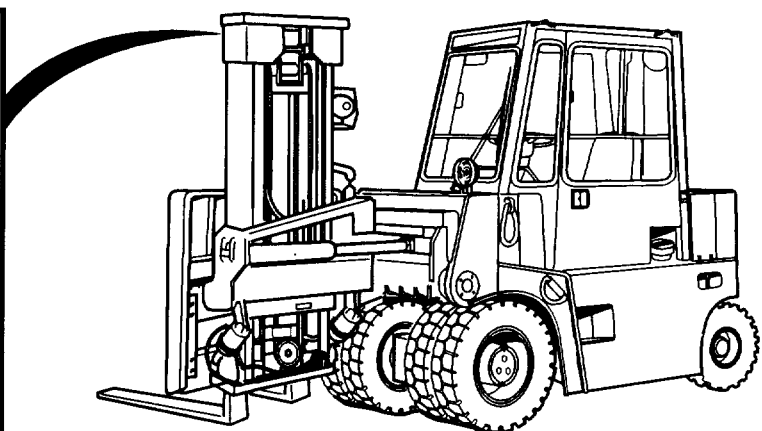
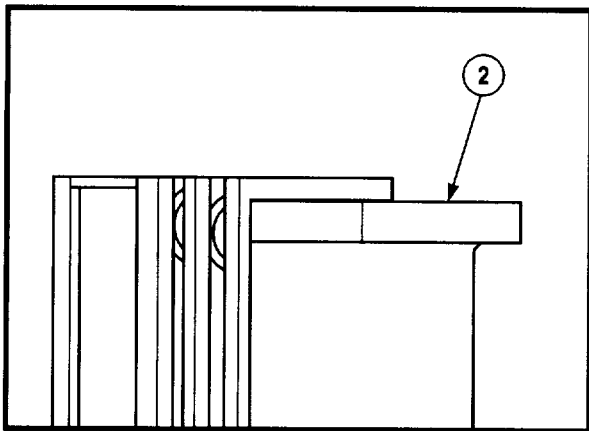




NOTE

- Prior to adjusting forks, ensure mast is vertical.
- When adjusting the carriage, be sure to keep the same amount of tension on both lower/primary chains.
- The distance from end of nut to end of shaft should be a minimum of 1/4 in. (6 mm) on each side.

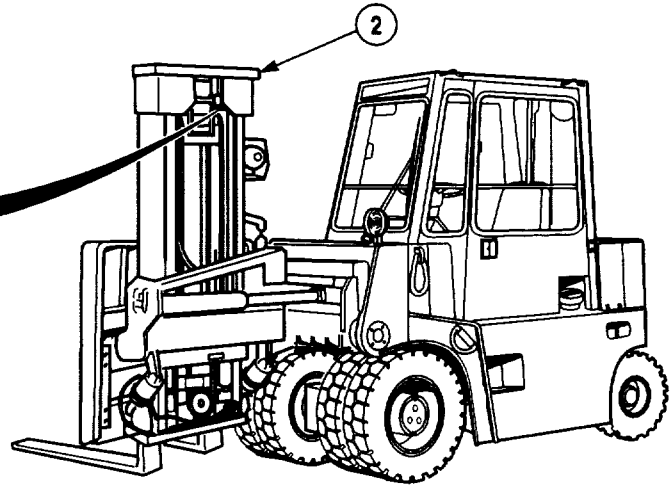
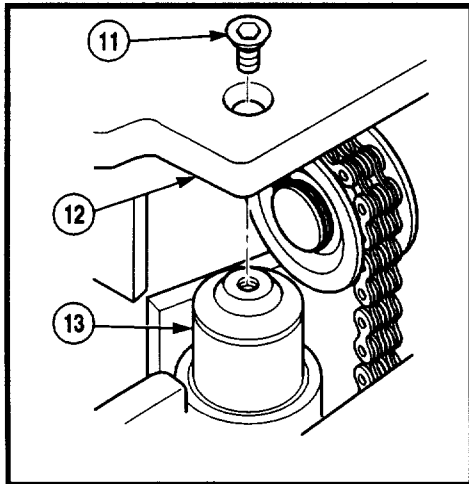
(5) Loosen or tighten nuts (9) on shafts (10) at front bottom of mast assembly (2) to a minimum of 1/4 in. (6 mm) from the ground level to the rear portion of the fork.



(6) Fully extend mast (TM 10-3930-669-10) and visually check balance of mast assembly (2).

(7) If mast assembly (2) is not evenly balanced, shims must be added.

15-22. MAST AJUSTMENT (CONT).

**NOTE**

- Perform steps (8) through (13) if mast assembly is uneven.
- If mast assembly is uneven, shim the lowest side.

WARNING

- To avoid personal injury, use a hoist or get assistance when lifting components that weigh more than 50 lbs (23 kg). Ensure all chains, hooks, slings, etc., are in good condition and are of correct capacity. Ensure hooks are positioned correctly. Always use a spreader bar when necessary. The lifting hooks must not be side loaded.
- Keep clear of equipment when equipment is being raised or lowered. Equipment may fall and cause serious injury or death to personnel.
- Do not work on any item supported only by lift jacks or hoist. Always use blocks or proper stands to support the item prior to any work. Equipment may fall and cause injury or death to personnel.

(8) Remove screw (11) from top of intermediate rail (12).

(9) Start fork lift (TM 10-3930-669-10) and raise mast assembly (2) until intermediate rail clears the top of stationary rail approximately six inches (152 mm).

NOTE

It may be necessary to pry the secondary cylinder rod out of the intermediate rail top cross member.

(10) Block the intermediate rail (12) in position and lower secondary cylinder (13).

NOTE

Each shim is .050 in. (1.27 mm) thick.

(11) Position shim (s) on top of secondary cylinder (13).

(12) Raise secondary cylinder (13) and install screw (11) into intermediate rail (12) and secondary cylinder.

(13) Repeat step (6).

NOTE

Follow-on Maintenance:

- Close mast (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

15-81/(15-82 blank)

CHAPTER 16

BODY ACCESSORY ITEMS MAINTENANCE

Para	Contents	Page
16-1	Introduction	16-1
16-2	Front Windshield Wiper Assembly Replacement/Repair	16-2
16-3	Rear Windshield Wiper Assembly Replacement/Repair	16-7
16-4	Top Windshield Wiper Assembly Replacement	16-12
16-5	Front/Rear Windshield Wiper Arm Replacement.....	16-14
16-6	Top Windshield Wiper Arm Replacement	16-17
16-7	Cab Fan Replacement	16-19
16-8	Cab Heater Replacement/Repair	16-20
16-9	Fire Extinguisher Support Replacement.....	16-28
16-10	Heater Temperature Control Replacement.....	16-29
16-11	Heater Valve Replacement	16-32
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16-13	Cab Heater Hose Replacement	16-42

16-1. INTRODUCTION.

This chapter contains maintenance instructions for removing, replacing, repairing, installing, and adjusting body accessory items authorized by the Maintenance Allocation Chart (MAC) at the Unit Maintenance level.

16-2. FRONT WINDSHIELD WIPER ASSEMBLY REPLACEMENT/REPAIR.

This task covers:

- | | | |
|----------------|------------------------|-----------------|
| a. Removal | c. Cleaning/Inspection | e. Installation |
| b. Disassembly | d. Assembly | |

INITIAL SETUP*Tools and Special Tools*

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Wrench, Torque (0-60 N.m)
(Item 12, Appendix B)

Materials/Parts

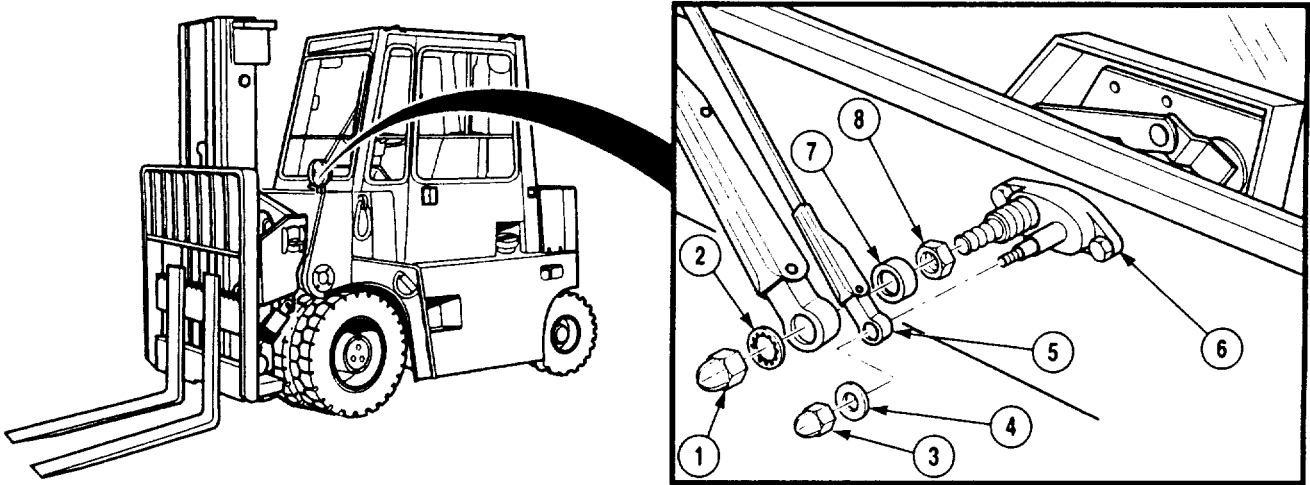
Solvent, Drycleaning (Item 20, Appendix C)
Gasket
Nut, Lock
Screw, Lock (3)
Washer, Lock
Washer, Lock

Materials/Parts - Continued

Washer, Lock (2)
Washer, Lock (2)

Equipment Condition

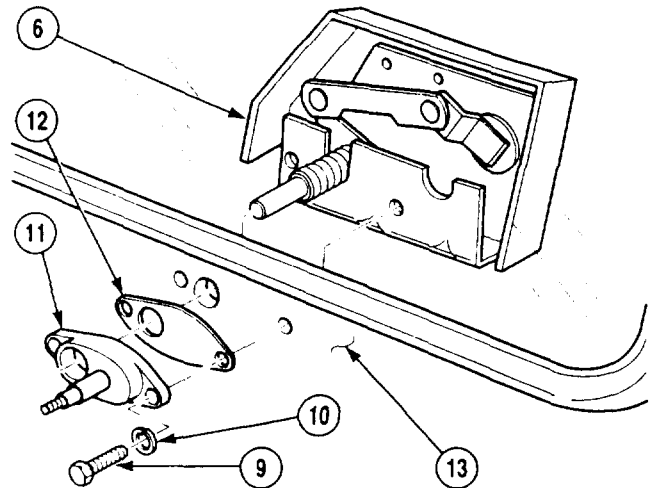
Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Mast assembly pivoted 90° and fully side
shifted (TM 10-3930-669-10)
Batteries disconnected (Para 7-48)

a. Removal**WARNING**

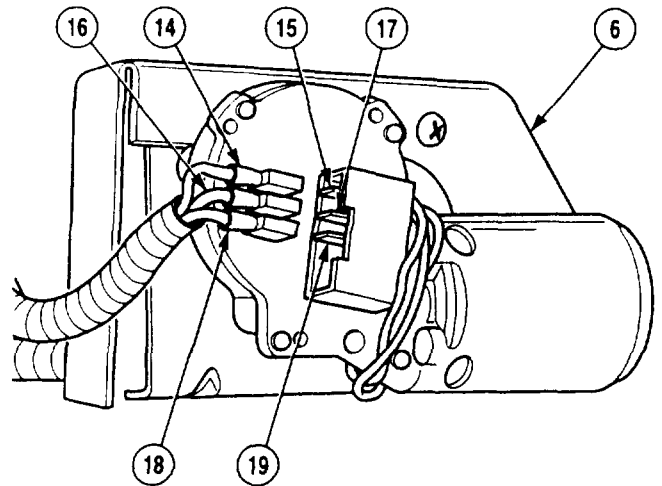
Use care when removing wiper arm. Wiper arm is under spring tension and can act as projectile when released and could cause severe eye injury.

- (1) Remove nut (1), lock washer (2), nut (3), washer (4), and wiper arm (5) from wiper assembly (6). Discard lock washer.
- (2) Remove dust cover (7) and nut (8) from wiper assembly (6).

- (3) Remove two screws (9), lock washers (10), flange (11), and gasket (12) from wiper assembly (6) and cab (13). Discard lock washers and gasket.
- (4) Remove wiper assembly (6) from cab (13).

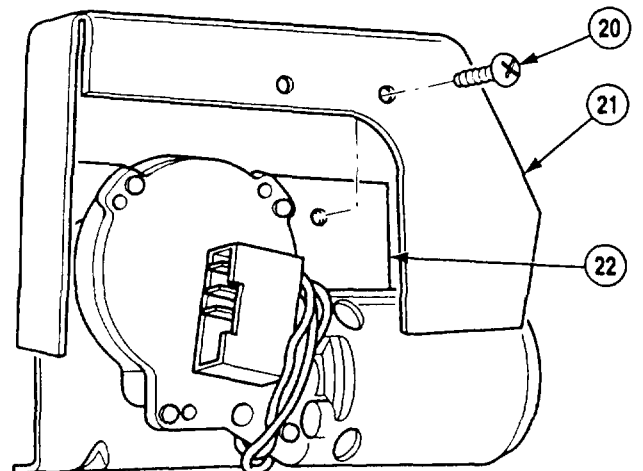


- (5) Remove green wire connector (14) from terminal L (15) of wiper assembly (6).
- (6) Remove red wire connector (16) from terminal H (17) of wiper assembly (6).
- (7) Remove black wire connector (18) from terminal P (19) of wiper assembly (6).
- (8) Place wiper assembly (6) on work surface.



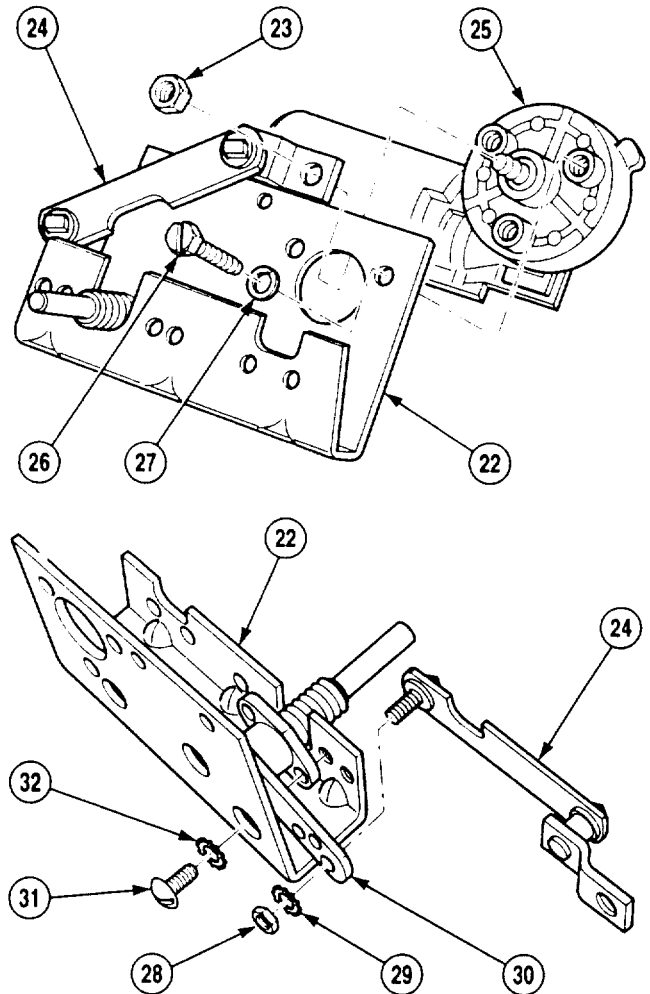
b. Disassembly.

- (1) Remove two screws (20) and shield (21) from motor mount (22).



16-2. FRONT WINDSHIELD WIPER ASSEMBLY REPLACEMENT/REPAIR (CONT).

- (2) Remove lock nut (23) and link assembly (24) from motor (25). Discard lock nut.
- (3) Remove three screws (26), lock washers (27) and motor (25) from motor mount (22). Discard lock washers.
- (4) Remove nut (28), lock washer (29), and link assembly (24) from pivot assembly (30). Discard lock washer.
- (5) Remove two screws (31), lock washers (32), and pivot assembly (30) from motor mount (22). Discard lock washers.

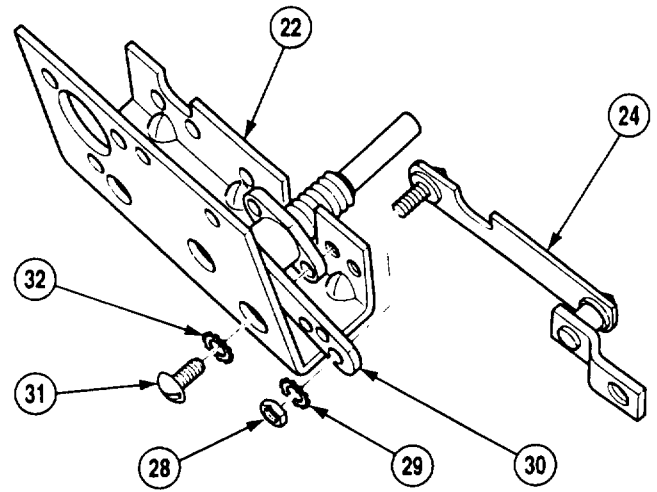
**c. Cleaning/Inspection.****WARNING**

- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

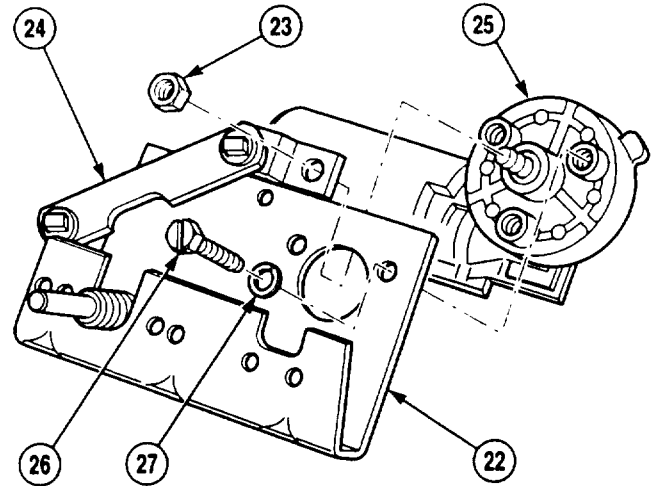
- (1) Clean all metal parts with drycleaning solvent.
- (2) Inspect all parts for breaks, cracks, burrs, and sharp edges.
- (3) Replace all damaged parts.

d. Assembly.

- (1) Install pivot assembly (30) on motor mount (22) with two screws (31) and lock washers (32).
- (2) Install link assembly (24) on pivot assembly (30) with nut (28) and lock washer (29). Tighten nut to 56 lb-in (6 N.m).

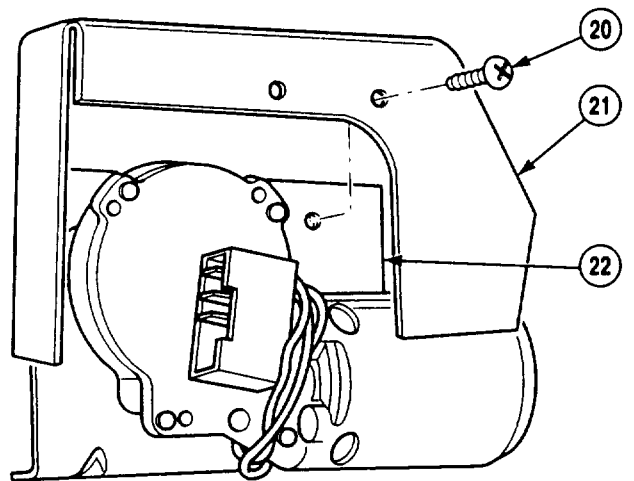


- (3) Install motor (25) on motor mount (22) with three lock washers (27) and screws (26). Tighten screws to 10 lb-ft (14 N.m).



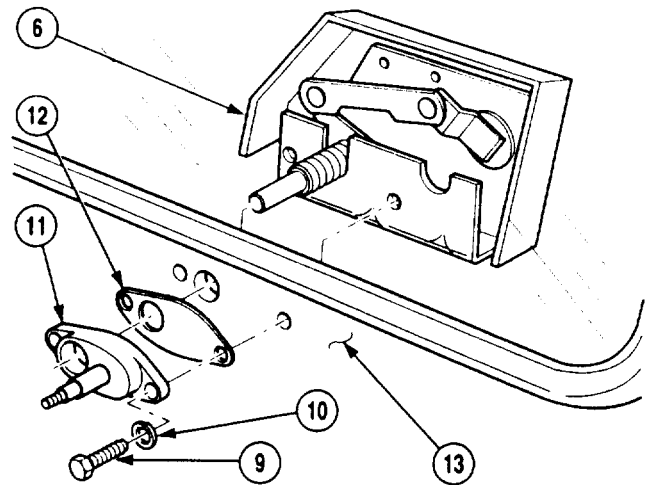
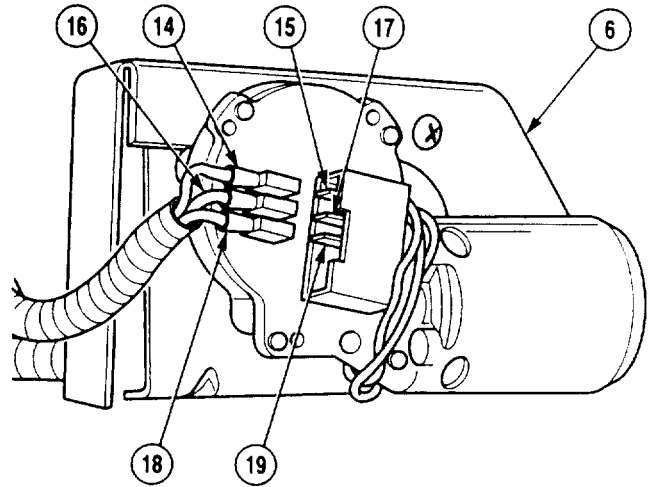
- (4) Install link assembly (24) on motor (25) with lock nut (23). Tighten lock nut to 10 lb-ft (14 N.m).

- (5) Install shield (21) on motor mount (22) with two screws (20).

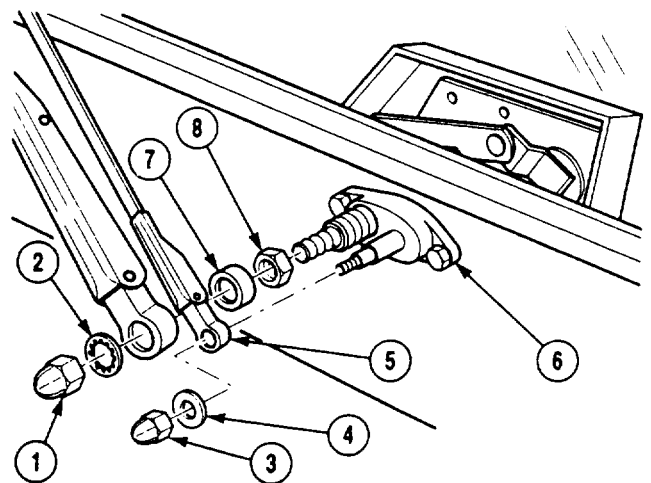


16-2. FRONT WINDSHIELD WIPER ASSEMBLY REPLACEMENT/REPAIR (CONT).**e. Installation.**

- (1) Install black wire connector (18) on terminal P (19) of wiper assembly (6).
- (2) Install red wire connector (16) on terminal H (17) of wiper assembly (6).
- (3) Install green wire connector (14) on terminal L (15) of wiper assembly (6).
- (4) Position wiper assembly (6) on cab (13).
- (5) Install gasket (12) and flange (11) on wiper assembly (6) and cab (13) with two screws (9) and lock washers (10). Tighten screws to 10 lb-ft (14 N.m).
- (6) Install nut (8) and dust cap (7) on wiper assembly (6).
- (7) Install wiper arm (5) on wiper assembly (6) with washer (4), nut (3), lock washer (2), and nut (1).

**NOTE****Follow-on Maintenance:**

- Connect batteries (Para 7-48).
- Center and close mast assembly (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

16-3. REAR WINDSHIELD WIPER ASSEMBLY REPLACEMENT/REPAIR.

This task covers:

- | | | |
|----------------|------------------------|-----------------|
| a. Removal | c. Cleaning/Inspection | e. Installation |
| b. Disassembly | d. Assembly | |

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Wrench, Torque (0-60 N.m)
(Item 12, Appendix B)

Materials/Parts - Continued

Washer, Lock (2)
Washer, Lock (3)
Gasket

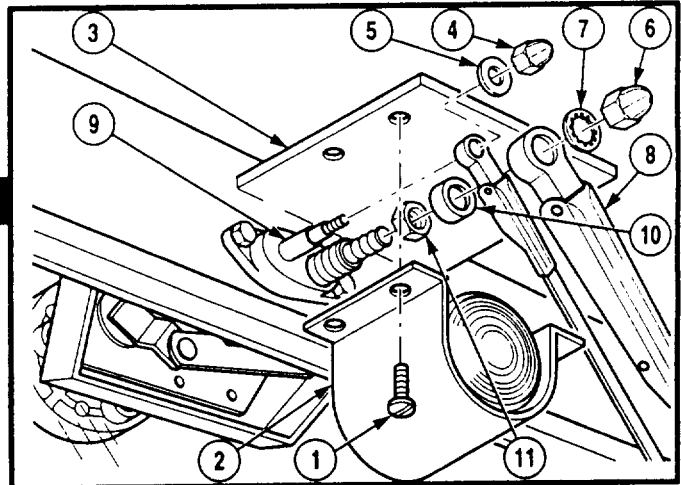
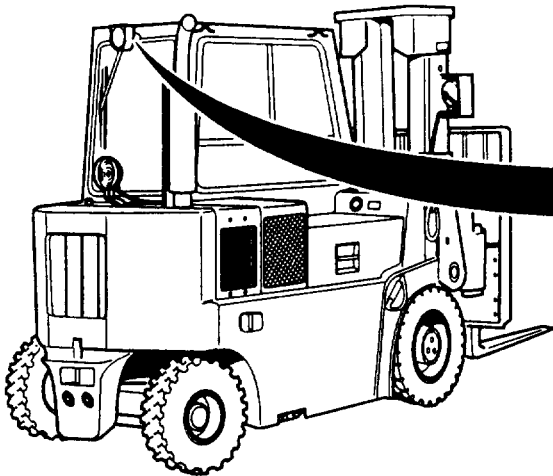
Materials / Parts

Solvent, Drycleaning (Item 20, Appendix C)
Washer, Lock
Washer, Lock
Nut, Lock
Washers, Lock (2)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Batteries disconnected (Para 7-48)

a. Removal



- (1) Remove four screws (1) and stoplight assembly (2) from bracket (3).

WARNING

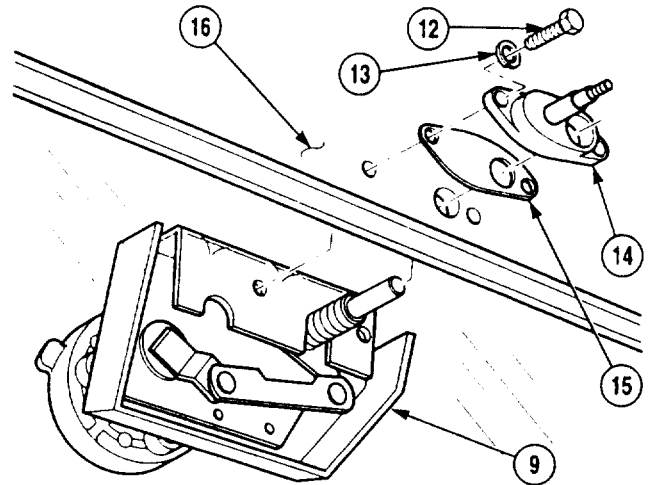
Use care when removing wiper arm. Wiper arm is under spring tension and can act as projectile when released and could cause severe eye injury.

- (2) Remove nut (4), washer (5), nut (6), lock washer (7), and wiper arm (8) from wiper assembly (9). Discard lock washer.
- (3) Remove dust cover (10) and nut (11) from wiper assembly (9).

16-3. REAR WINDSHIELD WIPER ASSEMBLY REPLACEMENT/REPAIR (CONT).

(4) Remove two screws (1.2), lock washers (13), flange (14), and gasket (15) from wiper assembly (9) and cab (16). Discard lock washers and gasket.

(5) Remove wiper assembly (9) from cab (16).

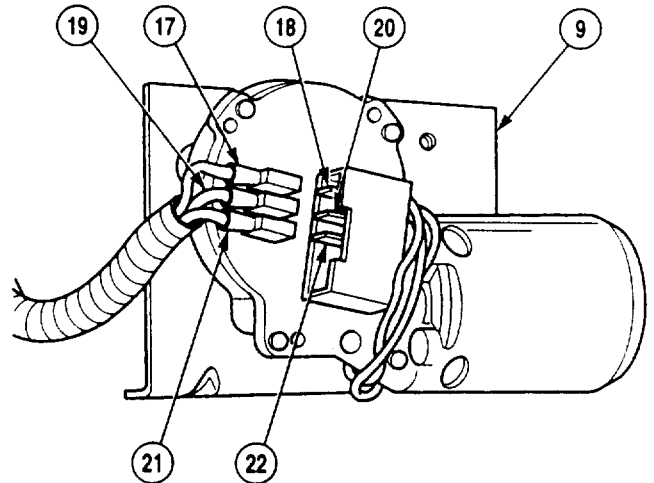


(6) Remove green wire connector (17) from terminal L (18) of wiper assembly (9).

(7) Remove red wire connector (19) from terminal H (20) of wiper assembly (9).

(8) Remove black wire connector (21) from terminal S (22) of wiper assembly (9).

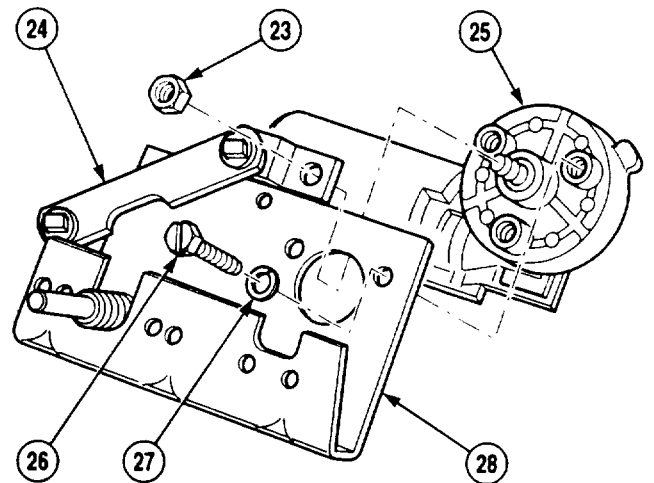
(9) Place wiper assembly (9) on work surface.



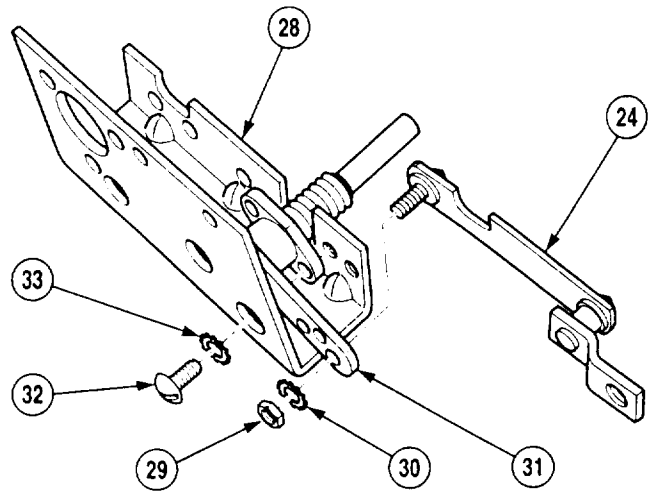
b. Disassembly.

(1) Remove lock nut (23) and link assembly (24) from motor (25). Discard lock nut.

(2) Remove three screws (26), lock washers (27), and motor (25) from motor mount (28). Discard lock washers.



- (3) Remove nut (29), lock washer (30), and link assembly (24) from pivot assembly (31). Discard lock washer.
- (4) Remove two screws (32), lock washers (33), and pivot assembly (31) from motor mount (28). Discard lock washers.



c. Cleaning/Inspection.

WARNING

- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

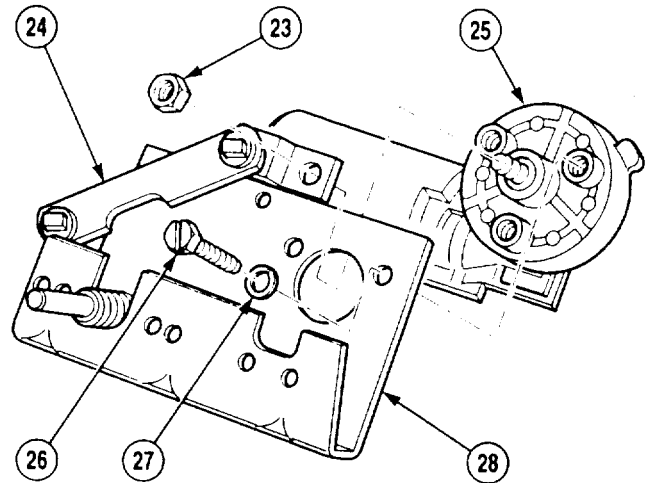
- (1) Clean all metal parts with drycleaning solvent.
- (2) Inspect all parts for breaks, cracks, burrs, and sharp edges.
- (3) Replace all damaged parts.

d. Assembly.

- (1) Install pivot assembly (31) on motor mount (28) with two screws (32) and lock washers (33).
- (2) Install link assembly (24) on pivot assembly (31) with nut (29) and lock washer (30). Tighten nut to 56 lb-in (6 N•m).

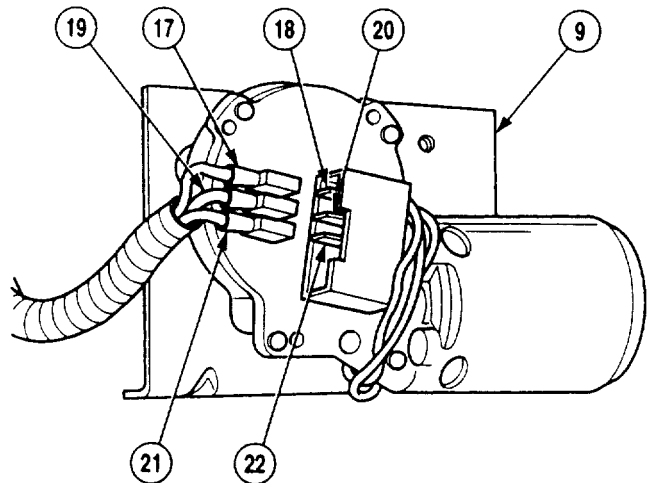
16-3. REAR WINDSHIELD WIPER ASSEMBLY REPLACEMENT/REPAIR (CONT).

- (3) Install motor (25) on motor mount (23) with three lock washers (27) and screws (26). Tighten screws to 10 lb-ft (14 N•m).
- (4) Install link assembly (24) on motor (25) with lock nut (23). Tighten lock nut to 10 lb-ft (14 N•m).

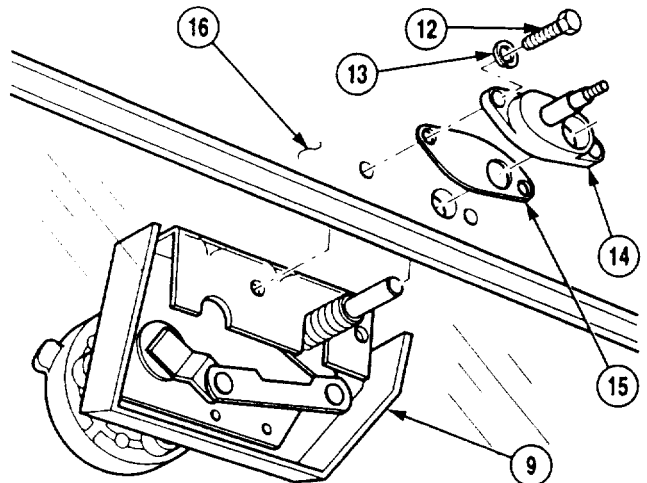


e. Installation.

- (1) Install black wire connector (21) on terminal S (22) of wiper assembly (9).
- (2) Install red wire connector (19) on terminal H (20) of wiper assembly (9).
- (3) Install green wire connector (17) on terminal L (18) of wiper assembly (9).



- (4) Position wiper assembly (9) on cab (16).
- (5) Install gasket (15) and flange (14) on wiper assembly (9) and cab (16) with two screws (12) and lock washers (13). Tighten screws to 10 lb-in (14 N•m).

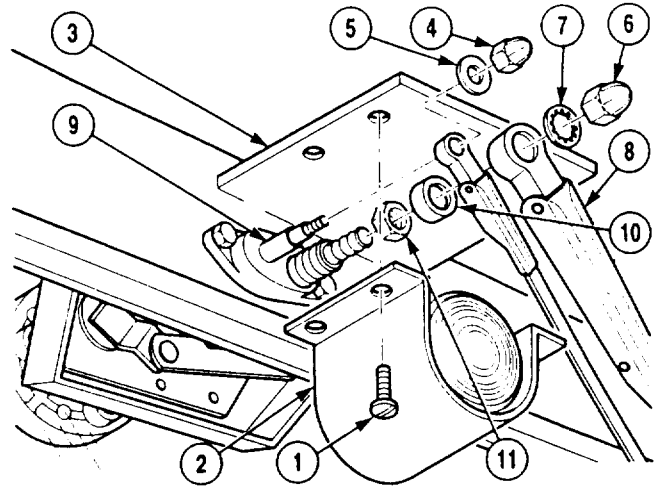


- (6) Install nut (11) and dust cover (10) on wiper assembly (9).

WARNING

Use care when installing wiper arm. Wiper arm is under spring tension and can act as projectile when released and could cause severe eye injury.

- (7) Install wiper arm (8) on wiper assembly (9) with lock washer (7), nut (6), washer (5), and nut (4).
- (8) Install stoplight assembly (2) on bracket (3) with four screws (1).



NOTE

Follow-on Maintenance:

- Connect batteries (Para 7-48).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

16-4. TOP WINDSHIELD WIPER ASSEMBLY REPLACEMENT.

This task covers:

- a. Removal b. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

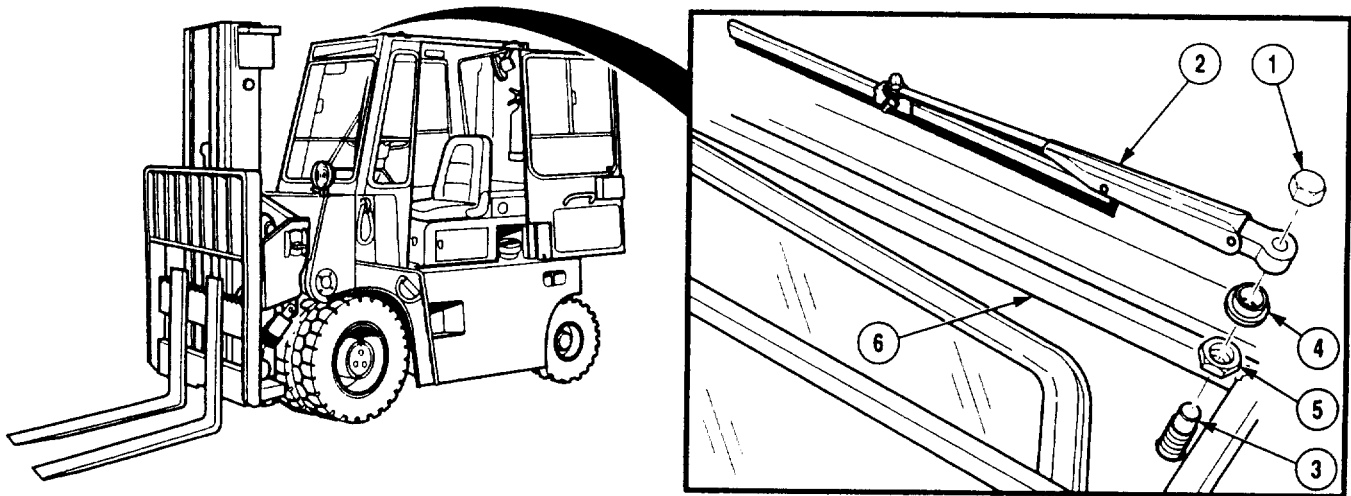
Materials / Parts

Tags, Identification (Item 21, Appendix C)
Washer, Lock (2)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Cab door opened (TM 10-3930-669-10)
Batteries disconnected (Para 7-48)

a. Removal.



WARNING

Wiper arm is spring loaded and could cause injury during removal.

- (1) Remove nut (1) and wiper arm assembly (2) from drive shaft (3).
- (2) Remove flange (4) and nut (5) from drive shaft (3) and cab roof (6).

NOTE

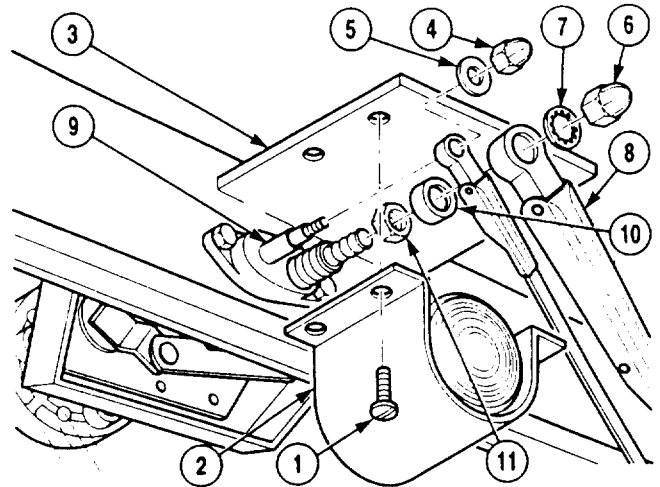
Tag and mark all wires prior to removal.

- (3) Remove three wires (7, 8, and 9) from wiper motor assembly (10).

WARNING

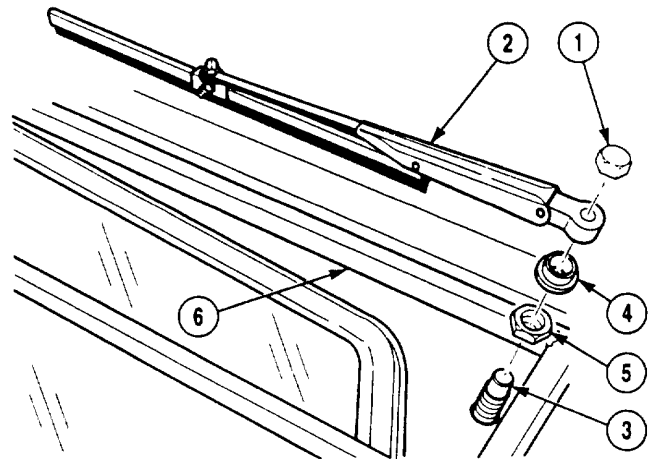
Wiper motor will drop when mounting is removed. Support wiper motor assembly during removal to prevent damage to equipment or injury to personnel.

- (4) Remove two screws (11), lock washers (12), and wiper motor assembly (10) from cab roof (6). Discard lock washers.



b. Installation.

- (1) Install wiper motor assembly (10) on cab roof (6) with two lock washers (12) and screws (11).
- (2) Install three wires (7, 8, and 9) on wiper motor assembly (10).
- (3) Install flange (4) and nut (5) on drive shaft (3) and cab roof (6).
- (4) Install wiper arm assembly (2) on driveshaft (3) with nut (1).



NOTE

Follow-on Maintenance:

- Close cab door (TM 10-3930-669-10).
- Connect batteries (Para 7-48).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

16-5. FRONT/REAR WINDSHIELD WIPER ARM RE PLACEMENT.

This task covers:

- a. Removal b. Cleaning/Inspection c. Installation

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Wrench, Torque (0 to 175 lb-ft [0-237 N-m])
(Item 12, Appendix B)

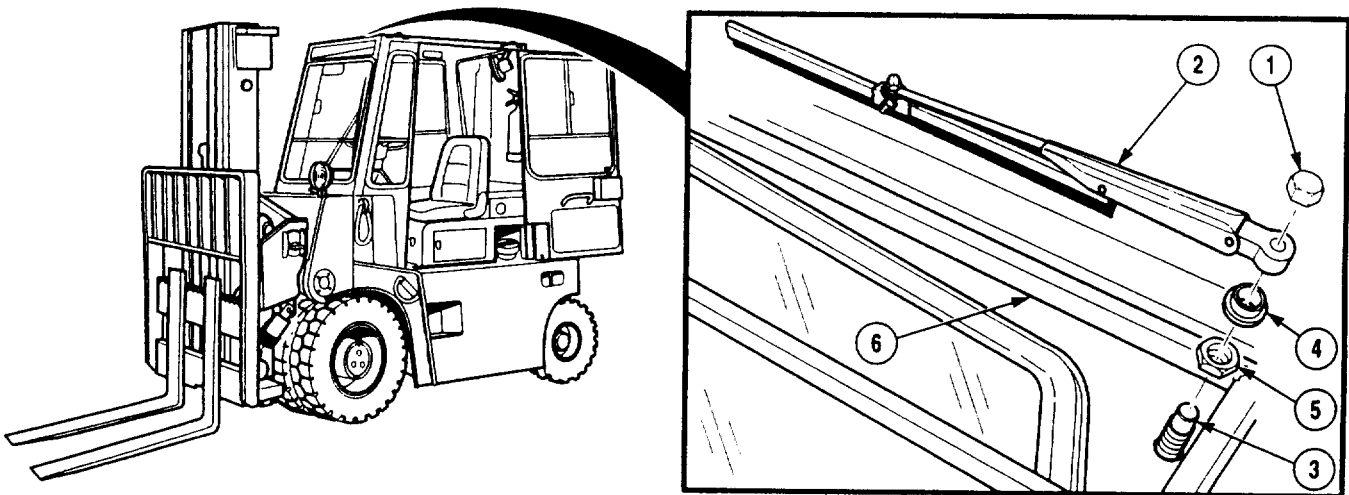
Materials /Parts

Solvent, Drycleaning (Item 20, Appendix C)
Washer, Lock
Nut, Lock

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Rear stoplight assembly removed (Para 7-31)
Mast assembly pivoted 90°
(TM 10-3930-669-10)

a. Removal.



WARNING

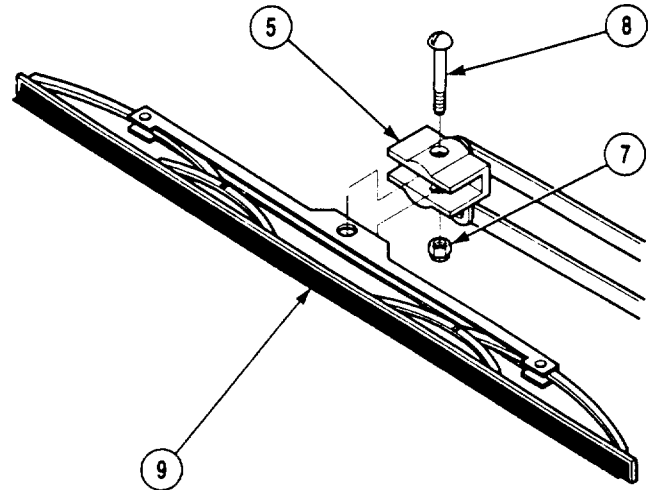
Use care when removing wiper arm. Wiper arm is under spring tension and can act as projectile when released and could cause severe eye injury.

NOTE

Front and rear windshield wiper arms are replaced the same way. Front windshield wiper is shown.

- (1) Remove nut (1), lock washer (2), nut (3), washer (4), and wiper arm (5) from windshield wiper assembly (6). Discard lock washer.

- (2) Remove lock nut (7), screw (8), and wiper blade (9) from wiper arm (5). Discard lock nut.



b. Cleaning/Inspection.

WARNING

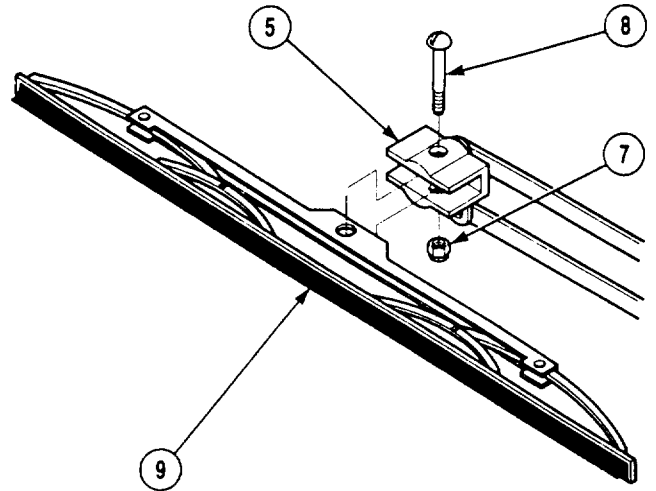
- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

- (1) Clean all metal parts with drycleaning solvent.
- (2) Do not allow drycleaning solvent to come in contact with rubber portion of blade.
- (3) Inspect all parts for breaks, cracks, burrs, and sharp edges.
- (4) Replace all damaged parts.

16-5. FRONT/REAR WINDSHIELD WIPER ARM REPLACEMENT (CONT).

c. Installation.

- (1) Install wiper blade (9) on wiper arm (5) with screw (8) and lock nut (7).



- (2) Install wiper arm (5) on windshield wiper assembly (6) with washer (4), nut (3), lock washer (2), and nut (1).

NOTE

Follow-on Maintenance:

- Install rear stoplight assembly (Para 7-31).
- Close mast assembly (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

16-6. TOP WINDSHIELD WIPER ARM REPLACEMENT.

This task covers:

a. Removal

b. Installation

INITIAL SETUP*Tools and Special Tools*

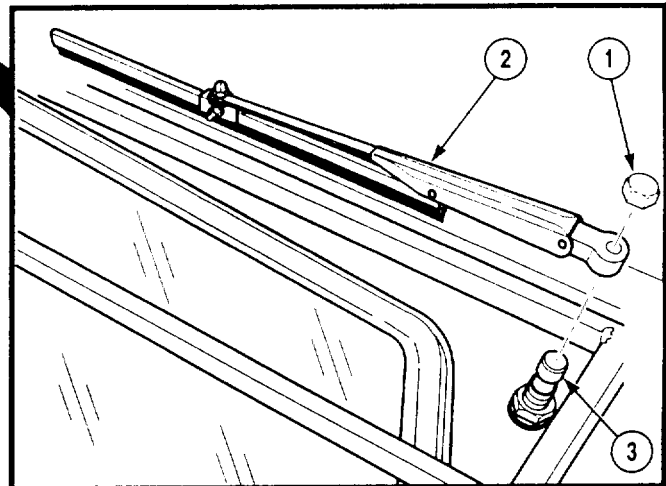
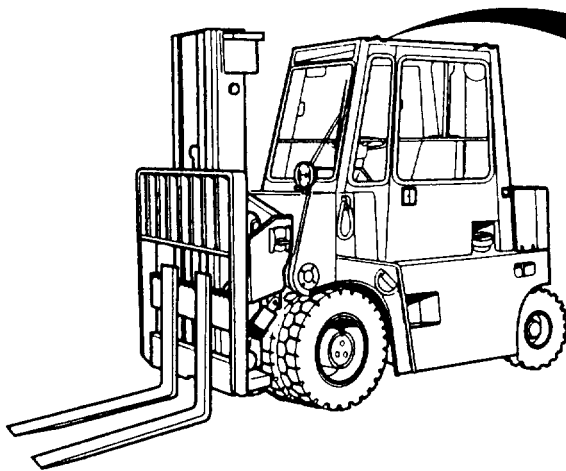
Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

Materials/Parts

Nut, Lock
Washer, Lock

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)

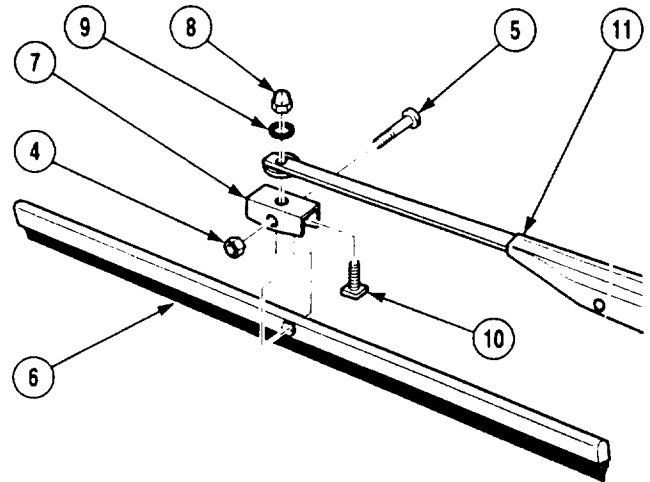
a. Removal.**WARNING**

Wiper arm is spring loaded and could cause injury during removal.

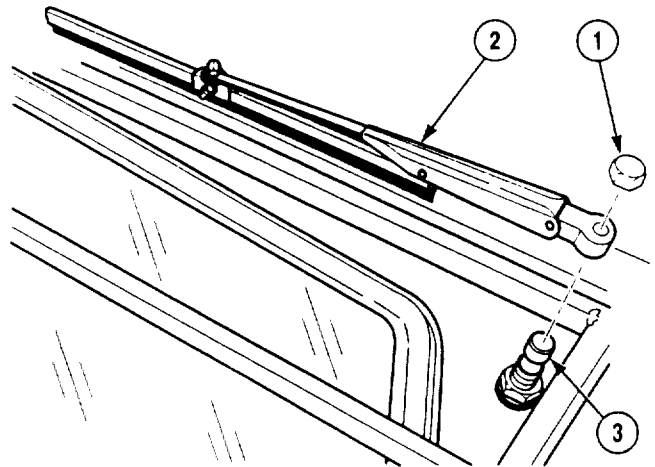
(1) Remove nut (1) and wiper arm assembly (2) from drive shaft (3).

16-6. TOP WINDSHIELD WIPER ARM REPLACEMENT (CONT).

- (2) Remove lock nut (4), screw (5), and blade (6) from bracket (7). Discard lock nut.
- (3) Remove nut (8), lock washer (9), bracket (7), and screw (10) from arm (11). Discard lock washer.

**b. Installation.**

- (1) Install bracket (7) on arm (11) with screw (10), lock washer (9), and nut (8).
- (2) Install blade (6) on bracket (7) with screw (5) and lock nut (4).
- (3) Install wiper arm assembly (2) on drive shaft (3) with nut (1).

**NOTE****Follow-on Maintenance:**

- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK

16-7. CAB FAN REPLACEMENT.

This task covers:

- a. Removal
- b. Installation

INITIAL SETUP

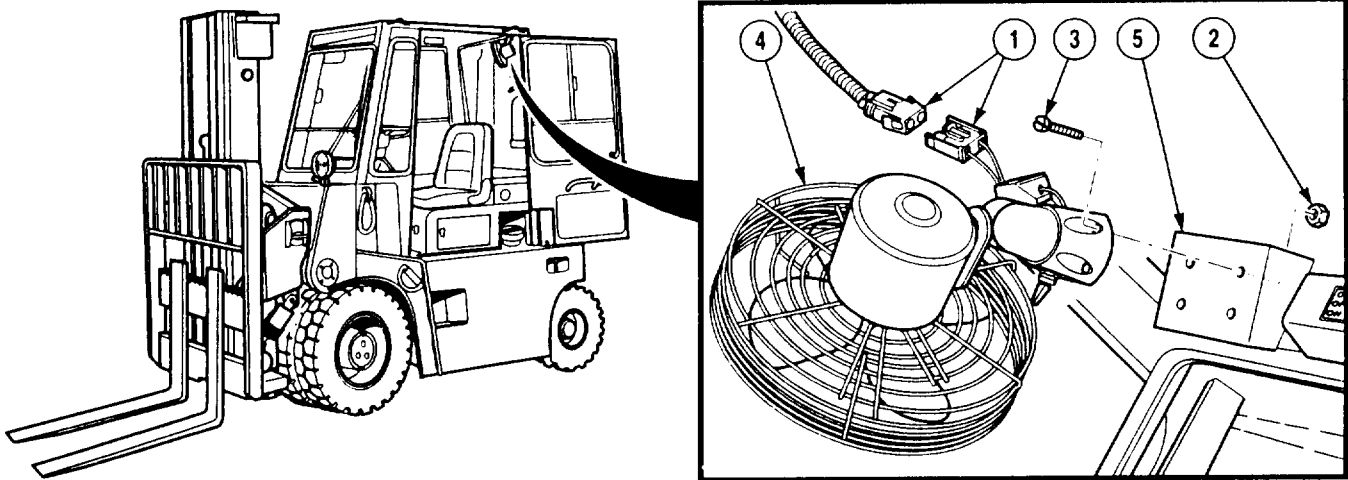
Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Cab door open (TM 10-3930-669-10)

a. Removal.



- (1) Disconnect connector (1).
- (2) Remove four nuts (2), screws (3), and fan (4) from bracket (5).

b. Installation.

- (1) Install fan (4) on bracket (5) with four screws (3) and nuts (2).
- (2) Connect connector (1).

NOTE

Follow-on Maintenance:

- Remove wheel chocks (TM 10-3930-669-10).
- Close cab door (TM 10-3930-669-10).

END OF TASK

16-8. CAB HEATER REPLACEMENT/REPAIR.

This task covers:

- | | | |
|----------------|------------------------|-----------------|
| a. Removal | c. Cleaning/Inspection | e. Installation |
| b. Disassembly | d. Assembly | |

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)

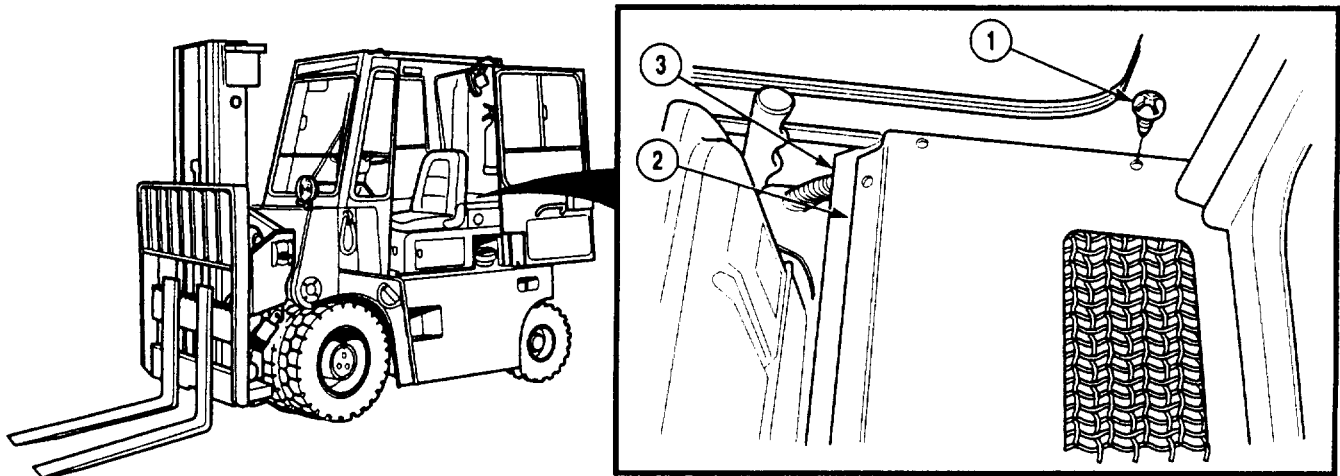
Materials/Parts

Adhesive (Item 1, Appendix C)
Cable Ties (Item 4, Appendix C)
Cap and Plug Set (Item 5, Appendix B)
Solvent, Drycleaning (Item 20, Appendix C)
Tags, Identification (Item 21, Appendix C)
Nuts, Assembled (2)

Equipment Condition

Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Cab door open (TM 10-3930-669-10)
Seat fully forward position
(TM 10-3930-669-10)

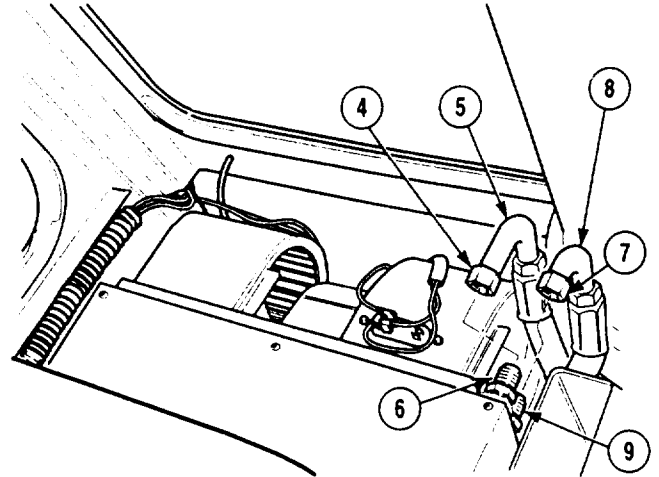
a. Removal.



- (1) Remove seven screws (1) and cover (2) from heater housing (3).

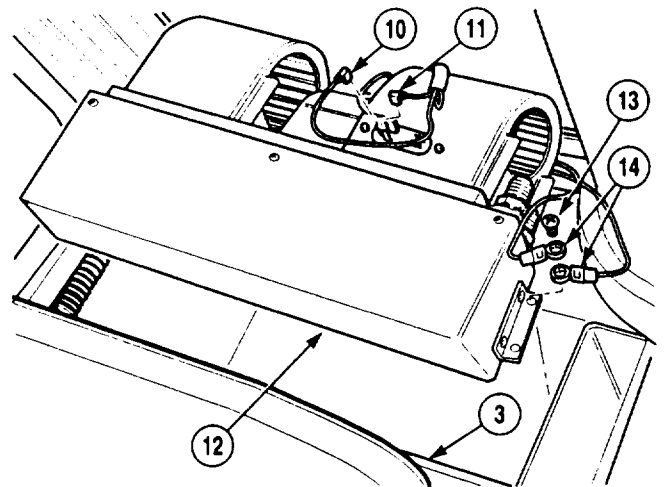
NOTE

- Install caps and plugs on oil lines and fittings.
 - Tag and mark oil lines.
- (2) Loosen fitting (4) and remove hose (5) from heater oil outlet (6).
 - (3) Loosen fitting (7) and remove hose (8) from heater oil inlet (9).



NOTE

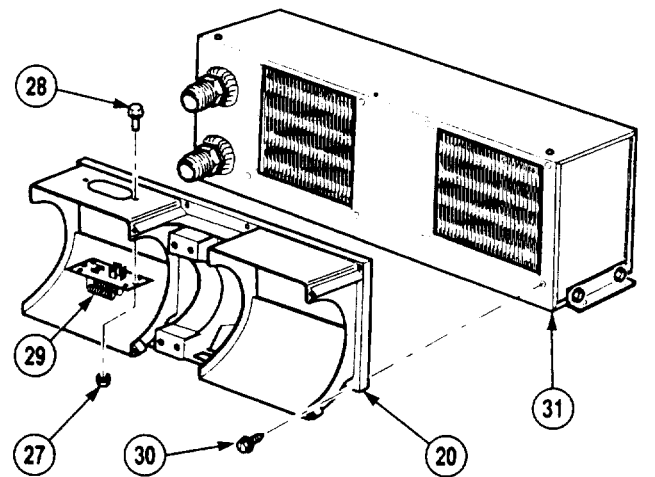
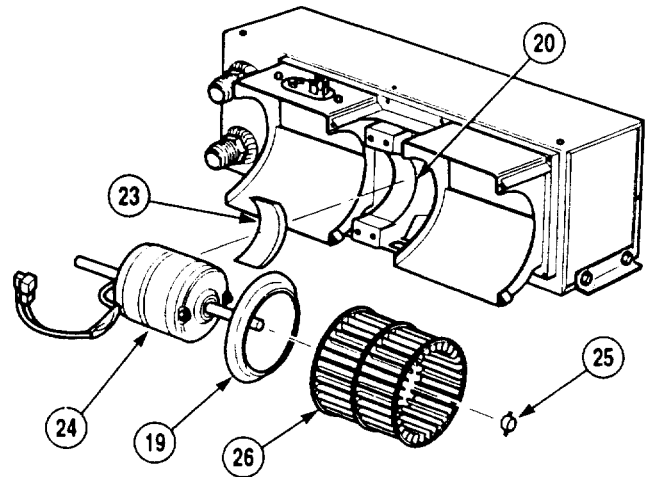
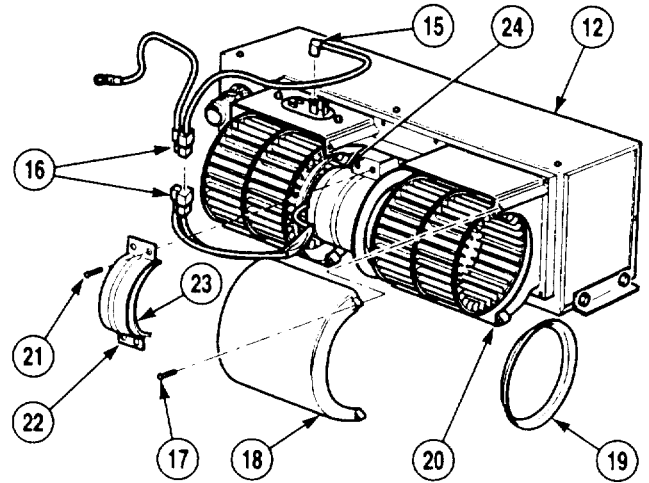
- Tag and mark all wires prior to removal.
 - Remove cable ties as required.
- (4) Disconnect two wires (10 and 11) from heater assembly (12).
 - (5) Remove three screws (13), two wires (14), and heater assembly (12) from heater housing (3).
 - (6) Place heater assembly (12) on work surface.



16-8. CAB HEATER REPLACEMENT/REPAIR (CONT).

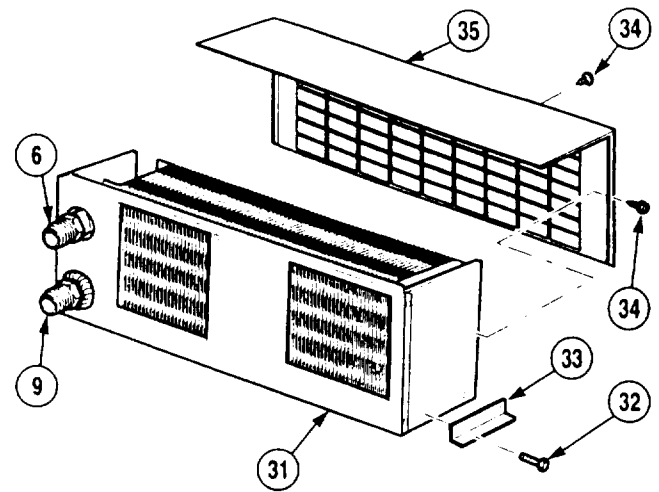
b. Disassembly.

- (1) Disconnect wire (15) from heater assembly (12).
- (2) Disconnect connector (16).
- (3) Remove eight screws (17), two fan covers (18), and outer air rams (19) from fan housing (20).
- (4) Remove four screws (21), clamp (22), and rubber liner (23) from fan housing (20) and fan motor assembly (24).
- (5) Remove rubber liner (23) from clamp (22).
- (6) Remove fan motor assembly (24) and rubber liner (23) from fan housing (20).
- (7) Remove two retaining clips (25), fans (26), and inner air rams (19) from fan motor assembly (24).
- (8) Remove two assembled nuts (27), screws (28), and diode plate assembly (29) from fan housing (20). Discard two assembled nuts.
- (9) Remove eight screws (30) and fan housing (20) from heater core housing (31).



(10) Remove four screws (32) and two brackets (33) from heater core housing (31).

(11) Remove ten screws (34) and cover (35) from heater core housing (31).



(12) Remove four screws (36) from heater core housing (31) and brackets (37 and 38).

(13) Remove bracket (37) from heater core housing (31).

(14) Remove heater core (39) and bracket (38) from heater core housing (31).

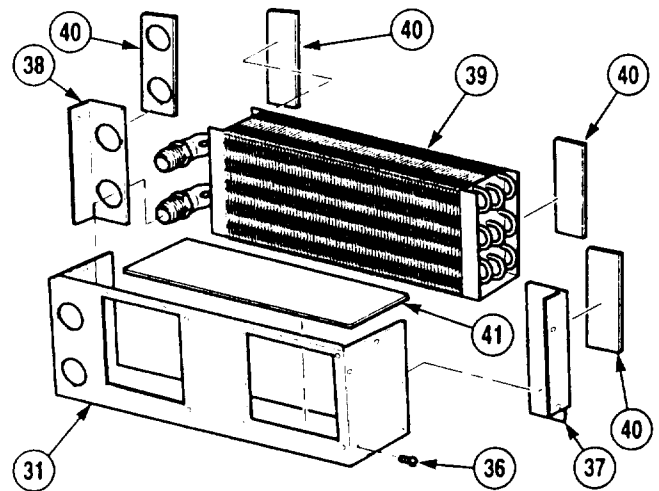
(15) Remove bracket (38) from heater core (39).

NOTE

Perform Steps (17) and (18) only if pads are damaged.

(16) Remove four pads (40) from two brackets (37 and 38) and heater core (39). Discard pads.

(17) Remove pad (41) from heater core housing (31). Discard pad.



16-8. CAB HEATER REPLACEMENT/REPAIR (CONT).**c. Cleaning/Inspection.****WARNING**

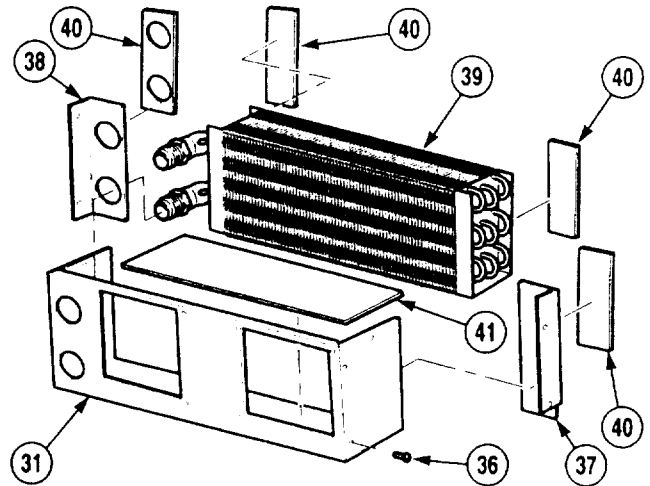
- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

- (1) Clean all metal parts with drycleaning solvent.
- (2) Do not allow drycleaning solvent to come in contact with pads.
- (3) Inspect all pads for damage.
- (4) Inspect all parts for breaks, cracks, burrs, and sharp edges.
- (5) Replace all damaged parts.

d. Assembly.**NOTE**

If pads were removed, perform Steps (1) through (3). Otherwise, go to Step (4).

- (1) Apply adhesive to five pads (40 and 41).
- (2) Install four pads (40) on two brackets (37 and 38) and on heater core (39).
- (3) Install pad (41) on heater core housing (31).
- (4) Position bracket (38) on heater core (39).
- (5) Position heater core (39) and bracket (38) in heater core housing (31).
- (6) Position bracket (37) in heater core housing (31).
- (7) Install brackets (37 and 38) in heater core housing (31) with four screws (36).



(8) Install cover (35) on heater core housing (31) with ten screws (34).

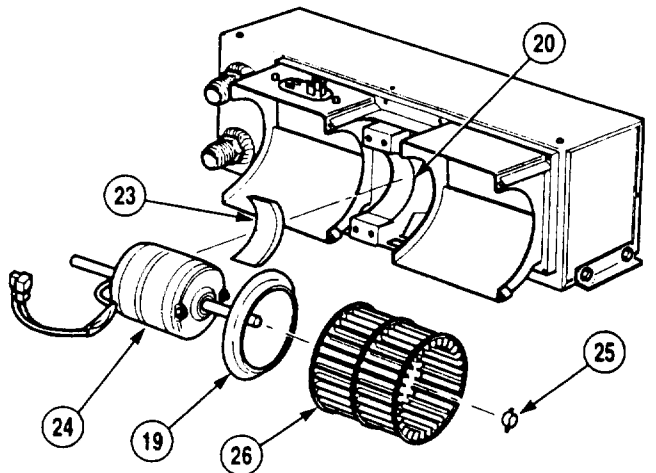
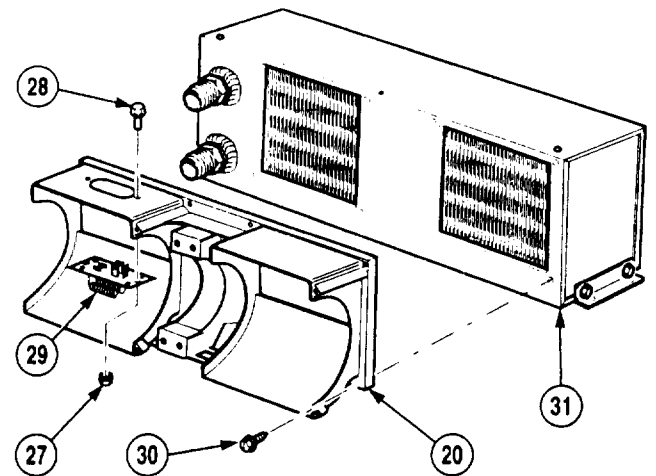
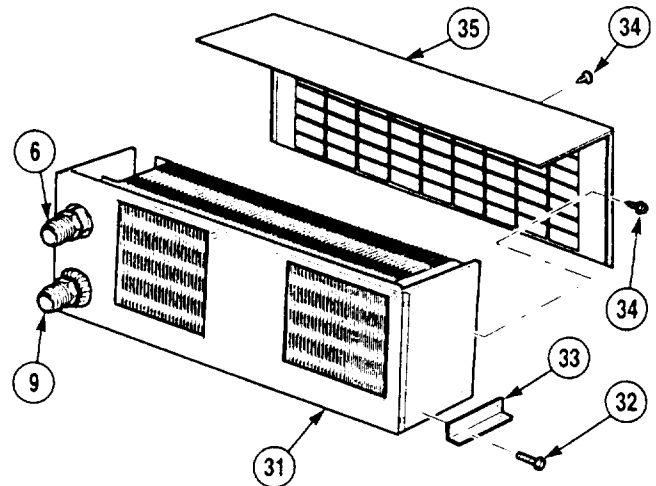
(9) Install two brackets (33) on heater core housing (31) with four screws (32).

(10) Install fan housing (20) on heater core housing (31) with eight screws (30).

(11) Install diode plate assembly (29) on fan housing (20) with two screws (28) and nuts (27).

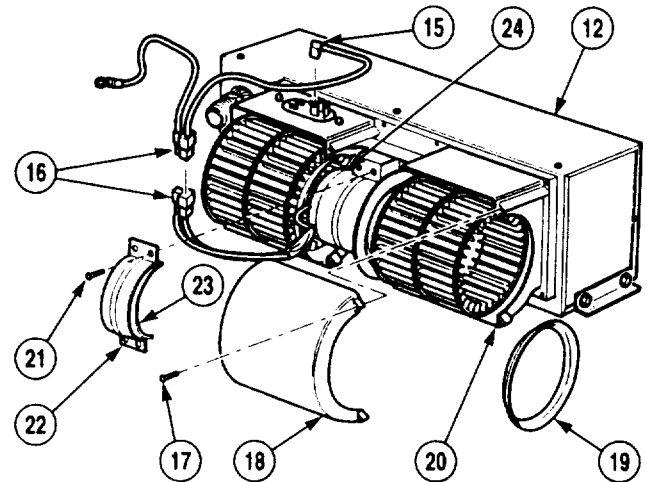
(12) Install two inner air rams (19) and fans (26) on fan motor assembly (24) with two retaining clips (25).

(13) Position rubber liner (23) on fan housing (20).



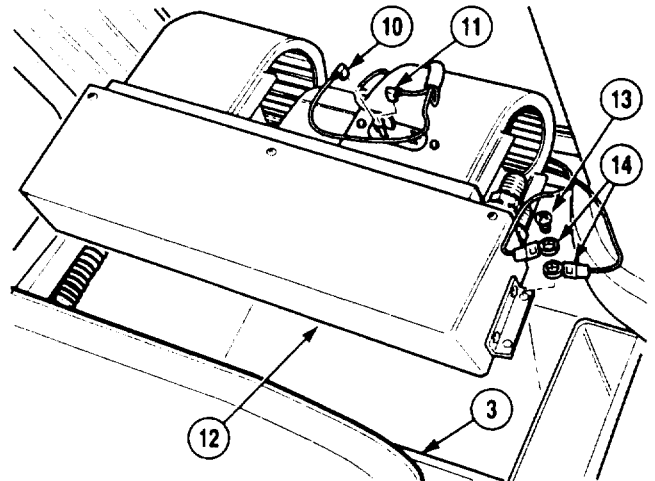
16-8. CAB HEATER REPLACEMENT/REPAIR (CONT).

- (14) Install fan motor assembly (24) on fan housing (20) with clamp (22), rubber liner (23), and four screws (21).
- (15) Install two outer air rams (19) and fan covers (18) on fan housing (20) with eight screws (17).
- (16) Connect connector (16).
- (17) Connect wire (15) on heater assembly (12).

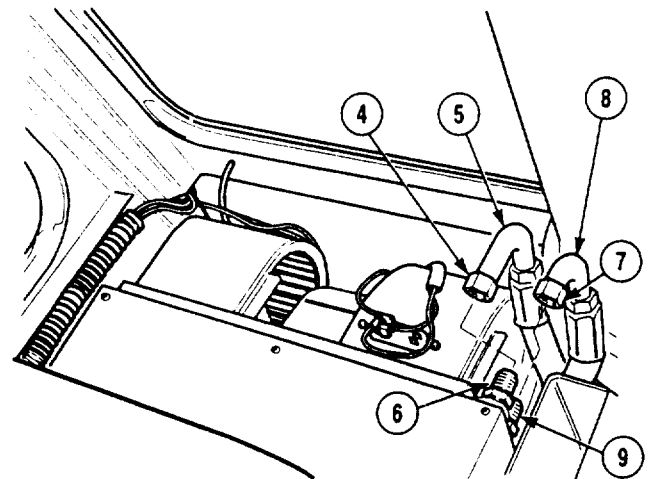


e. Installation.

- (1) Install heater assembly (12) and two wires (14) in heater housing (3) with three screws (13).
- (2) Connect two wires (10 and 11) to heater assembly (12).



- (3) Connect oil line (8) to heater oil inlet (9) and tighten fitting (7).
- (4) Connect oil line (5) to heater oil outlet (6) and tighten fitting (4).



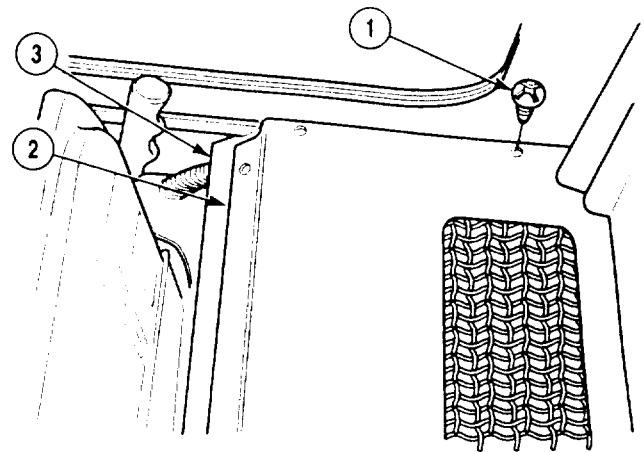
- (5) Install cover (2) on heater housing (3) with seven screws (1).

NOTE

Follow-on Maintenance:

- Close cab door (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK



16-28

16-10. HEATER TEMPERATURE CONTROL REPLACEMENT.

This task covers:

- | | | |
|------------|------------------------|-----------------|
| a. Removal | b. Cleaning/Inspection | c. Installation |
|------------|------------------------|-----------------|

INITIAL SETUP

Tools and Special Tools

Tool Kit, General Mechanic's: Automotive
(Item 1, Appendix B)
Wrench, Torque (0 to 175 lb-ft [0-237 N-m])
(Item 2, Appendix B)

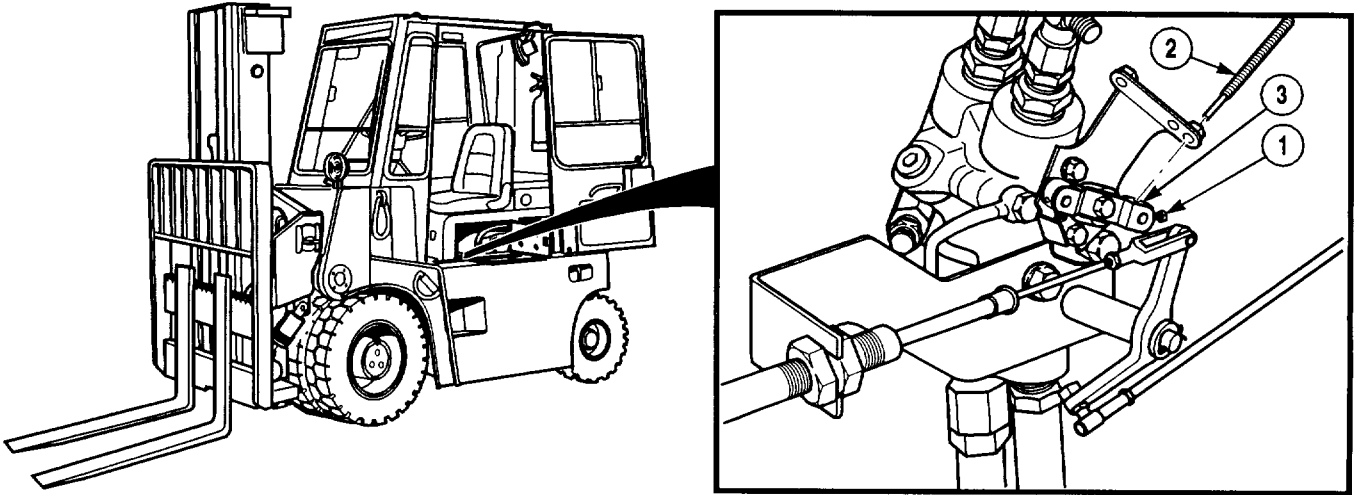
Materials /Parts

Solvent, Drycleaning (Item 20, Appendix C)
Clip, Retaining
Washer, Lock

Equipment Condition

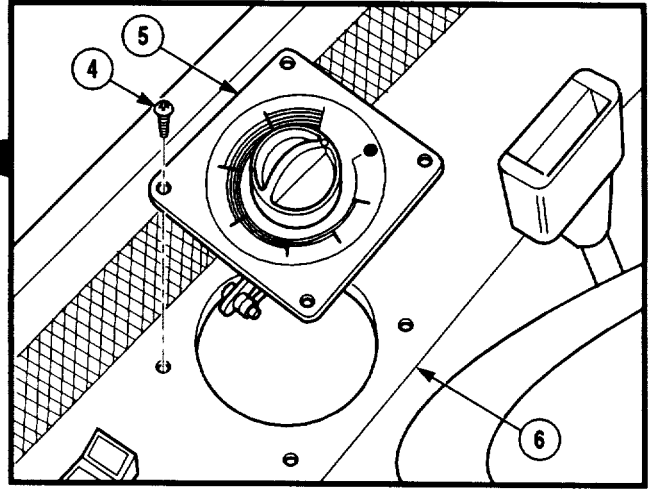
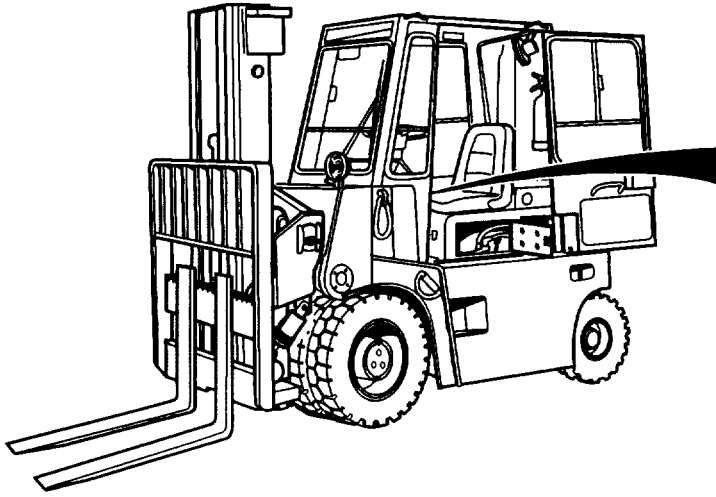
Engine OFF (TM 10-3930-669-10)
Parking brake applied (TM 10-3930-669-10)
Wheels chocked (TM 10-3930-669-10)
Heater temperature control adjusted to
lowest level (TM 10-3930-669-10)
Engine access cover open
(TM 10-3930-669-10)

a. Removal.

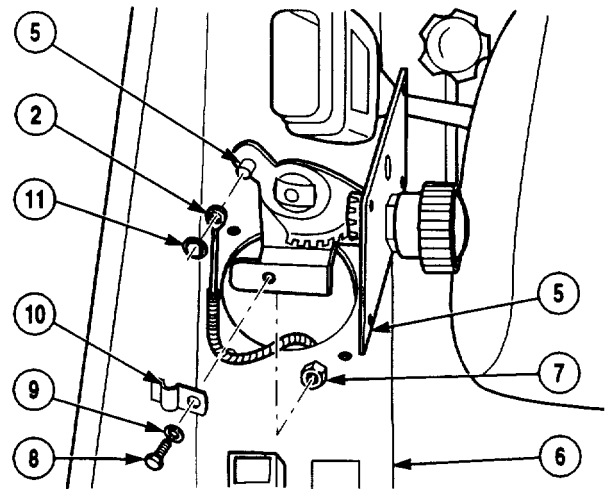


- (1) Loosen screw (1) and remove cable (2) from clamp (3).

16-10. HEATER TEMPERATURE CONTROL REPLACEMENT (CONT).



- (2) Remove four screws (4) and lift heater temperature control (5) from cab (6).
- (3) Remove nut (7), screw (8), lock washer (9), clamp (10), and cable (2) from heater temperature control (5). Discard lock washer.
- (4) Remove retaining clip (11) and cable (2) from pin on heater temperature control (5). Discard retaining clip.
- (5) Remove cable (2) from cab (6).



b. Cleaning/Inspection.

WARNING

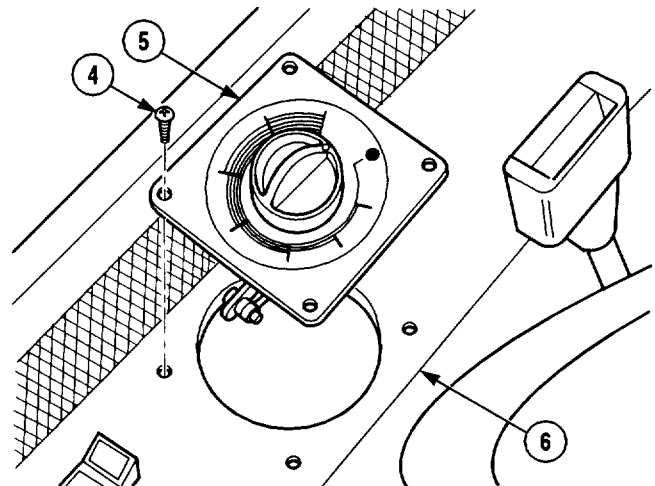
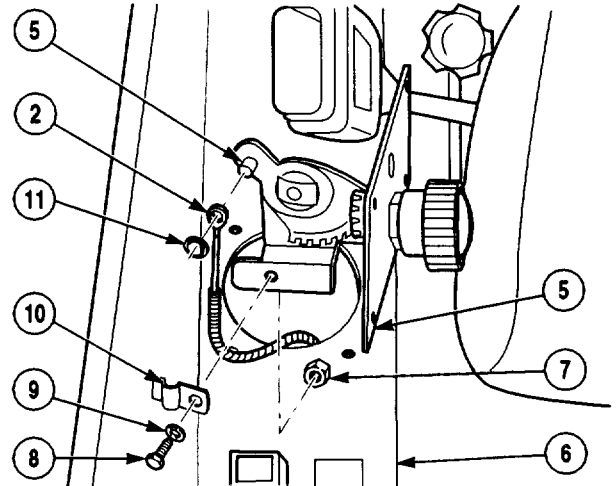
- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

- (1) Clean all metal parts with drycleaning solvent.
- (2) Inspect all parts for breaks, cracks, burrs, and sharp edges.
- (3) Inspect all bearings for wear, scoring, and cracks.
- (4) Replace all damaged parts.

c. Installation.

- (1) Position cable (2) in cab (6).
- (2) Install cable (2) on pin of heater temperature control (5) with retaining clip (11).
- (3) Adjust heater temperature control (5) to its left position.
- (4) Install cable (2) on heater temperature control (5) with clamp (10), lock washer (9), screw (8), and nut (7).

- (5) Install heater temperature control (5) on cab (6) with four screws (4).



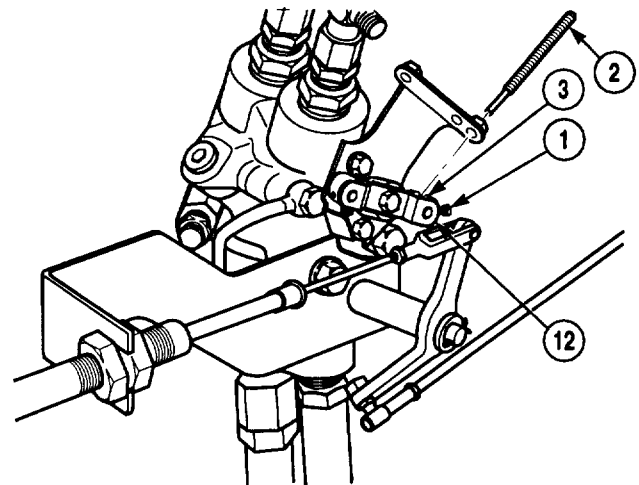
- (6) Turn heater temperature control valve arm (12) as far as it will go towards the right and down.
- (7) Install cable (2) in clamp (3). Tighten screw (1).

NOTE

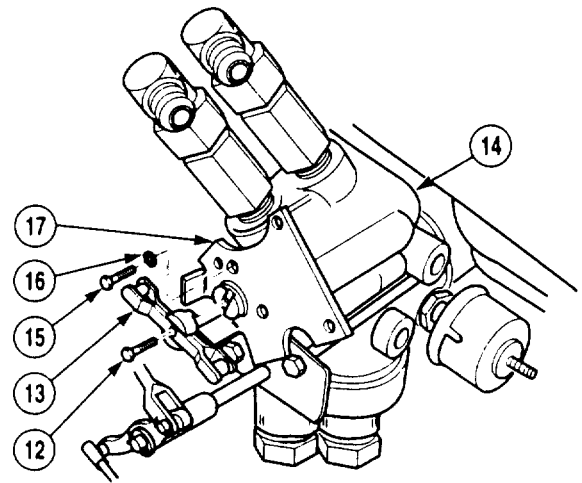
Follow-on Maintenance:

- Close engine access cover (TM 10-3930-669-10).
- Remove wheel chocks (TM 10-3930-669-10).

END OF TASK



- (3) Remove screw (12) and lever assembly (13) from heater valve (14).
- (4) Remove two screws (15), washers (16), and bracket (17) from heater valve (14).



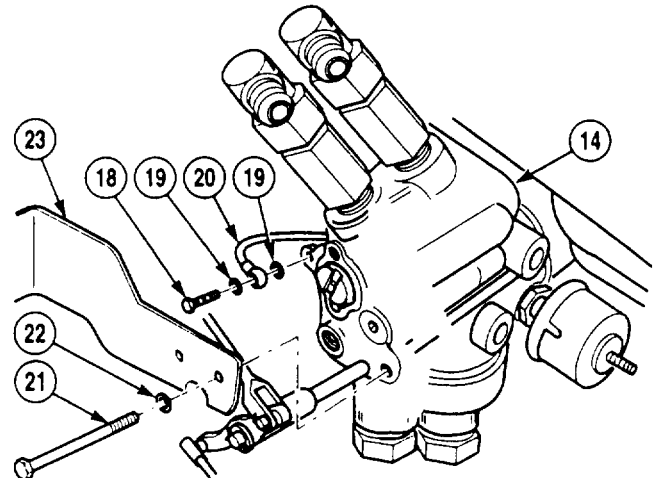
WARNING

Fuel and oil are slippery and can cause falls. To avoid injury, wipe up spilled fuel or oil with rags.

NOTE

- Tag and mark all wires and hoses prior to removal.
- Inspect all hoses, lines, and fittings for cracks, bends, nicks, dents, stripped threads, and cuts. Replace all damaged parts.

- (5) Remove hollow screw (18), two seals (19), and fitting (20) from heater valve (14). Discard seals.
- (6) Remove two screws (21), washers (22), and throttle cable bracket (23) from heater valve (14).



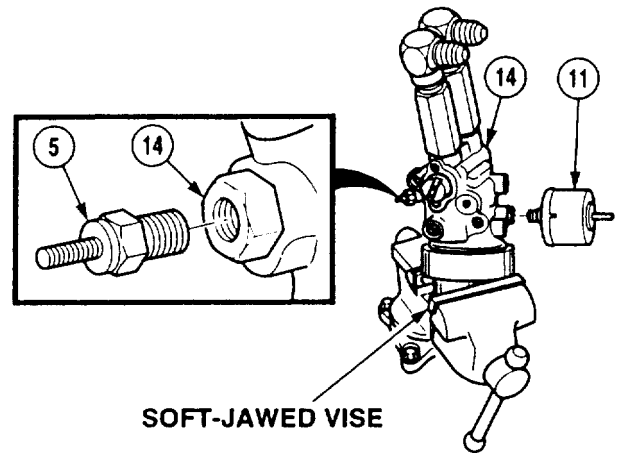
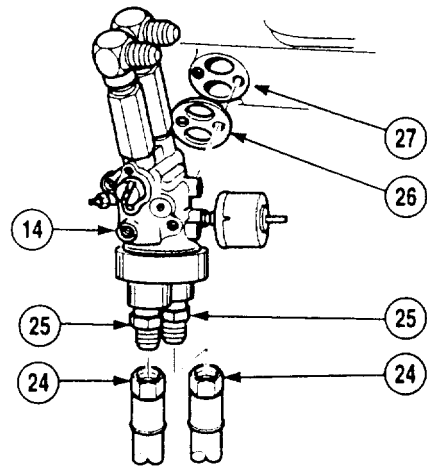
16-11. HEATER VALVE REPLACEMENT (CONT).

WARNING

Fuel and oil are slippery and can cause falls. To avoid injury, wipe up spilled fuel or oil with rags.

NOTE

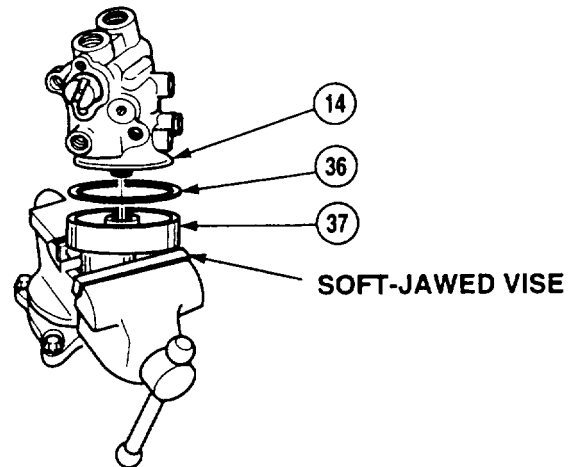
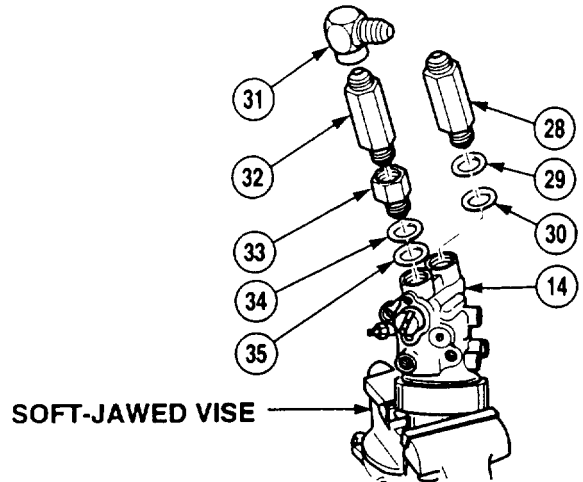
- Tag and mark all wires and hoses prior to removal.
 - Inspect all hoses, lines, and fittings for cracks, bends, nicks, dents, stripped threads, and cuts. Replace all damaged parts.
- (7) Moving heater valve (14) to improve access, remove two engine remote oil filter hoses (24) from two fittings (25).
- (8) Remove heater valve (14) and gasket (26) from engine (27). Discard gasket.
- (9) Place heater valve (14) in soft-jawed vise.
- (10) Remove engine oil temperature sensor (5) from heater valve (14).
- (11) Remove oil pressure sending unit (11) from heater valve (14).



NOTE

Note position of fittings prior to removal.

- (12) Remove fitting (28), seal (29), and washer (30) from heater valve (14). Discard seal.
- (13) Remove fitting (31) from fitting (32).
- (14) Remove fitting (32) from fitting (33).
- (15) Remove fitting (33), seal (34), and washer (35) from heater valve (14). Discard seal.
- (16) Remove heater valve (14) and gasket (36) from oil filter hose adapter (37). Discard gasket.
- (17) Remove oil hose adapter (37) from soft-jawed vise.



b. Cleaning/Inspection.

WARNING

- Drycleaning solvent (P-D-680) is TOXIC and flammable. Wear protective goggles and gloves; use only in a well-ventilated area; avoid contact with skin, eyes, and clothes; and do not breathe vapors. Keep away from heat or flame. Never smoke when using solvent; the flashpoint for type I drycleaning solvent is 100°F (38°C) and for type II is 138°F (50°C). Failure to do so may result in injury or death to personnel.
- If personnel become dizzy while using cleaning solvent, immediately get fresh air and medical help. If solvent contacts skin or clothes, flush with cold water. If solvent contacts eyes, immediately flush eyes with water and get immediate medical attention.

- (1) Clean all metal parts with drycleaning solvent.
- (2) Inspect all parts for breaks, cracks, burrs, and sharp edges.
- (3) Replace all damaged parts.