TECHNICAL MANUAL

VOLUME 3 OF 3

PART 4 OF 4

MAINTENANCE

ORGANIZATIONAL LEVEL

2½-TON, 6X6, M44A1 AND M44A2 SERIES TRUCKS (MULTIFUEL)

TRUCK, CARGO: N35A1, M35A2, M35A2C, M36A2; TRUCK, TANK, FUEL: M49A1C, M49A2C; TRUCK, TANK, WATER: M50A1, M50A2, M50A3; TRUCK, VAN, SHOP: M109A2, M109A3; TRUCK, REPAIR SHOP: M185A2, M185A3; TRUCK, TRACTOR: M275A1, M275A2; TRUCK, DUMP: M342A2; TRUCK, MAINTENANCE, PIPELINE CONSTRUCTION: M756A2; TRUCK, MAINTENANCE, EARTH BORING AND POLESETTING: M764

Chapter 19
Winch and Hoist Assemblies and Power Takeoff Controls and Linkage

Chapter 20
Bumper Guards

Chapter 21
Body Accessory Items

Chapter 22
Nonelectrical Gages

Chapter 23
Material Used in Conjunction with Major Items

Appendix A
References

NOTE:
THE STYLE OF THIS TM IS EXPERIMENTAL. IT IS BEING TRIED BY THE ARMY ONLY ON A LIMITED BASIS

DEPARTMENTS OF THE ARMY AND THE AIR FORCE

MAY 1981

WARNING

EXHAUST GASES CAN BE DEADLY

Exposure to exhaust gases produces symptoms of headache, dizziness, loss of muscular control, apparent drowsiness, and coma. Permanent brain damage or death can result from severe exposure.

Carbon monoxide occurs in the exhaust fumes of fuel burning heaters and internal combustion engines, and becomes dangerously concentrated under conditions of inadequate ventilation. The following precautions must be observed to insure the safety of personnel whenever fuel burning heater(s) or engine of any vehicle is operated for maintenance purposes or tactical use.

Do not operate heater or engine of vehicle in an enclosed area unless it is adequately ventilated.

Do not idle engine for long periods without maintaining adequate ventilation in personnel compartments.

Do not drive any vehicle with inspection plates or cover plates removed unless necessary for maintenance purposes.

Be alert at all times during vehicle operation for exhaust odors and exposure symptoms. If either are present, immediately ventilate personnel compartments. If symptoms persist, remove affected personnel from vehicle and treat as follows: expose to fresh air; keep warm; do not permit physical exercise; if necessary, administer artificial respiration.

If exposed, seek prompt medical attention for possible delayed onset of acute lung congestion. Administer oxygen if available.

The best defense against exhaust gas poisoning is adequate ventilation.

WARNING

Serious or fatal injury to personnel may result if
the following instructions are not complied with.

Always wear protective gloves when handling winch cable. Do not let winch cable slip through hands. Rusty or broken wires can cause serious injury.

Always use hand THROTTLE to control engine speed when operating winch. Avoid sudden changes in speed or high speed. Rough, jerky operation may cause broken shear pins and snapped cables, damage to vehicle or injury to personnel.

Dry cleaning solvent is flammable. Do not use near an open flame. Keep a fire extinguisher nearby when solvent is used. Use only in well-ventilated places. Failure to do this may result in injury to personnel and damage to equipment.

Eye shields must be worn when using grinder. Eye injury can occur if eye shields are not used.

Never work under dump body unless safety braces are in place. Dump body could drop and personnel could be seriously injured.

Do not work on hot heater exhaust tube. Let it cool before removing it. Hot exhaust tube can cause serious burns.

Eye shields must be worn when using compressed air. Eye injury can occur if eye shields are not used.

WARNING - Cont

Smoking, sparks or open flame are not allowed within 50 feet of work area during fuel filter service. Fuel may burn, causing explosion, injury to personnel, and damage to equipment.

Do not work on cooling system components until cool. Personnel can be badly burned by hot components.

*TM 9-2320-209-20-3-4
T.O. 36A12-1B-1092-1-3

TECHNICAL MANUAL
NO. 9-2320-209-20-3-4
TECHNICAL ORDER
NO. 36A12-1B-1092-1-3

DEPARTMENTS OF THE ARMY
AND
THE AIR FORCE
Washington, D.C., 27 May 1981

TECHNICAL MANUAL

VOLUME 3 OF 3

PART 4 OF 4

MAINTENANCE

ORGANIZATIONAL LEVEL

2½-TON 6X6, M44A1 AND M44A2 SERIES TRUCKS

(MULTIFUEL)

Model		NSN without Winch	NSN with Winch
Truck, Cargo	M35A1	2320-00-542-5633	2320-00-542-5634
	M35A2	2320-00-077-1616	2320-00-077-1617
	M35A2C	2320-00-926-0873	2320-00-926-0875
	M36A2	2320-00-077-1618	2320-00-077-1619
Truck, Tank, Fuel	M49A1C	2320-00-440-3349	2320-00-440-3346
	M49A2C	2320-00-077-1631	2320-00-077-1632
Truck, Tank, Water	M50A1	2320-00-440-8307	2320-00-440-8305
	M50A2	2320-00-077-1633	2320-00-077-1634
	M50A3	2320-00-937-4036	2320-00-937-5264
Truck, Van, Shop	M109A2	2320-00-440-8313	2320-00-440-8308
	M109A3	2320-00-077-1636	2320-00-077-1637
Truck, Repair Shop	M185A2	4940-00-987-8799	
	M185A3	4940-00-077-1638	4940-00-077-1639
Truck, Tractor	M275A1	2320-00-446-2479	
	M275A2	2320-00-077-1640	2320-00-077-1641
Truck, Dump	M342A2	2320-00-077-1643	2320-00-077-1644
Truck, Maintenance, Pipeline Construction	M756A2		2320-00-904-3277
Truck, Maintenance, Earth Boring and Polesetting	M764		2320-00-937-5980

*This maual, togethr with TM 9-2320-209-20-1, 27 May 1981; TM 9-2320-209-20-2-1, 27 May 1981; TM 9-2320-209-20-2-2, 27 May 1981; TM 9-2320-209-20-3-1, 27 May 1981; TM 9-2320-209-20-3-2, 27 May 1981; and TM 9-2320-209-20-3-3, 27 May 1981 supersedes TM 9-2320-209-20-1, 31 August 1978.

REPORTING OF ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know of a way to improve the procedure, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publication and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to: Commander, U.S. Army Tank Automotive Materiel Readiness Command, ATTN: DRSTA-MB , Warren, Michigan 48090. A reply will be furnished to you.

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CHAPTER 19

WINCH AND HOIST ASSEMBLIES AND POWER TAKEOFF CONTROLS AND LINKAGE GROUP MAINTENANCE

Section I. SCOPE

19-1. EQUIPMENT ITEMS COVERED . This chapter gives equipment maintenance procedures for the winch and hoist assemblies and the power takeoff controls and linkage for which there are authorized corrective maintenance tasks at the organizational maintenance level.

19-2. EQUIPMENT ITEMS NOT COVERED. All equipment items for which corrective maintenance is authorized at the organizational maintenance level are covered in this chapter.

Section II. WINCH AND HOIST ASSEMBLIES

19-3. FRONT WINCH BRAKE TEST AND ADJUSTMENTS.

TOOLS: 9/16-inch wrench
Offset screwdriver
Leather gloves

SUPPLIES: None

PERSONNEL: Three

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Preliminary Procedures. Disengage winch clutch. Refer to TM 9-2320-209-10.

b. Drag Brake Test and Adjustment.

(1) Test.

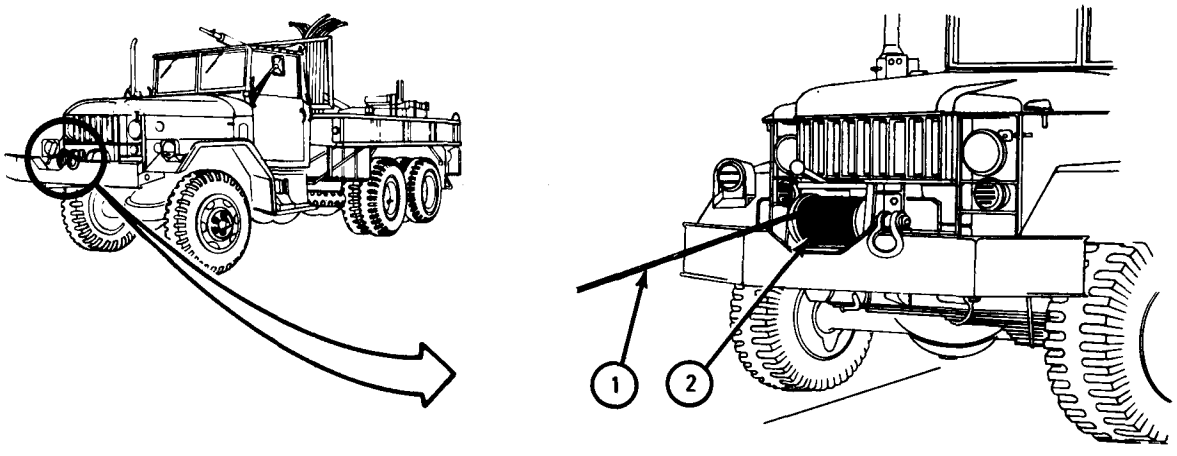
FRAME 1

WARNING

Always wear protective gloves when handling winch cable. Do not let winch cable slip through hands. Rusty or broken wires can cause serious injury.

1. Grab winch cable (1) and pull out about six feet of cable, then let go of cable quickly. If drum (2) keeps turning, do drag brake adjustment. If drum (2) stops turning when cable (1) is let go, adjustment is correct.

END OF TASK



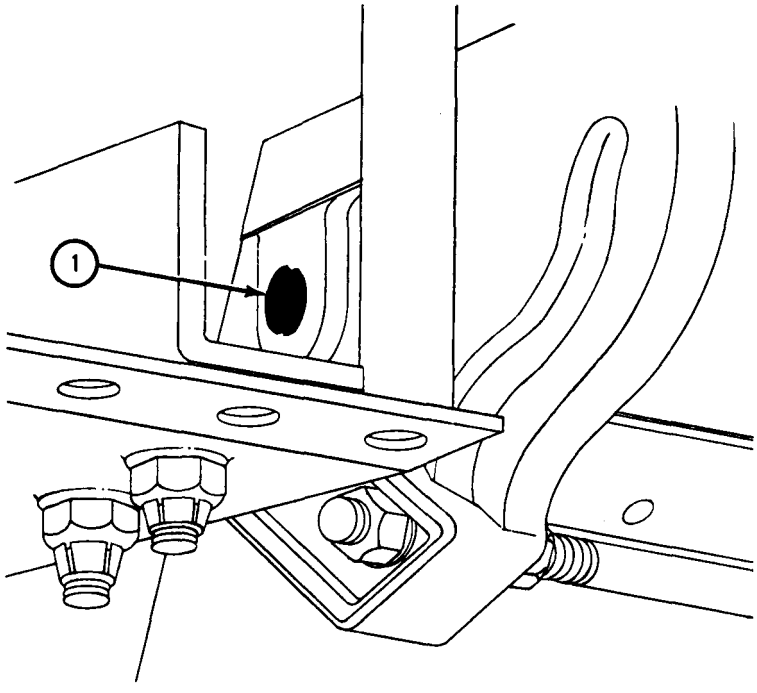
TA 080939

(2) Adjustment.

FRAME 1

1. Using offset screwdriver, screw in adjusting screw (1) 1/2 turn.
2. Do test again.

END OF TASK



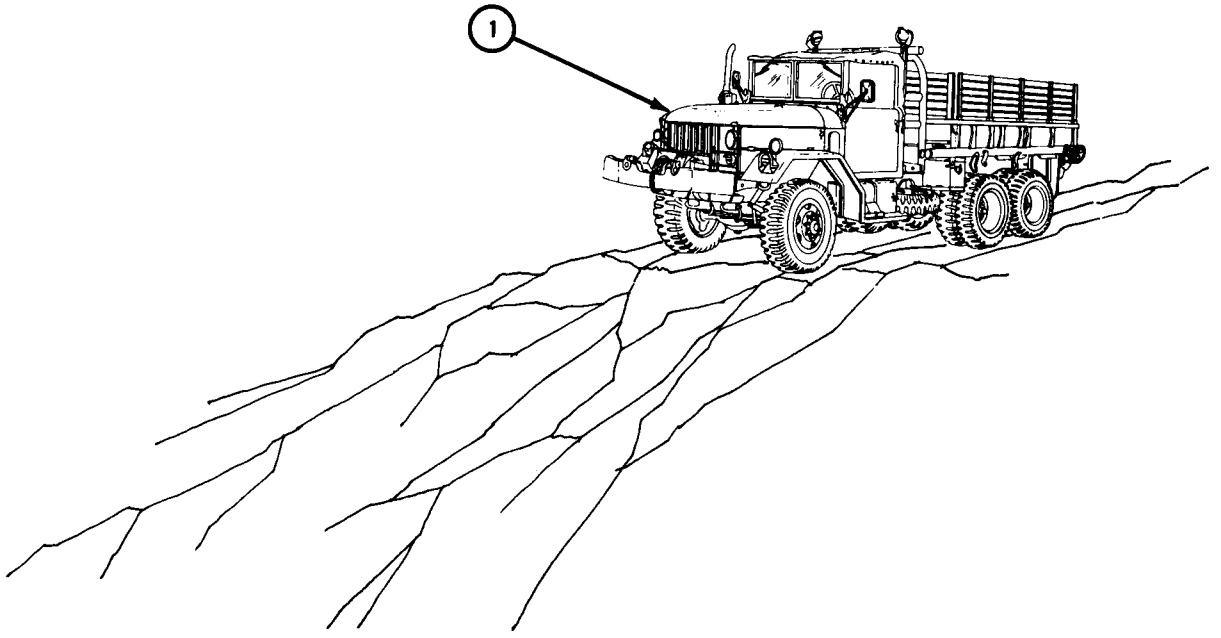
TA 080940

c. Automatic Brake Test and Adjustment.

FRAME 1

Soldier A 1. Park truck (1) with winch to be tested at top of steep grade as shown. Refer to TM 9-2320-209-10. Sit in cab throughout this task with engine running.

GO TO FRAME 2

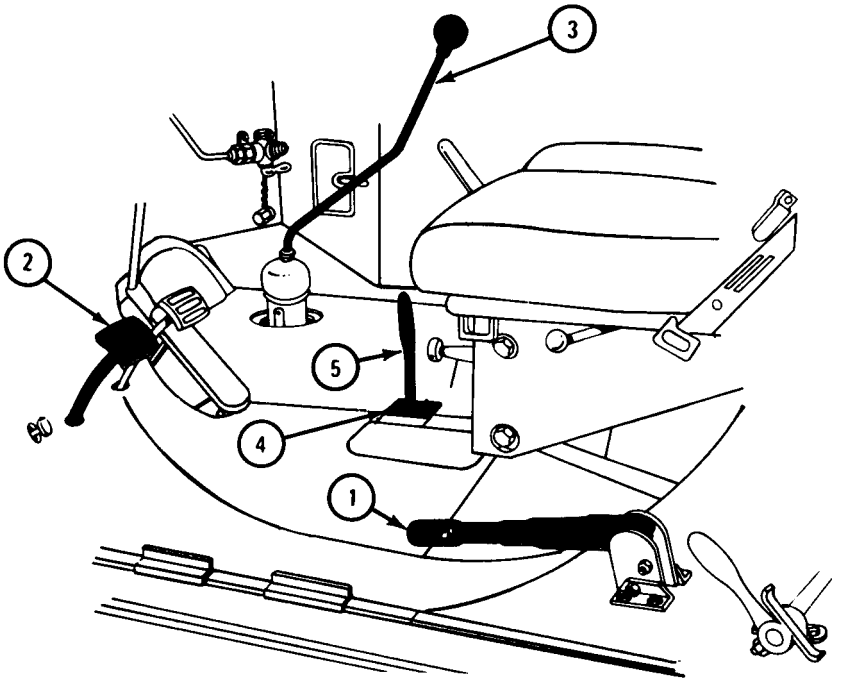


TA 080941

FRAME 2

1. Pull handbrake (1) up to brake on position.
2. Press clutch pedal (2) all the way down.
3. Place FRONT TRANSMISSION gearshift lever (3) in N (neutral) position.
4. Let clutch pedal (2) up.
5. Turn front winch control lever hinge lock (4) to unlock position.
6. Keep front winch control lever (5) in upper N (neutral) position.

GO TO FRAME 3

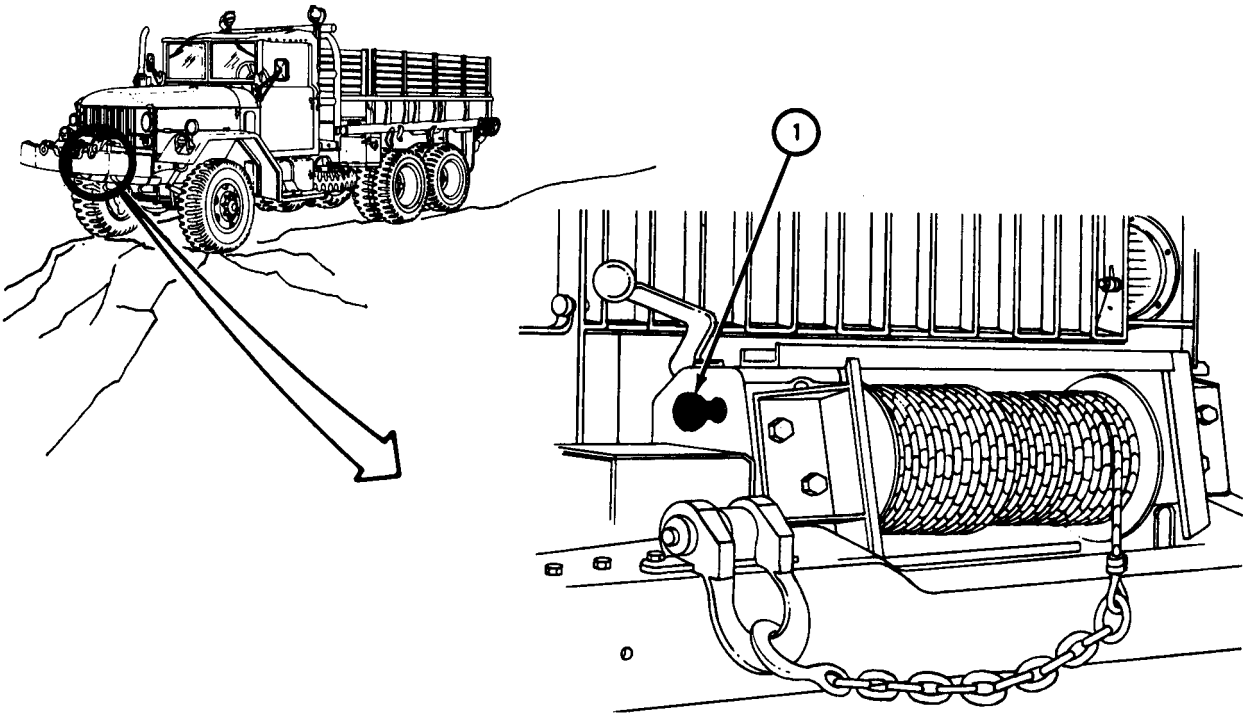


TA 080942

FRAME 3

Soldier B 1. Pullout front winch drum lock knob (1). Turn it 1/4-turn and let it go into unlocked position.

GO TO FRAME 4



TA 080943

FRAME 4

Soldier C
1. Park second truck (1) at bottom of steep grade in a direct line with winch (2) on first truck (3) as shown. Refer to TM 9-2320-209-10.
2. Sit in cab during this task with engine running.

WARNING

Always wear protective gloves when handling winch cable. Do not let winch cable slip through hands. Rusty or broken wires can cause serious injury.

CAUTION

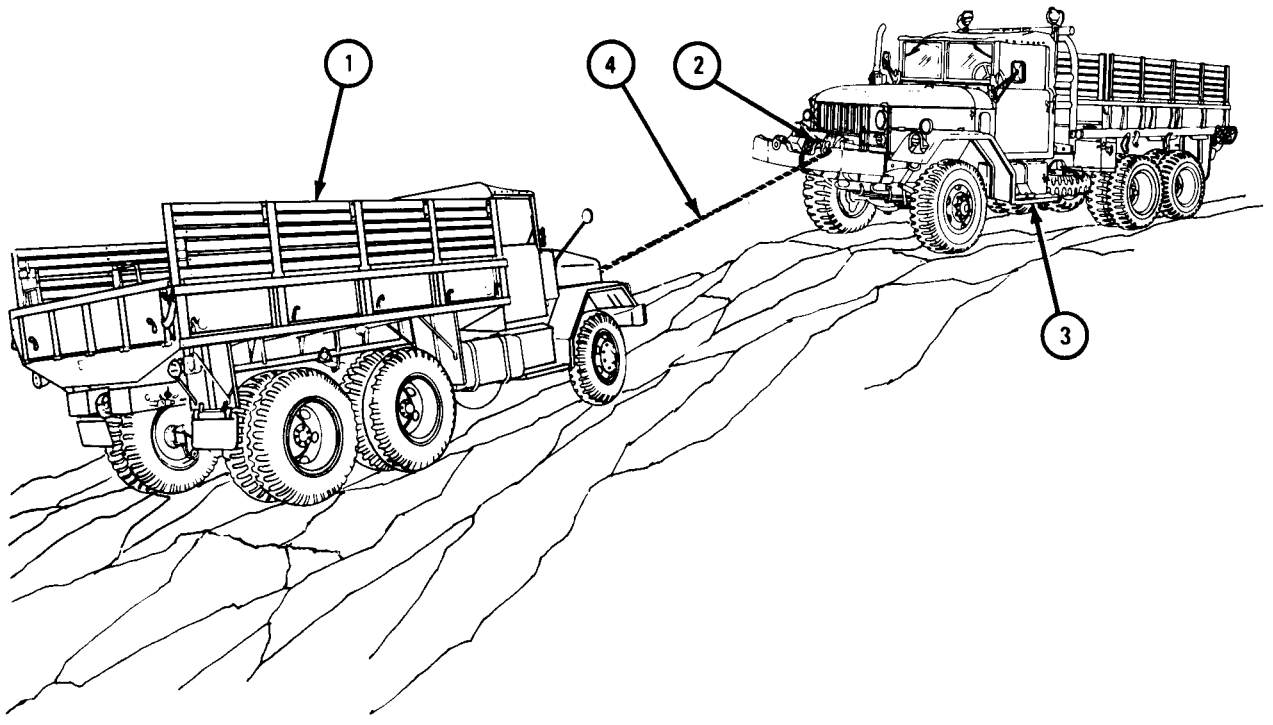
Do not operate winch with less than four turns of cable on drum. End of cable may pull free of drum.

NOTE

Do not kink winch cable.

Soldier B
3. Pull winch cable (4) from winch (2) to reach second truck (1).
4. Hook winch cable (4) on second truck (1).

GO TO FRAME 5

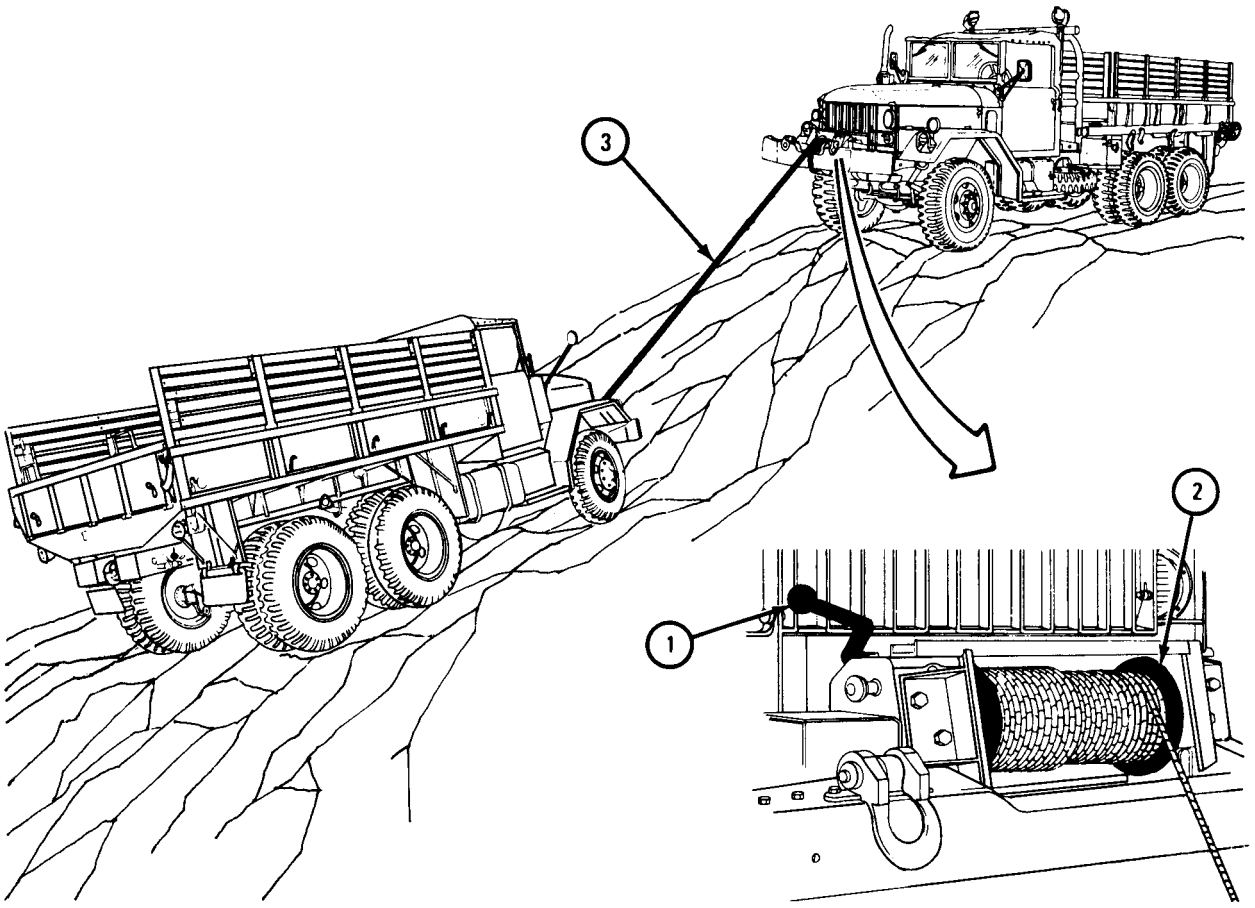


TA 080944

FRAME 5

Soldier B 1. Move front winch drum clutch lever (1) on upper truck as far as it will go from the drum (2) (engage position). Stand clear of trucks and cable (3).

GO TO FRAME 6



TA 080945

FRAME 6

Soldier C 1. Sit in cab of lower truck, ready to step on brake pedal (1) to stop truck if it starts to roll down grade. Tell soldier A when ready.

Soldier A 2. Sitting in cab of upper truck, with engine running, leave FRONT TRANSMISSION gearshift lever (2) in N (neutral) position.

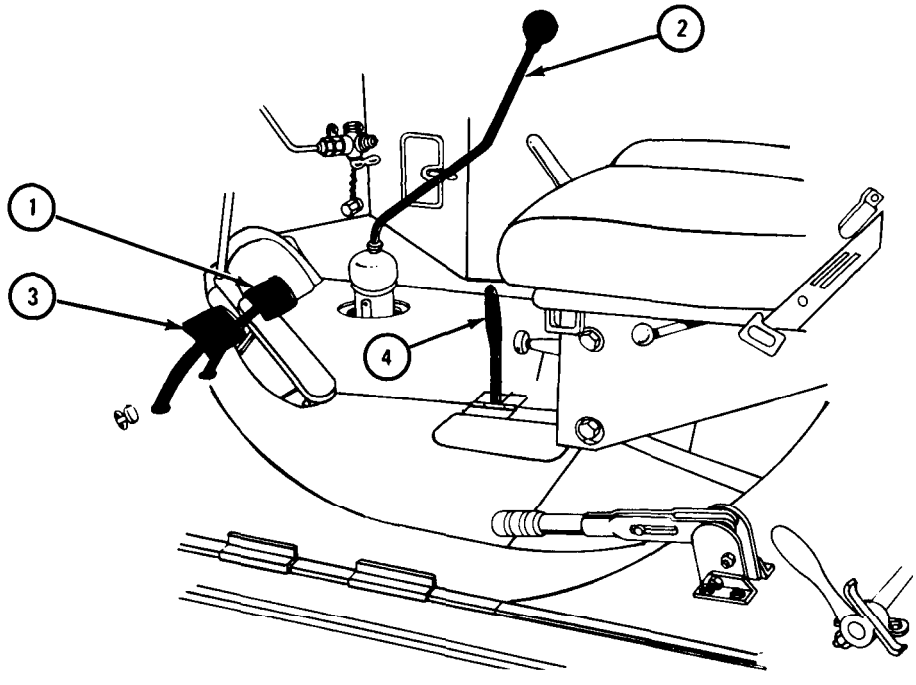
WARNING

Always use hand THROTTLE to control engine speed when operating winch. Avoid sudden changes in speed or high speed. Rough, jerky operation may cause broken shear pins and snapped cables, damage to vehicle or injury to personnel.

3. Press down on clutch pedal (3).

4. Move front WINCH CONTROL lever (4) to L (low) position.

GO TO FRAME 7



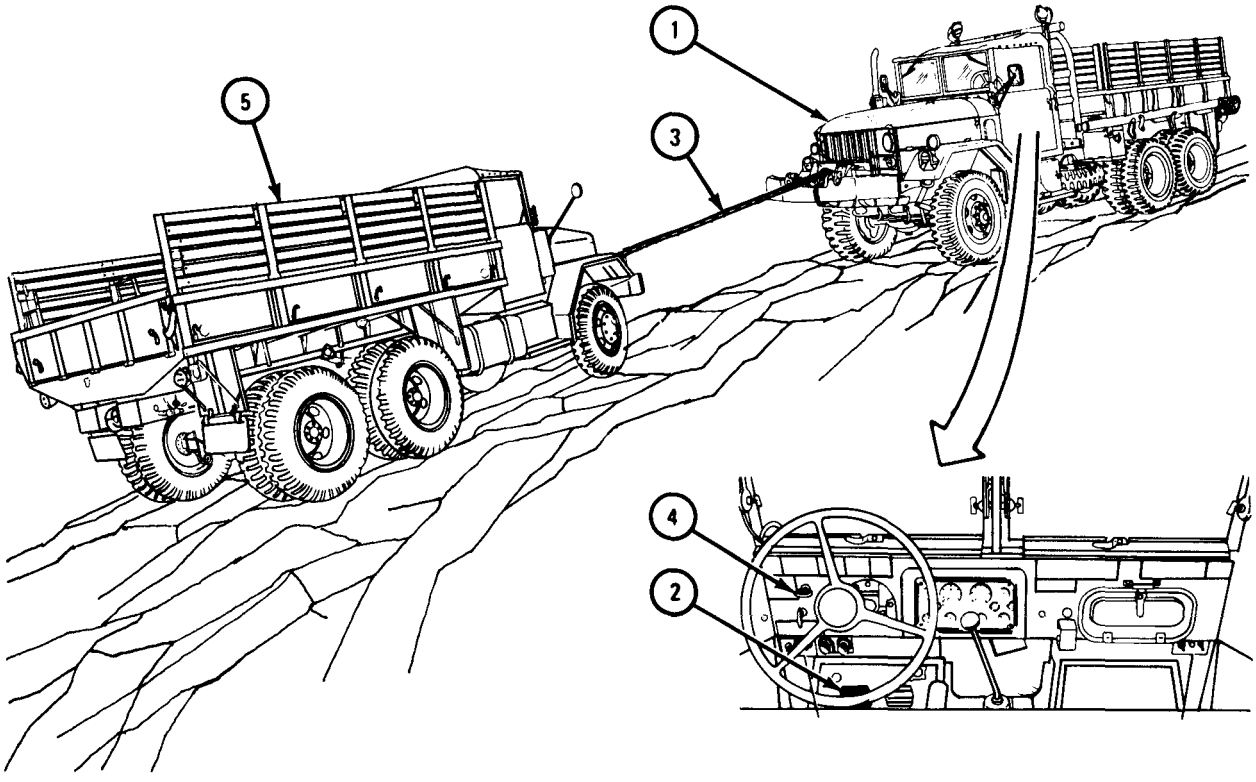
TA 080946

FRAME 7

Soldier A

1. Sitting in cab of upper truck (1), let clutch pedal (2) come up slowly.
2. Wind in winch cable (3) to take up slack.
3. Use hand THROTTLE (4) to control speed and continue smooth operation. Pull lower truck (5) three-quarters of the way up grade.

GO TO FRAME 8



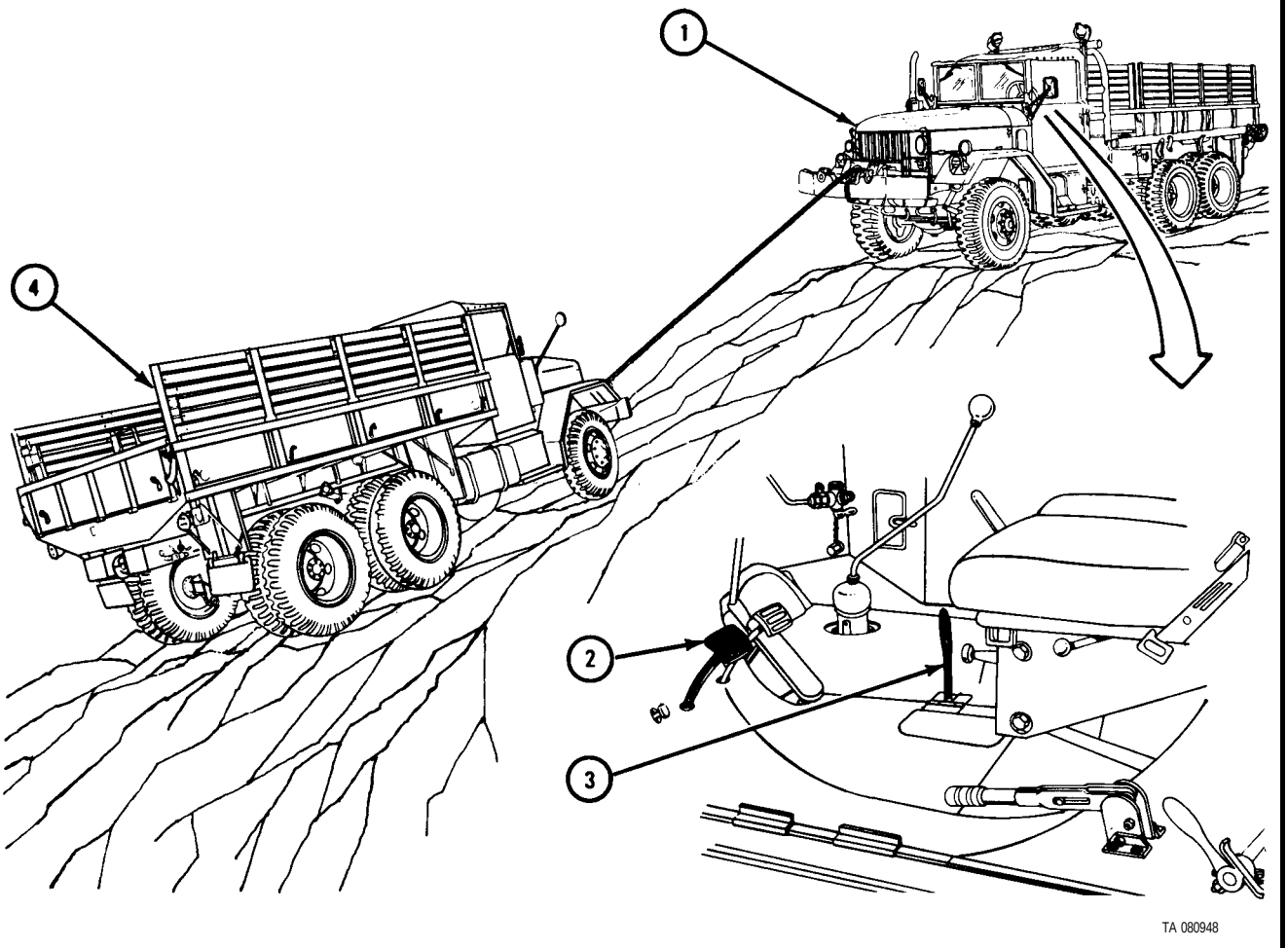
TA 080947

FRAME 8

Soldier A

1. Sitting in cab of upper truck (1), press clutch pedal (2) all the way down.
2. Place front WINCH CONTROL lever (3) in upper N (neutral) position.
3. Let up on clutch pedal (2) slowly.

IF TRUCK (4) ROLLS DOWN GRADE, GO TO FRAME 9.
IF TRUCK (4) DOES NOT ROLL DOWN GRADE, GO TO FRAME 10



FRAME 9

Soldier C 1. Push down brake pedal (1). Pull up handbrake (2) to on position and let go of brake pedal. Tell soldier B when ready.

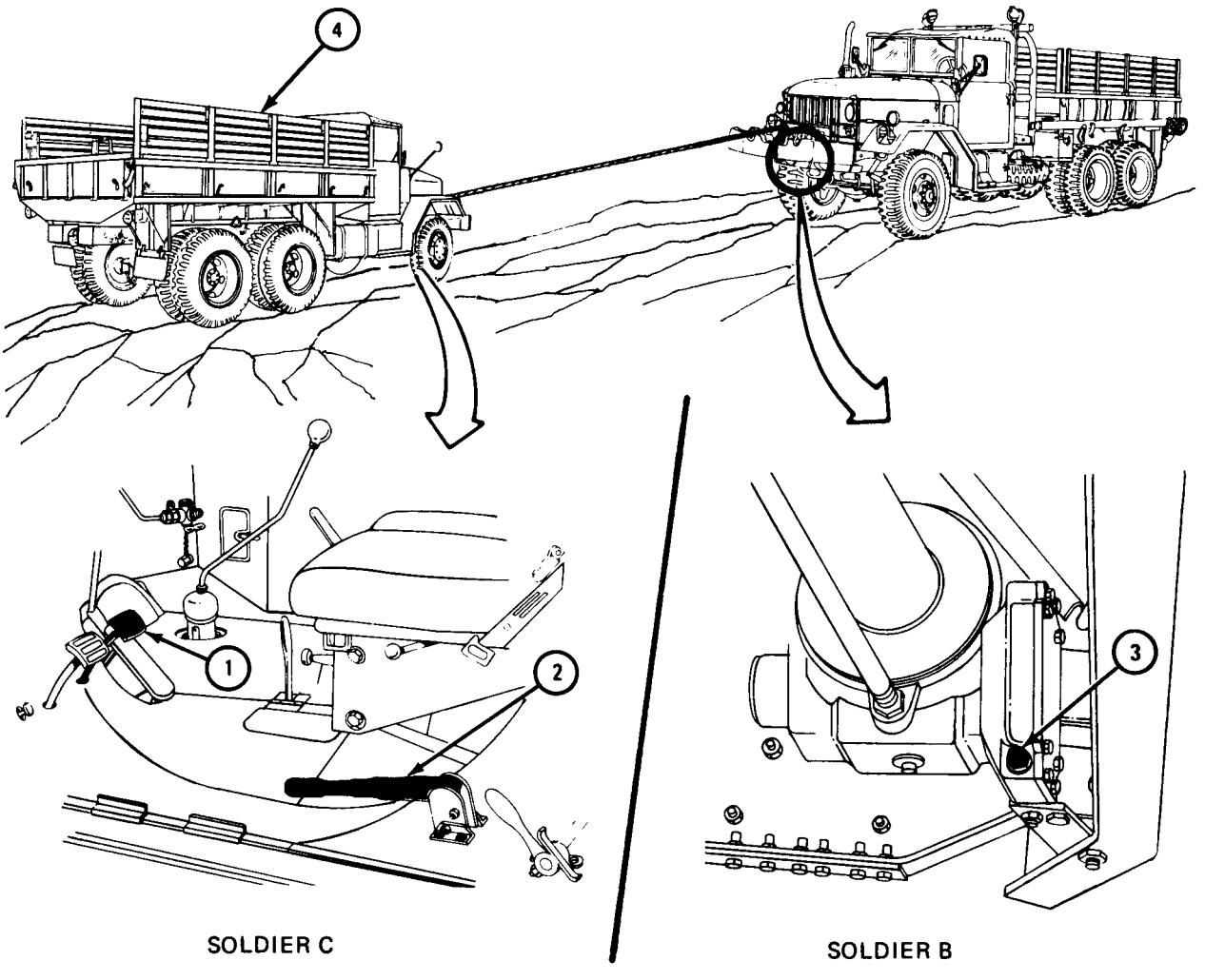
Soldier B 2. Using 9/16-inch wrench, turn screw (3) 1/2 turn to right.

NOTE

When correctly adjusted, the brake will become warm, but should not be too hot to hold brake cover with hand.

Soldier C 3. Push handbrake (2) down to off position.

IF TRUCK (4) ROLLS DOWN GRADE, DO FRAME 9 AGAIN.
IF TRUCK (4) DOES NOT ROLL DOWN GRADE, GO TO FRAME 10



FRAME 10

Soldier C 1. Pull up handbrake (1) to on position. Tell soldier A when ready.

Soldier A 2. Press clutch pedal (2) all the way down.

3. Place front WINCH CONTROL lever (3) in R (reverse) position.

4. Let up clutch pedal (2) slowly until there is enough slack in cable (4) to unlock it from truck (5).

5. Press clutch pedal (2) all the way down.

6. Place front WINCH CONTROL lever (3) in N (neutral) position.

7. Let up clutch pedal (2).

Soldier B 8. Unhook winch cable (4) from truck (5).

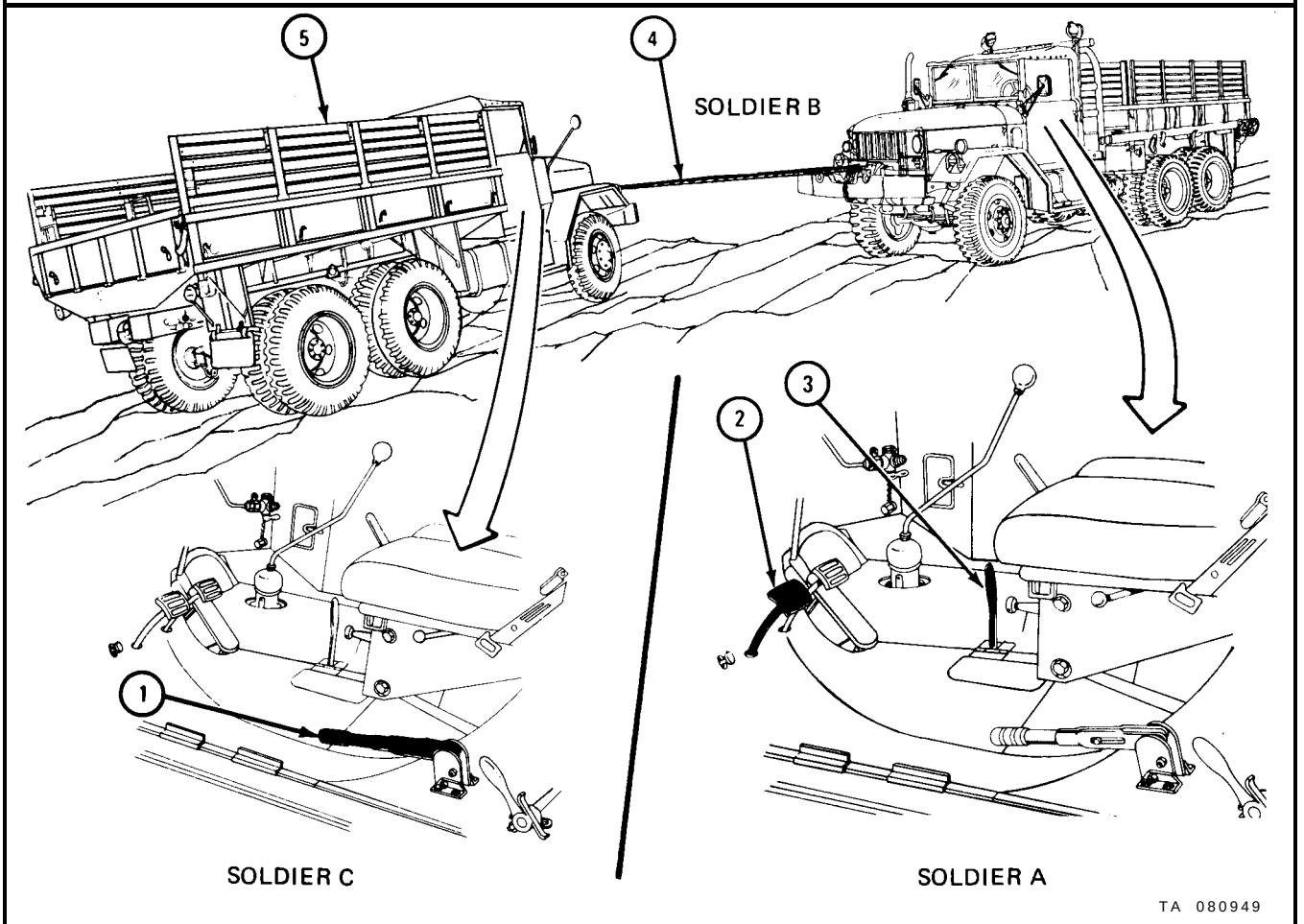
Soldier A 9. Rewind winch cable (4). Refer to TM 9-2320-209-10.

NOTE

Follow-on Maintenance Action Required:

Engage winch clutch. Refer to TM 9-2320-209-10.

END OF TASK



19-4. FRONT WINCH REMOVAL AND REPLACEMENT.

TOOLS: 3/4-inch wrench
Chain sling
Hoist

SUPPLIES: Wood blocks

PERSONNEL: Two

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Preliminary Procedures.

(1) Remove front winch propeller shaft. Refer to para 19-5.

(2) Remove front winch cable. Refer to para 19-10.

b. Removal.

FRAME 1

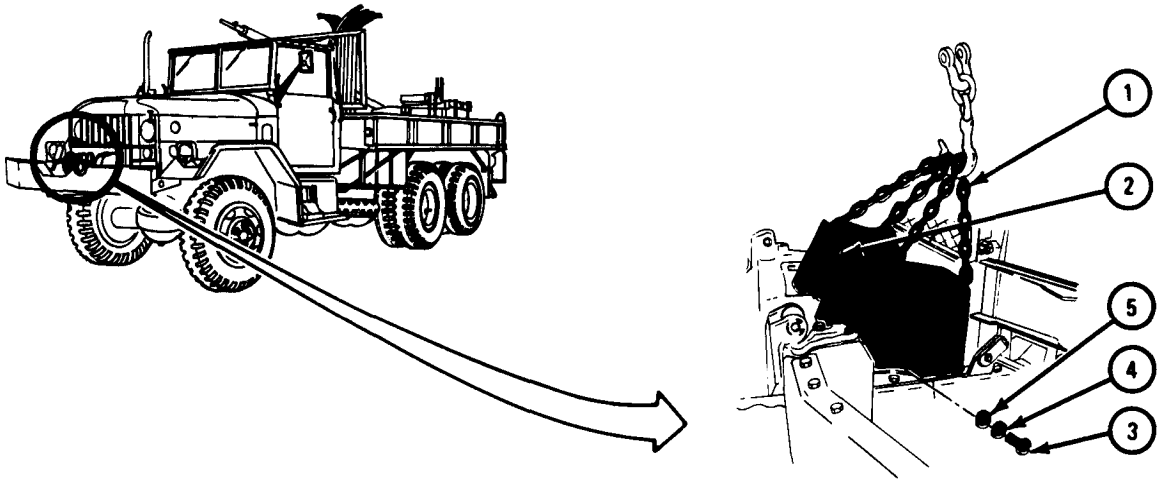
1. Put chain sling (1) around drum of winch (2) and join chain sling to hoist.
2. Raise hoist enough to hold weight of winch (2).
3. Using 3/4-inch wrench, unscrew and take out six screws (3), lockwashers (4), and flat washers (5).
4. Do step 3 again on other side of winch (2).

Soldier A 5. Guide winch (2) while soldier B lifts it off truck.

Soldier B 6. Using hoist, lift winch (2) off truck and set it down on wood blocks.

Soldier A 7. Unhook chain sling (1) from hoist and take it off drum of winch (2).

END OF TASK



TA 080866

c. Replacement.

FRAME 1

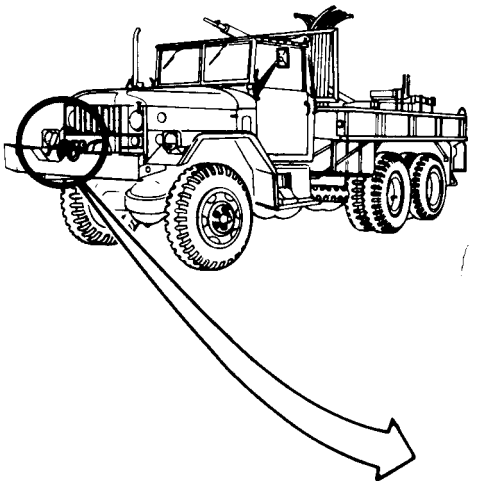
	1.	Put chain sling (1) around drum of winch (2) and join chain sling to hoist.
Soldier A	2.	Guide winch (2) when soldier B lifts it off of ground onto truck.
Soldier B	3.	Using hoist, lift winch (2) off of ground into place on truck.
Soldier A	4.	Tell soldier B when mounting holes of winch (2) are alined.
	5.	Using 3/4-inch wrench, screw in and tighten six screws (3) with lockwashers (4) and flat washers (5).
	6.	Do step 5 again on other side of winch (2).
	7.	Unhook chain sling (1) from hoist and take it off drum on winch (2).

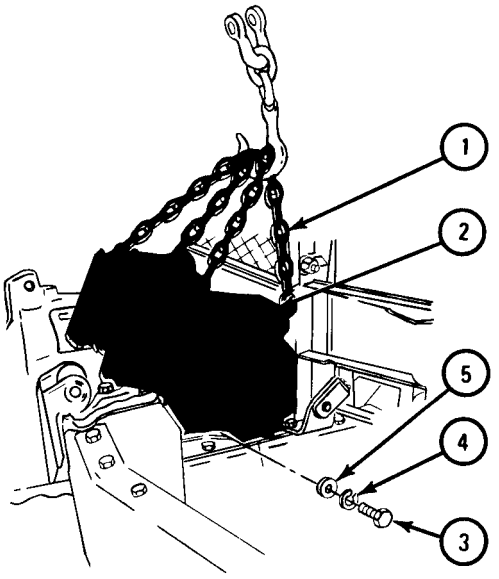
NOTE

Follow-on Maintenance Action Required:

1. Put front winch propeller shaft back in place. Refer to para 19-5.
2. Put cable back on front winch. Refer to para 19-10.

END OF TASK





TA 080867

19-5. FRONT WINCH PROPELLER SHAFT REMOVAL AND REPLACEMENT.

TOOLS: Pliers
8-ounce ballpeen hammer
1/4-inch punch
9/16-inch wrench (2)

SUPPLIES: None

PERSONNEL: One

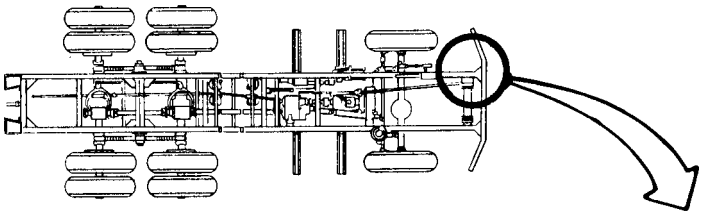
EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

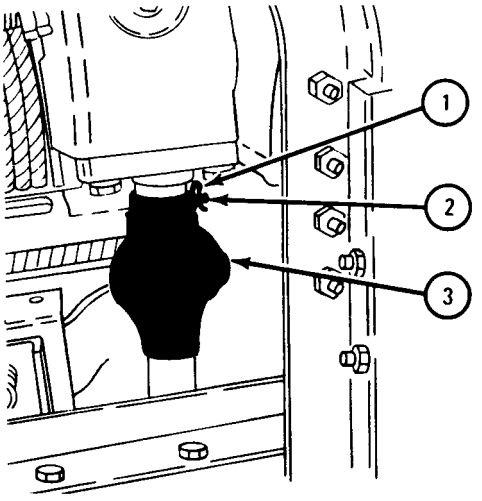
a. Removal.

FRAME 1

1. Working under front of truck and using pliers, pull out one of two cotter pins (1) from shear pin (2) in front universal joint yoke (3).
2. Using hammer and punch, drive shear pin (2) out of universal joint yoke (3). Leave other cotter pin (1) in shear pin.

GO TO FRAME 2



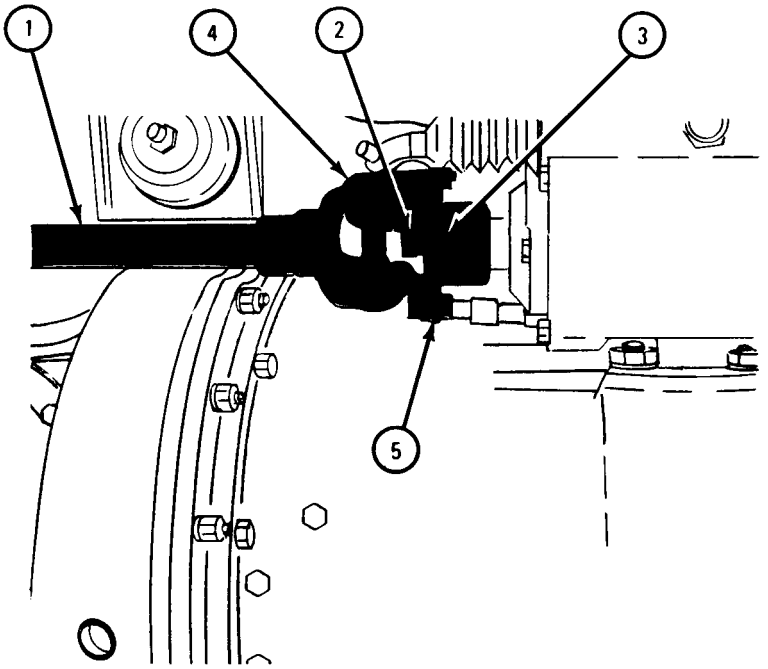


TA 080868

FRAME 2

1. Working under truck at rear of propeller shaft (1) and using 9/16-inch wrenches, unscrew and take out four screws (2) and four nuts (3). Pull universal joint (4) down and away from flange (5).
2. Take out propeller shaft (1) by dropping rear end down and sliding it toward rear of truck.

END OF TASK



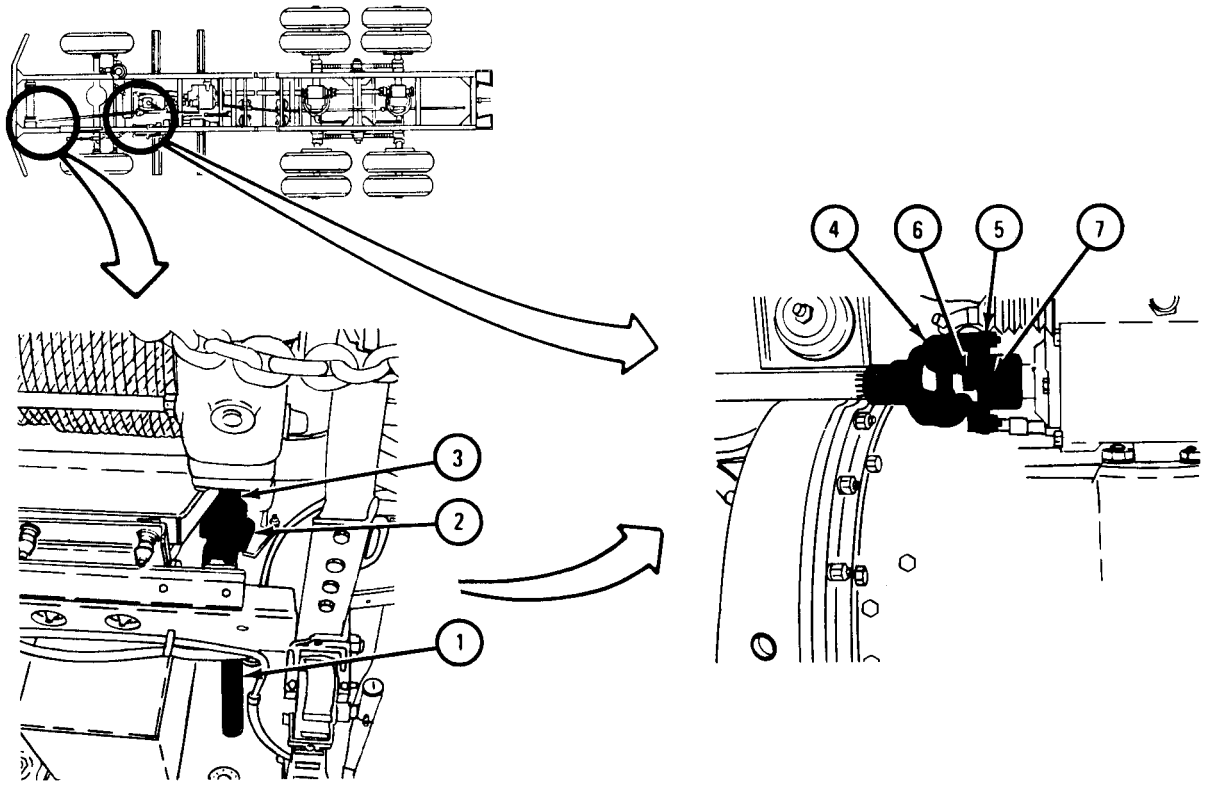
TA 080869

b. Replacement.

FRAME 1

1. Working under truck, put propeller shaft (1) in place as shown with front universal joint yoke (2) on winch input shaft (3).
2. Working at rear of propeller shaft (1), aline holes in universal joint yoke (4) with holes in flange (5).
3. Using 9/16-inch wrenches, screw in and tighten four screws (6) and four nuts (7).

GO TO FRAME 2

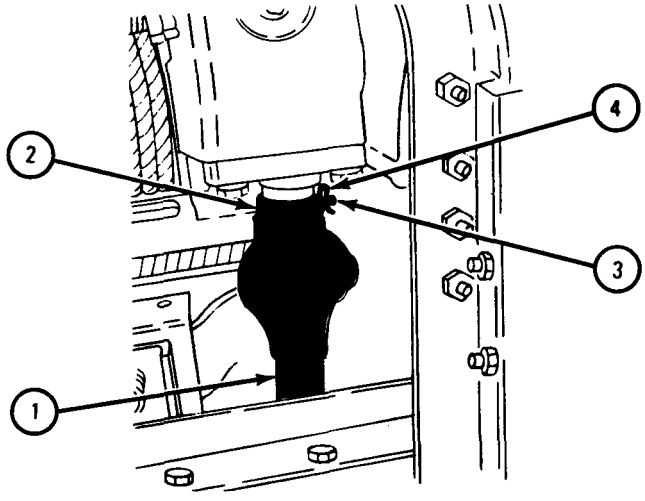


TA 080870

FRAME 2

1. Working at front of propeller shaft (1), aline shear pin hole in universal joint yoke (2) with hole in winch input shaft.
2. Using hammer, tap shear pin (3) through holes.
3. Using pliers, put in cotter pin (4) and bend open ends of cotter pin.

END OF TASK



TA 080871

19-6. REAR WINCH CONTROL LEVER LINKAGE ADJUSTMENT (TRUCK M764).

TOOLS: Needle nose pliers
9/16-inch open end wrench
Adjustable wrench
Mirror

SUPPLIES: Cotter pin

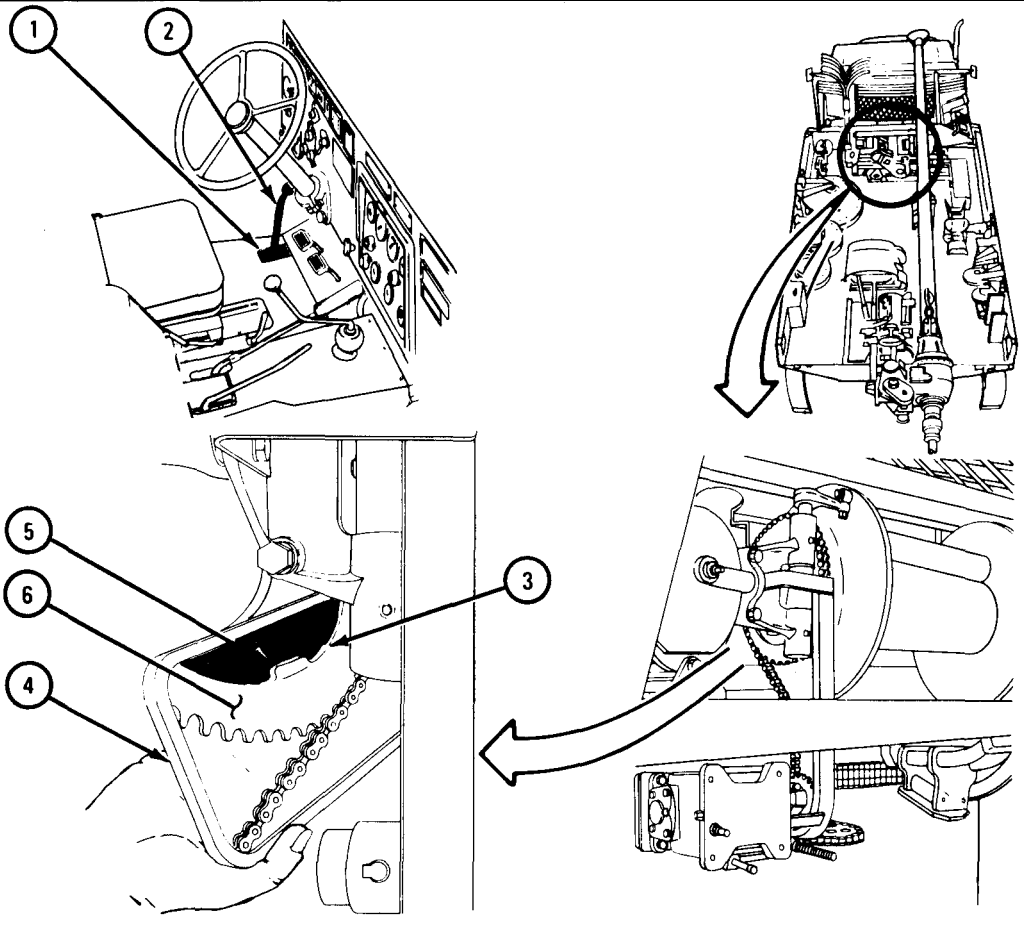
PERSONNEL: Two

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

FRAME 1

1. Turn locking latch (1) to unlocked position.
2. Move rear winch control lever (2) slightly to make sure that clutch and brake plate (3) snap into neutral detent.
3. Using mirror (4), check that clutch and brake plate (3) is just inside dogs (5) on drum assembly (6).

GO TO FRAME 2

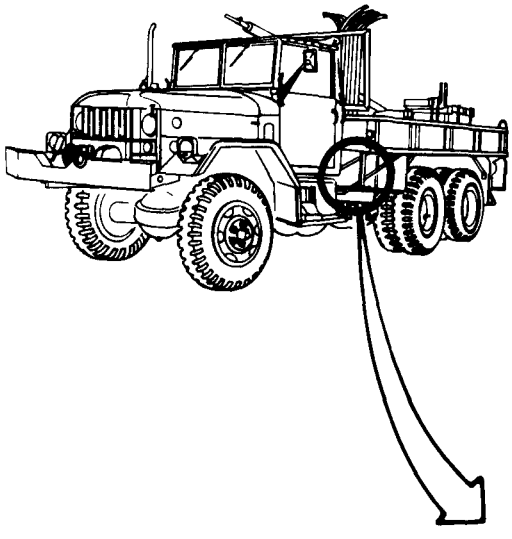


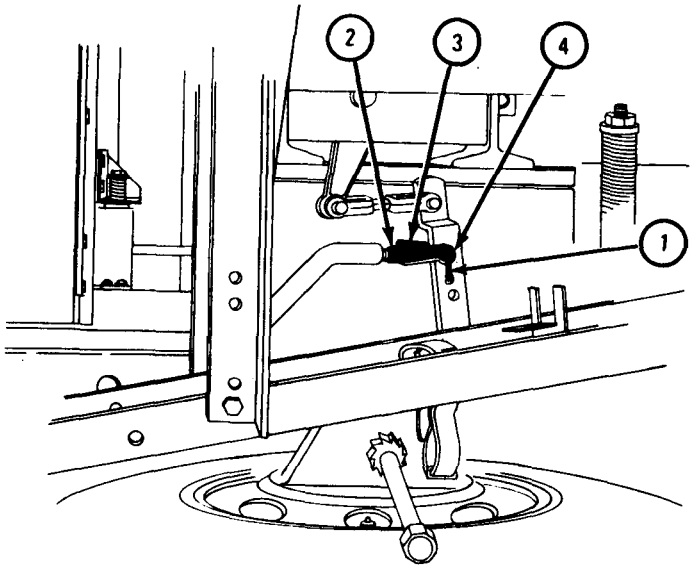
TA 085076

FRAME 2

1. Using pliers, pullout and throw away cotter pin (l).
2. Using 9/16-inch open end wrench, loosen locknut (2) from clevis (3).
3. Takeout clevis pin (4).

GO TO FRAME 3



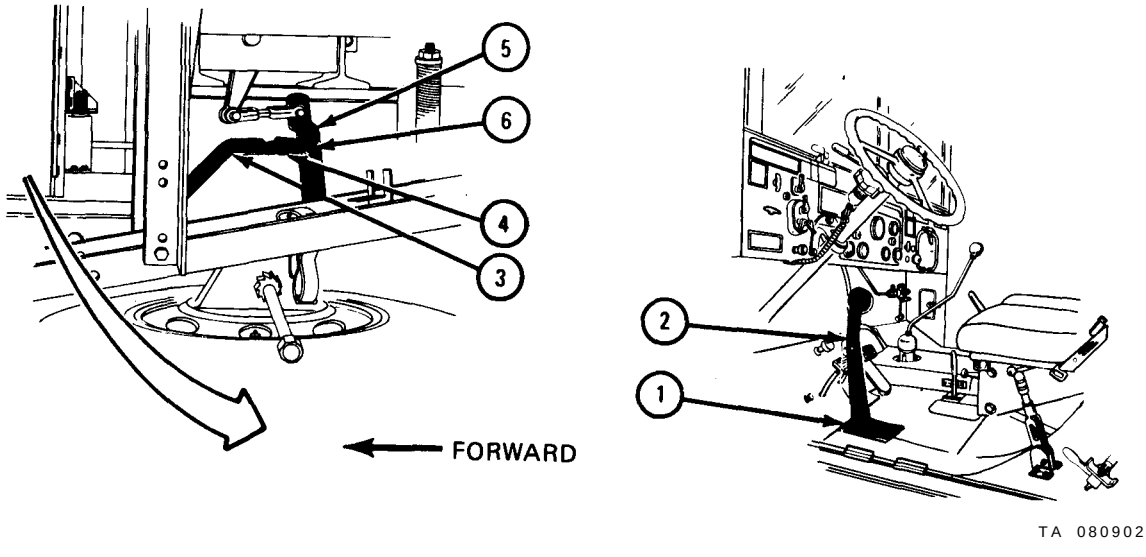


TA 080901

FRAME 3

Soldier A	1.	Turn locking latch (1) to lock position. Move and hold rear winch control lever (2) forward against edge of locking latch.
Soldier B	2.	Hold up control rod (3) and clevis (4) to check alinement of holes in clevis and pivot arm (5). Check how far clevis must be moved in or out for pin (6) to fit freely through holes.
Soldier A	3.	Turn locking latch (1) to unlock position. Move winch control lever (2) to the rear.
Soldier B	4.	Using adjustable wrench, turn clevis (4) in or out as needed to aline holes for pin (6).
Soldier A	5.	Slowly move winch control lever (2) forward until soldier B tells you to stop.
Soldier B	6.	When holes in clevis (4) and pivot arm (5) aline, tell soldier A to stop. Put in pin (6) and check for free fit. If pin fits freely, go to frame 4.
Soldiers A and B	7.	If pin (6) does not fit freely, do steps 3, 4, 5, and 6 again.

GO TO FRAME 4



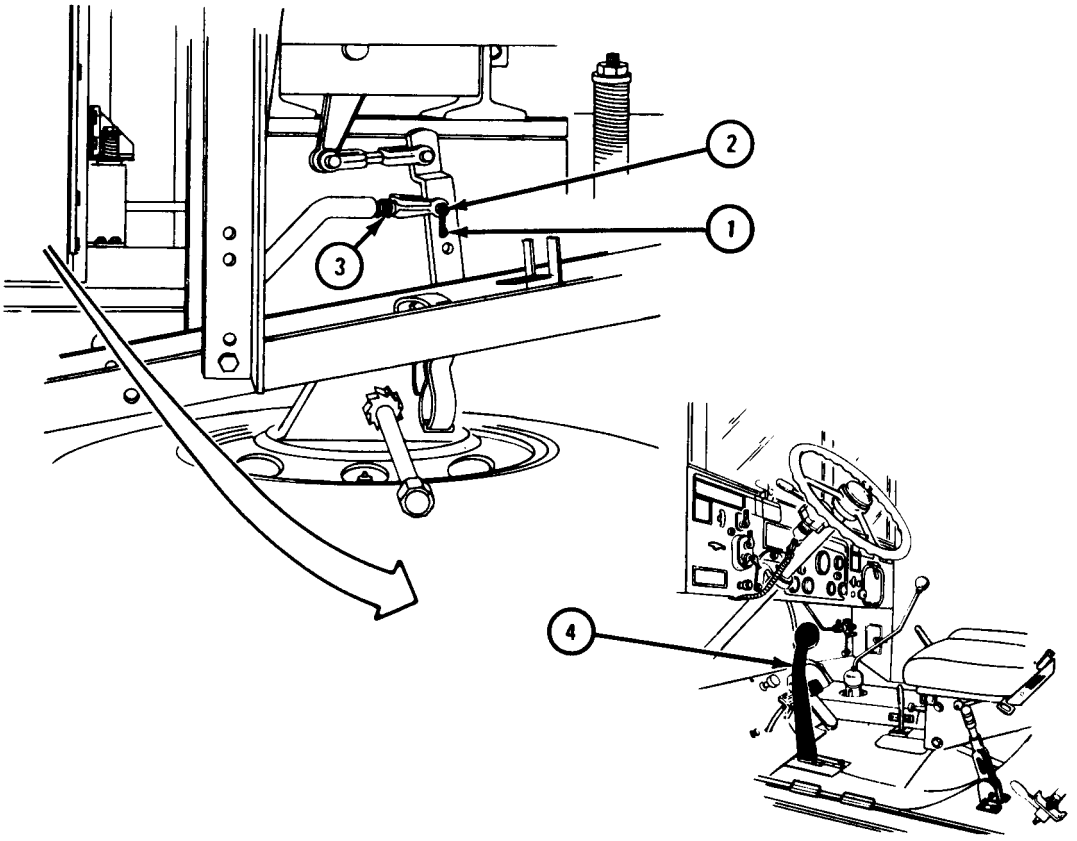
FRAME 4

1. Put cotter pin (1) through hole in pin (2). Using pliers, bend open ends of cotter pin.
2. Using 9/16-inch wrench, and adjustable wrench, tighten locknut (3).

Soldiers A and B

3. Move rear winch control lever (4) through its three operation positions. Check that detents match positions of control lever and that winch operates correctly. Refer to TM 9-2320-209-10.

END OF TASK



TA 085077

19-7. WINCH DRUM LOCK ASSEMBLY REMOVAL, REPAIR, AND REPLACEMENT (TRUCK M756A2).

TOOLS: 1/2-inch wrench (2)
3/4-inch wrench

SUPPLIES: Solvent, dry cleaning, type II (SD-2), Fed. Spec P-D-680

PERSONNEL: One

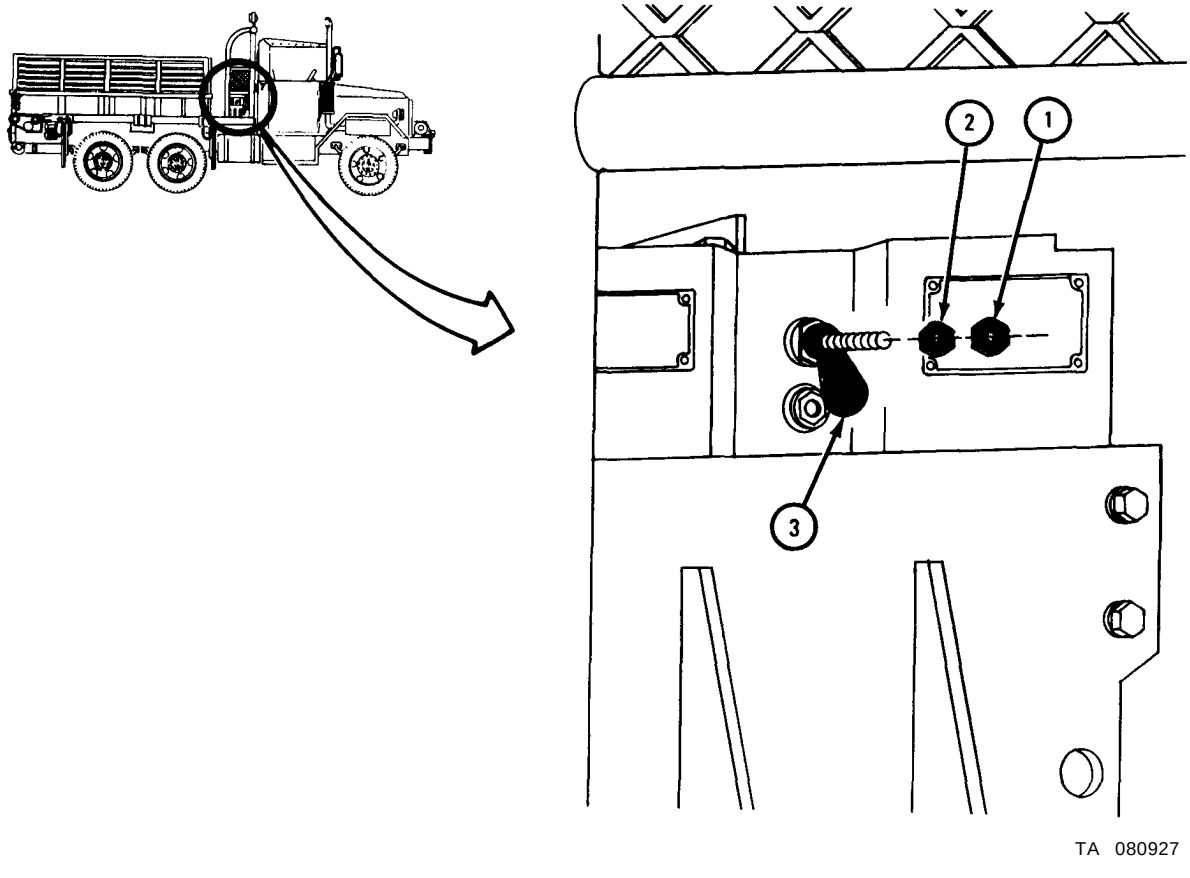
EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Removal.

FRAME 1

1. Using 1/2-inch wrenches, unscrew and take off locknut (1).
2. Using 1/2-inch wrench, unscrew and take off nut (2).
3. Take off drum lock latch (3).

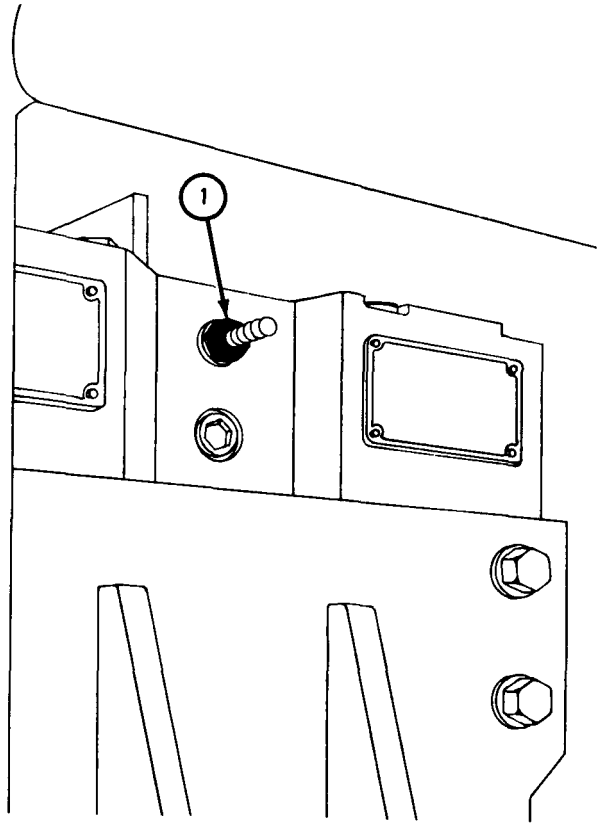
GO TO FRAME 2



FRAME 2

1. Using 3/4-inch wrench, unscrew and takeout poppet assembly (1).

END OF TASK



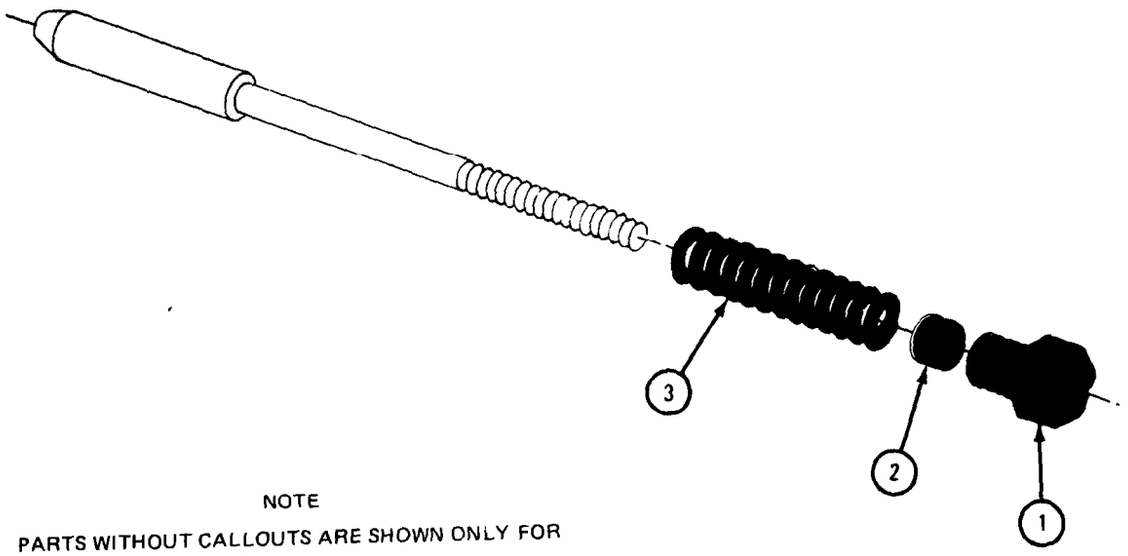
TA 080928

b. Disassembly.

FRAME 1

1. Slide off nut (1).
2. Take off spacer (2) and spring (3).

END OF TASK



NOTE

PARTS WITHOUT CALLOUTS ARE SHOWN ONLY FOR REFERENCE PURPOSES.

TA 080929

WARNING

Dry cleaning solvent is flammable. Do not use near an open flame. Keep a fire extinguisher nearby when solvent is used. Use only in well-ventilated places. Failure to do this may result in injury to personnel and damage to equipment.

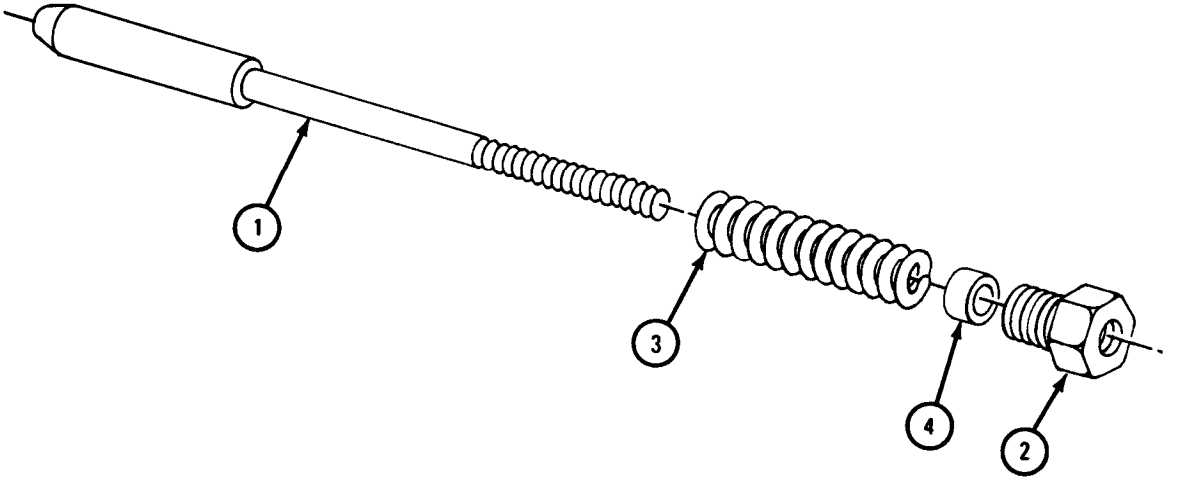
c. Cleaning. Clean all parts in solvent.

d. Inspection and Repair.

FRAME 1

1. Check that poppet (1), poppet nut (2), spring (3), and spacer (4) are not worn, bent or damaged. If parts are damaged, get new ones in their place.

END OF TASK



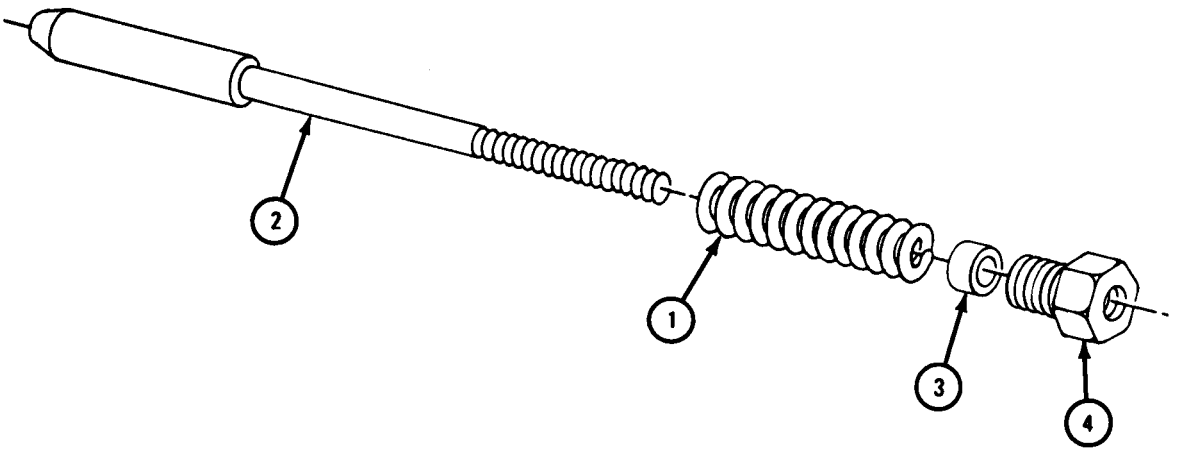
TA 080930

e. Assembly.

FRAME 1

1. Put spring (1) on poppet (2).
2. Put spacer (3) on poppet (2).
3. Slide nut (4) on poppet (2).

END OF TASK



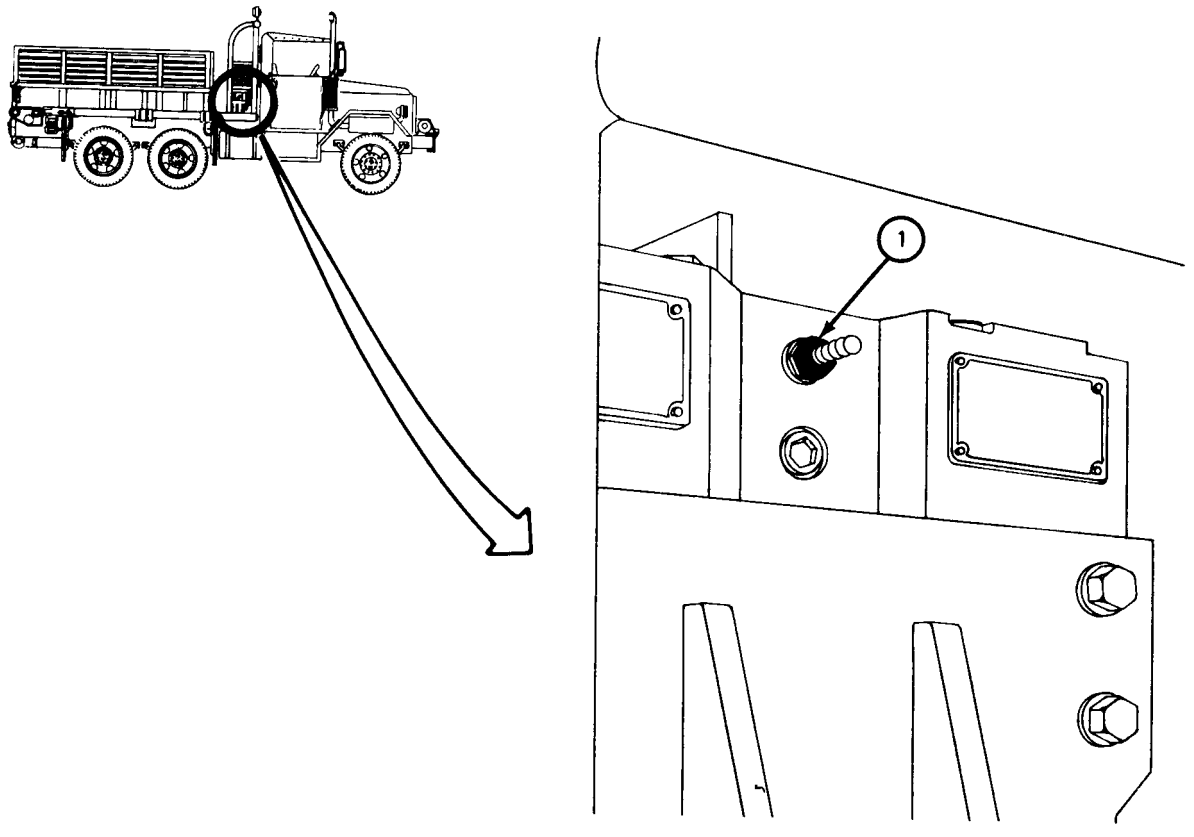
TA 080931

f. Replacement.

FRAME 1

1. Using 3/4-inch wrench, screw in and tighten poppet assembly (1).

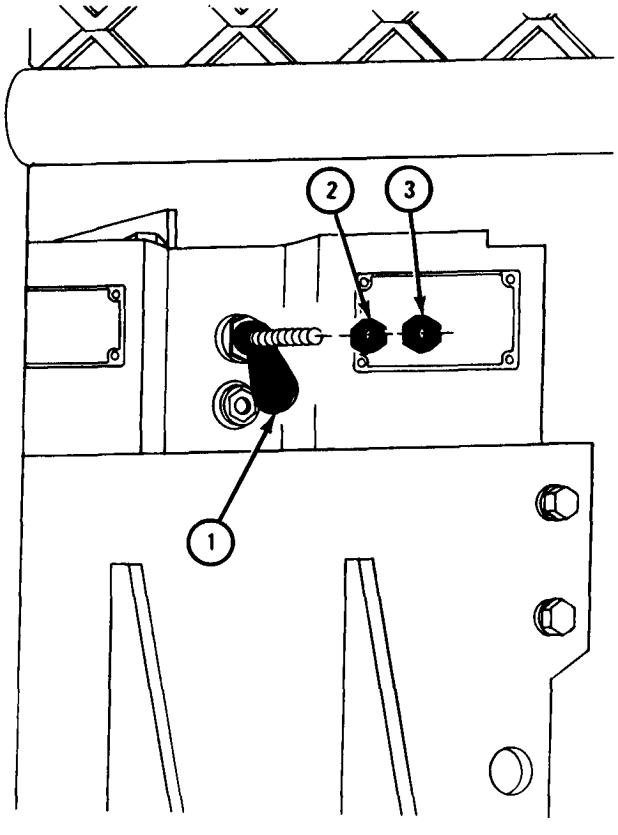
GO TO FRAME 2



FRAME 2

1. Put drum lock latch (1) in place.
2. Using 1/2-inch wrench, screw on and tighten nut (2).
3. Using 1/2-inch wrenches, screw on and tighten locknut (3).

END OF TASK



TA 080933

19-8. WINCH AND POWER TAKEOFF SPROCKETS REMOVAL, REPAIR, AND REPLACEMENT (TRUCK M756A2).

TOOLS: 3/4-inch drive ratchet
Short extension
1 1/2-inch socket
Medium ballpeen hammer
1/4-inch punch
Needle nose pliers
Snapring pliers
6-inch puller
5-foot prybar
Wood block, 2 x 4 x 15 1/2 inches
Wood block, 2 x 4 x 3 inches

SUPPLIES: Solvent, dry cleaning, type II (SD-2), Fed. Spec P-D-680
Cotter pin

PERSONNEL: Two

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Preliminary Procedure. Remove winch drive chain. Refer to para 19-13.

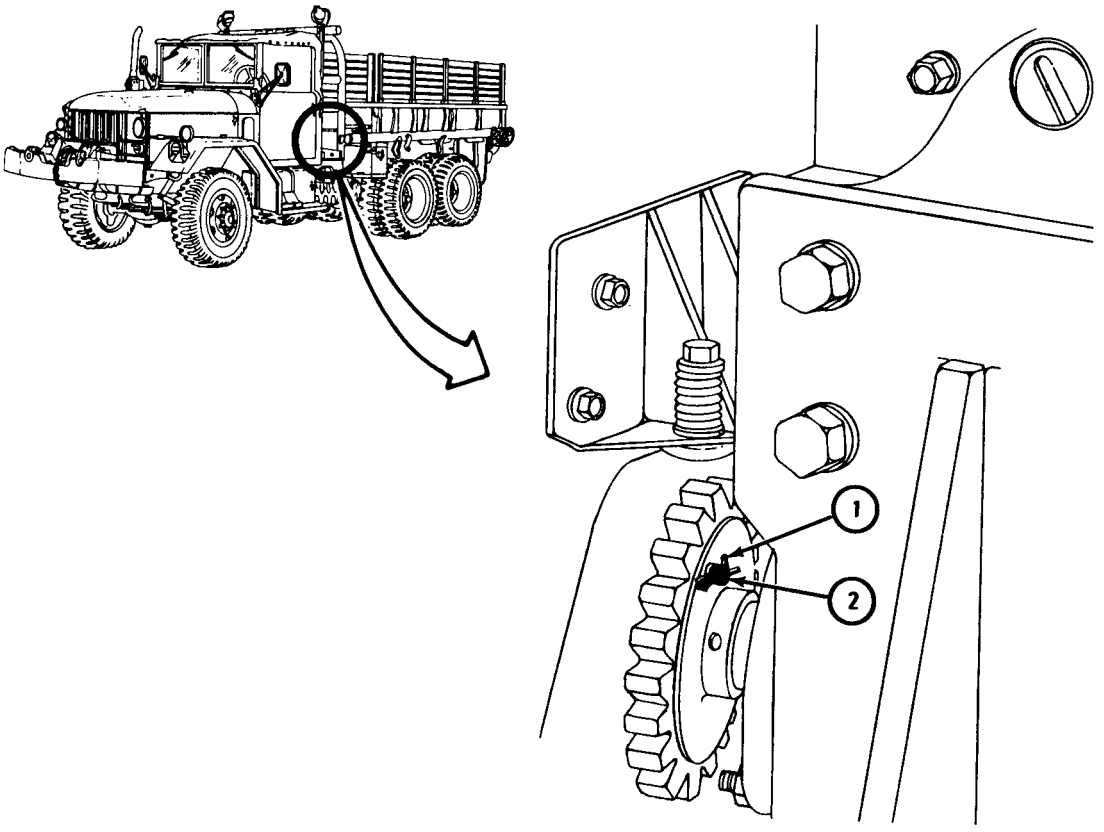
b. Removal.

(1) Winch sprocket.

FRAME 1

1. Using needle nose pliers, pull out cotter pin (1) from shear pin (2). Throw away cotter pin.
2. Take out shear pin (2).

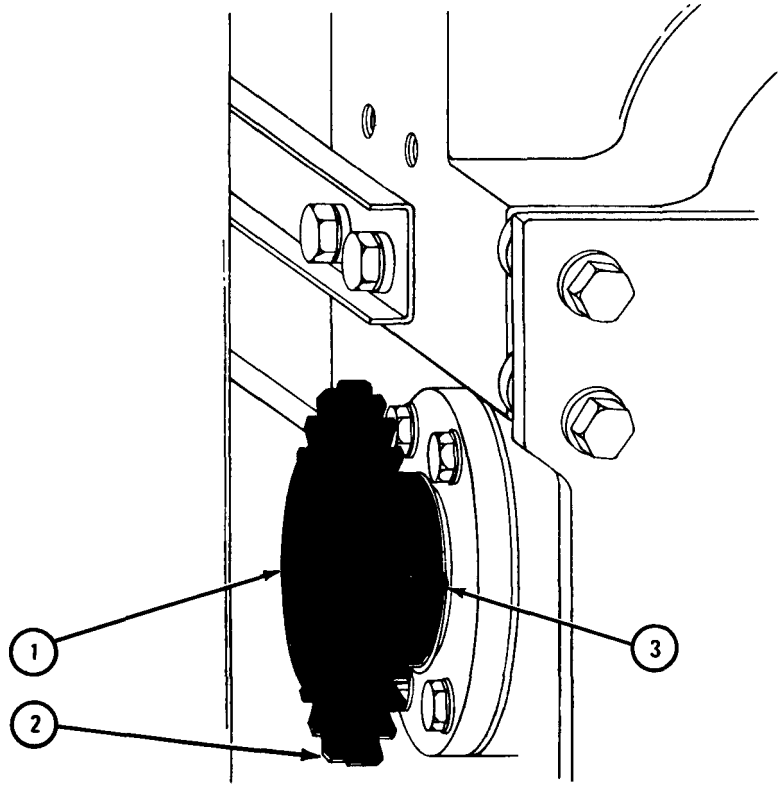
GO TO FRAME 2



FRAME 2

1. Turn hub (1) one-quarter turn to line up hole in sprocket (2).
2. Using hammer and punch, drive out pin (3) from hub (1).
3. Take off hub (1) and sprocket (2) together.

END OF TASK



TA 080915

(2) Power takeoff sprocket.

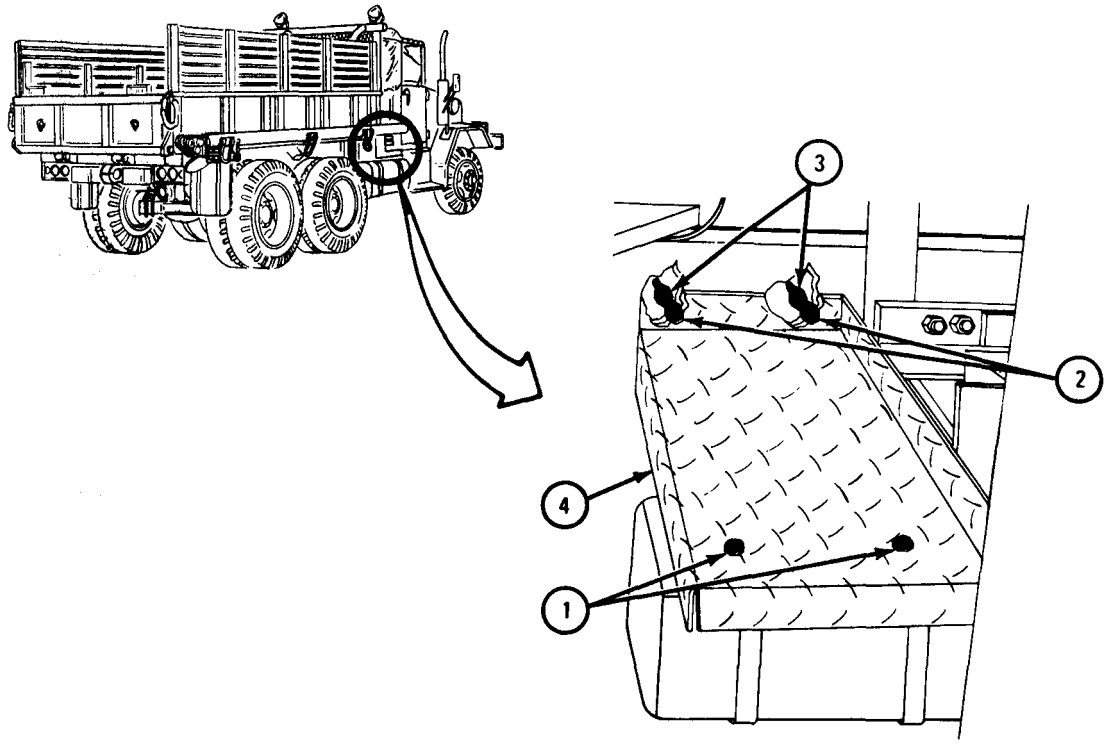
FRAME 1

NOTE

To take off power take off sprocket, winch mounting frame must first be raised for clearance.

1. Using 1/2-inch wrench, unscrew and take out two screws (1).
2. Using 1/2-inch wrenches, unscrew and take out two screws (2) and two nuts (3).
3. Take off tread plate (4).

GO TO FRAME 2



TA 085001

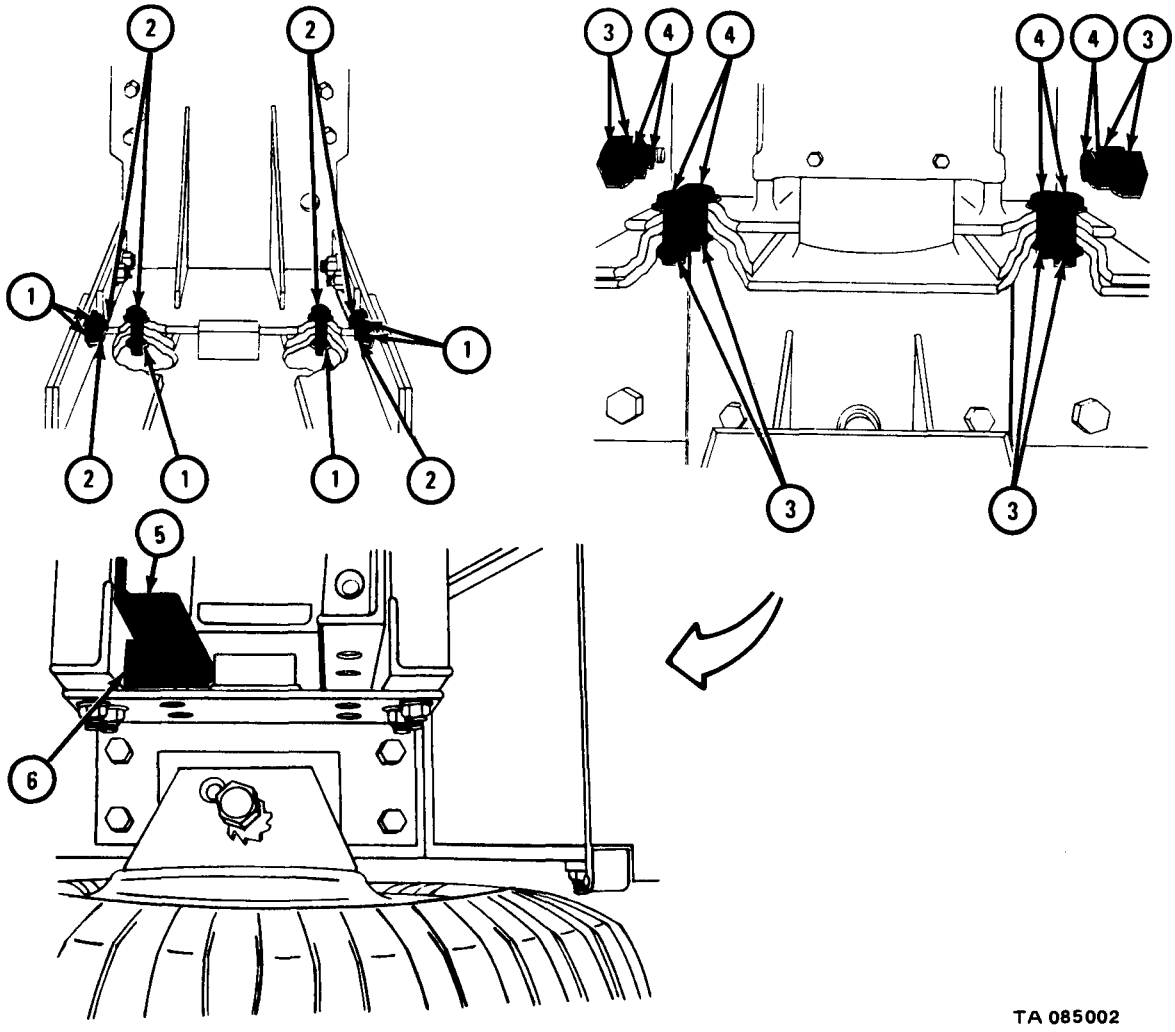
FRAME 2

1. Working on right side of winch, using 15/16-inch wrenches, unscrew and take out six nuts (1) and six screws (2).
2. Working on left side of winch, using 15/16-inch wrenches, unscrew and take out eight nuts (3) and eight screws (4).

Soldier A 3. Using prybar, raise left side of winch with mount (5) three inches.

Soldier B 4. Place 2 x 4 x 3-inch wood block (6) under winch mount (5).

GO TO FRAME 3



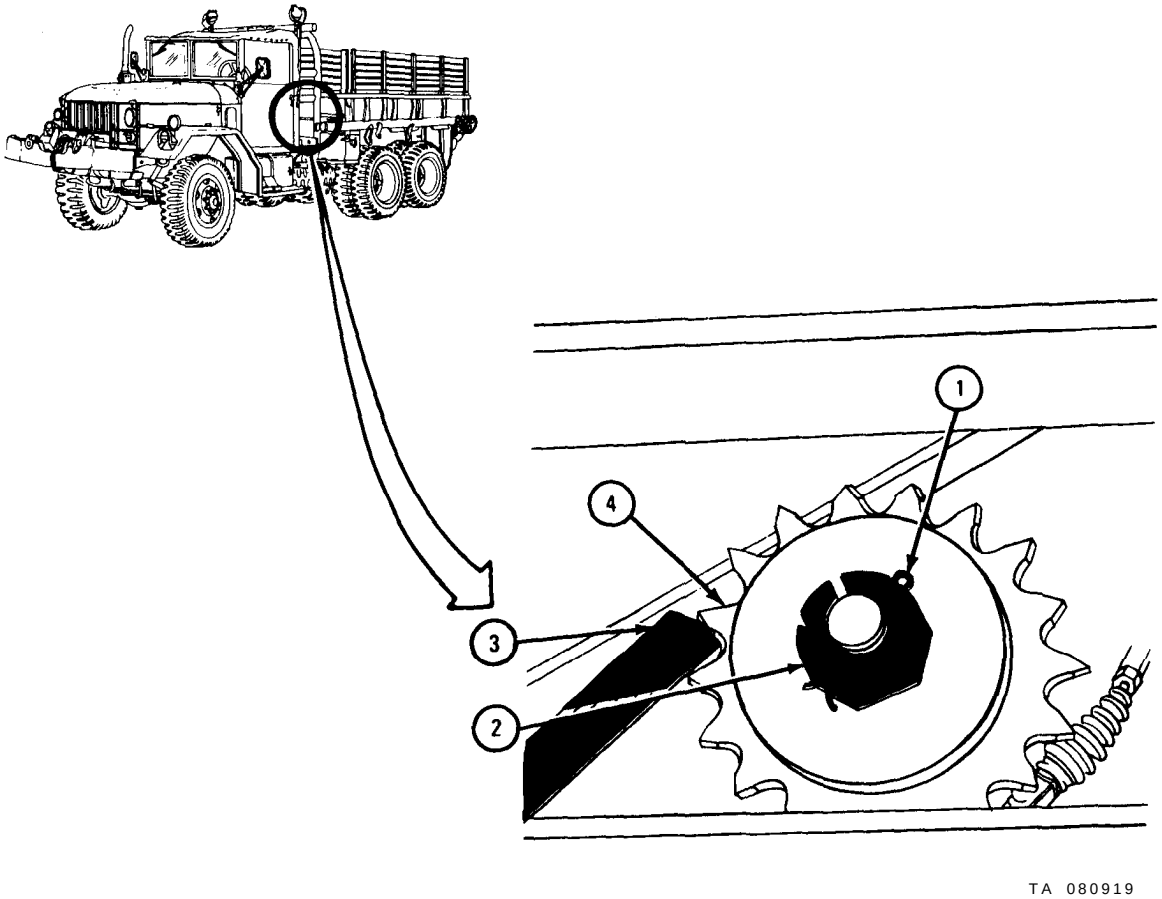
FRAME 3

1. Working under truck, using needle nose pliers, pull out cotter pin (1) from shaft nut (2). Throw away cotter pin.
2. Hold 2 x 4 x 15 1/2-inch wood block (3) between teeth of sprocket (4) and truck frame. Using 3/4-inch ratchet, short extension, and 1 1/2-inch socket, unscrew and take off shaft nut (2).
3. Using puller, take off sprocket (4).

NOTE

Do not lose key in sprocket shaft.

END OF TASK



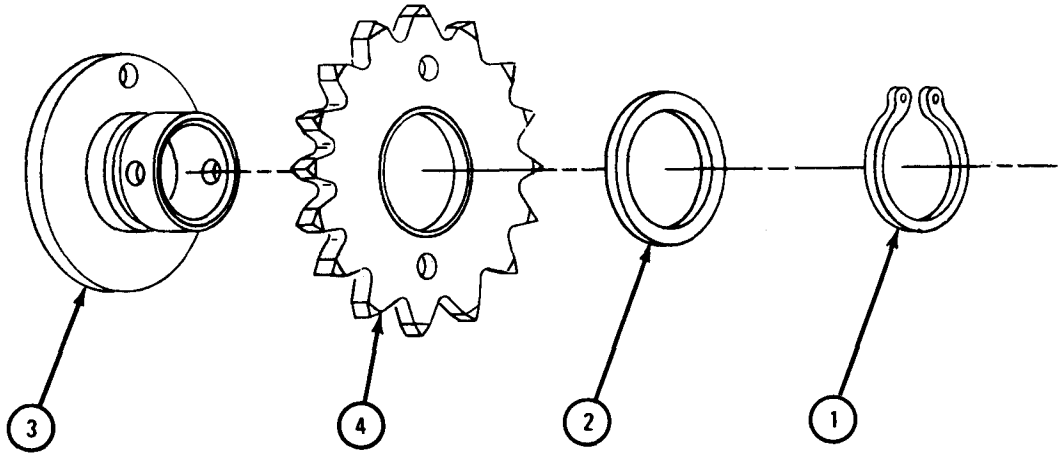
TA 080919

c. Disassembly of Winch Sprocket Assembly.

FRAME 1

1. Using snapring pliers, take off snapring (1).
2. Takeout washer (2).
3. Take hub (3) out of sprocket (4).

END OF TASK



TA 080916

WARNING

Dry cleaning solvent is flammable. Do not use near an open flame. Keep a fire extinguisher nearby when solvent is used. Use only in well-ventilated places. Failure to do this may result in injury to personnel or damage to equipment.

d. Cleaning. Clean sprockets in solvent.

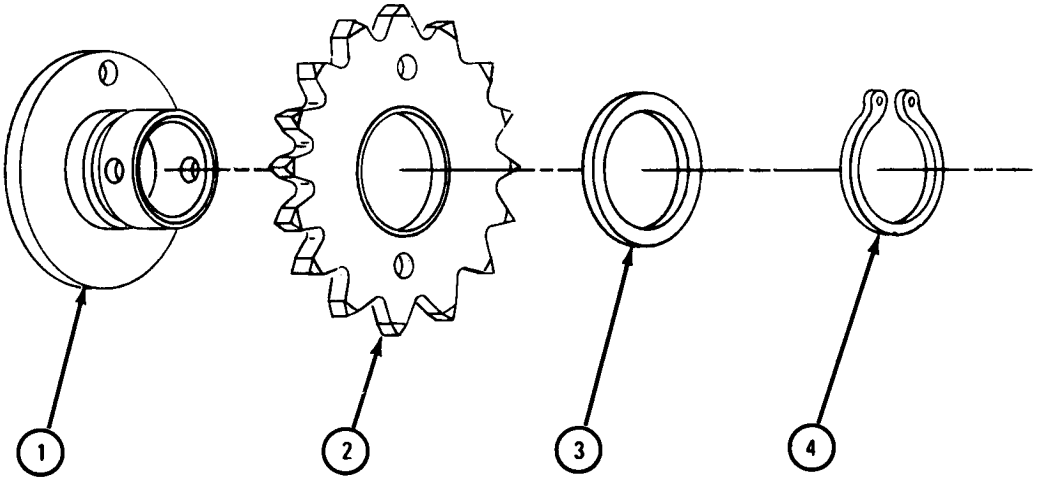
e. Inspection and Repair. Check that sprockets have no wear, cracks, breaks, chips or broken teeth. If sprockets are damaged, get new ones in their place.

f. Assembly of Winch Sprocket Assembly.

FRAME 1

1. Put hub (1) in sprocket (2).
2. Put washer (3) in place.
3. Using snapring pliers, put on snapring (4).

END OF TASK



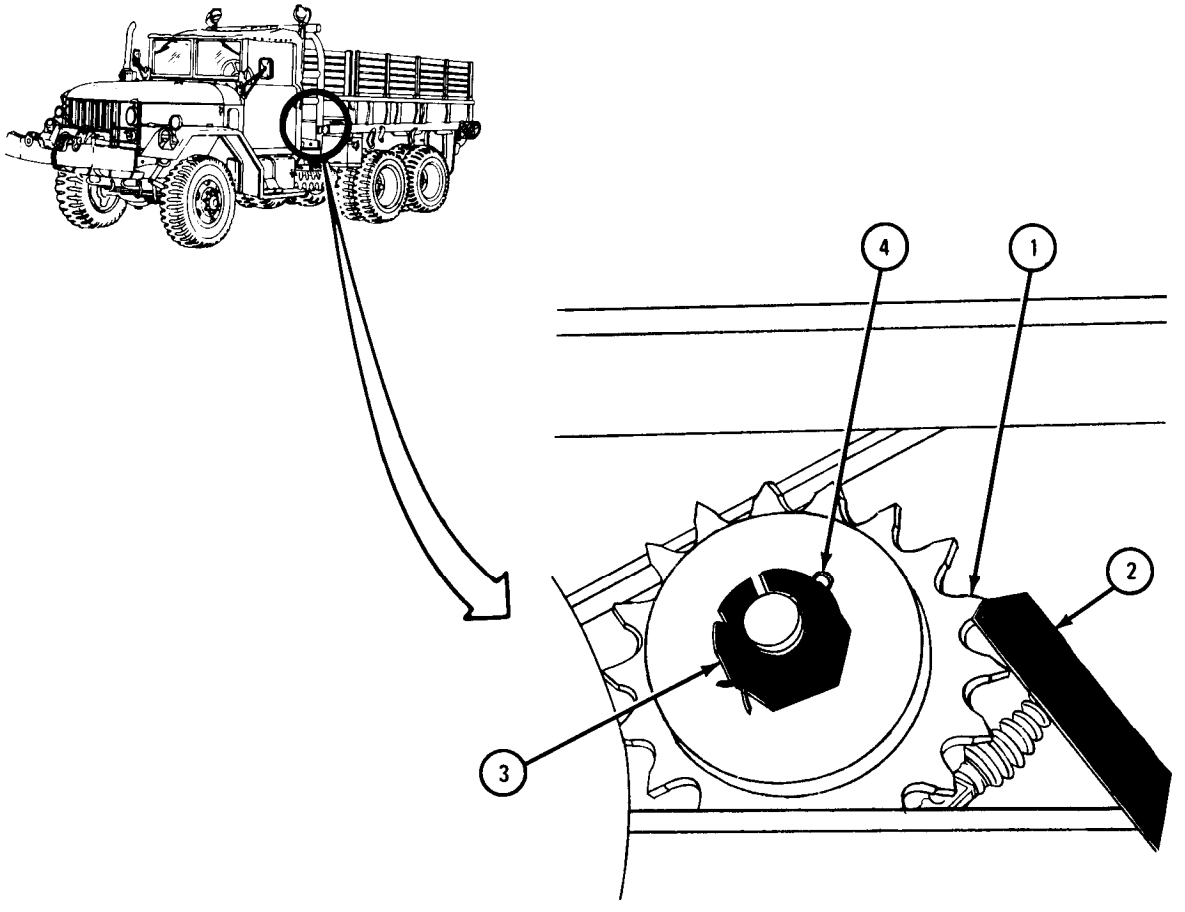
g. Replacement.

(1) Power takeoff sprocket.

FRAME 1

1. Put sprocket (1) in place.
2. Hold 2 x 4 x 15 1/2-inch wood block (2) between teeth of sprocket (1) and truck frame. Using 3/4-inch drive ratchet, short extension, and 1 1/2-inch socket, screw on and tighten shaft nut (3).
3. Using needle nose pliers, put cotter pin (4) through hole in shaft nut (3) and bend open ends of cotter pin.

GO TO FRAME 2



TA 080920

FRAME 2

Soldier A 1. Using prybar, raise left side of winch with mount (1) off wood block (2).

Soldier B 2. Take out wood block (2) .

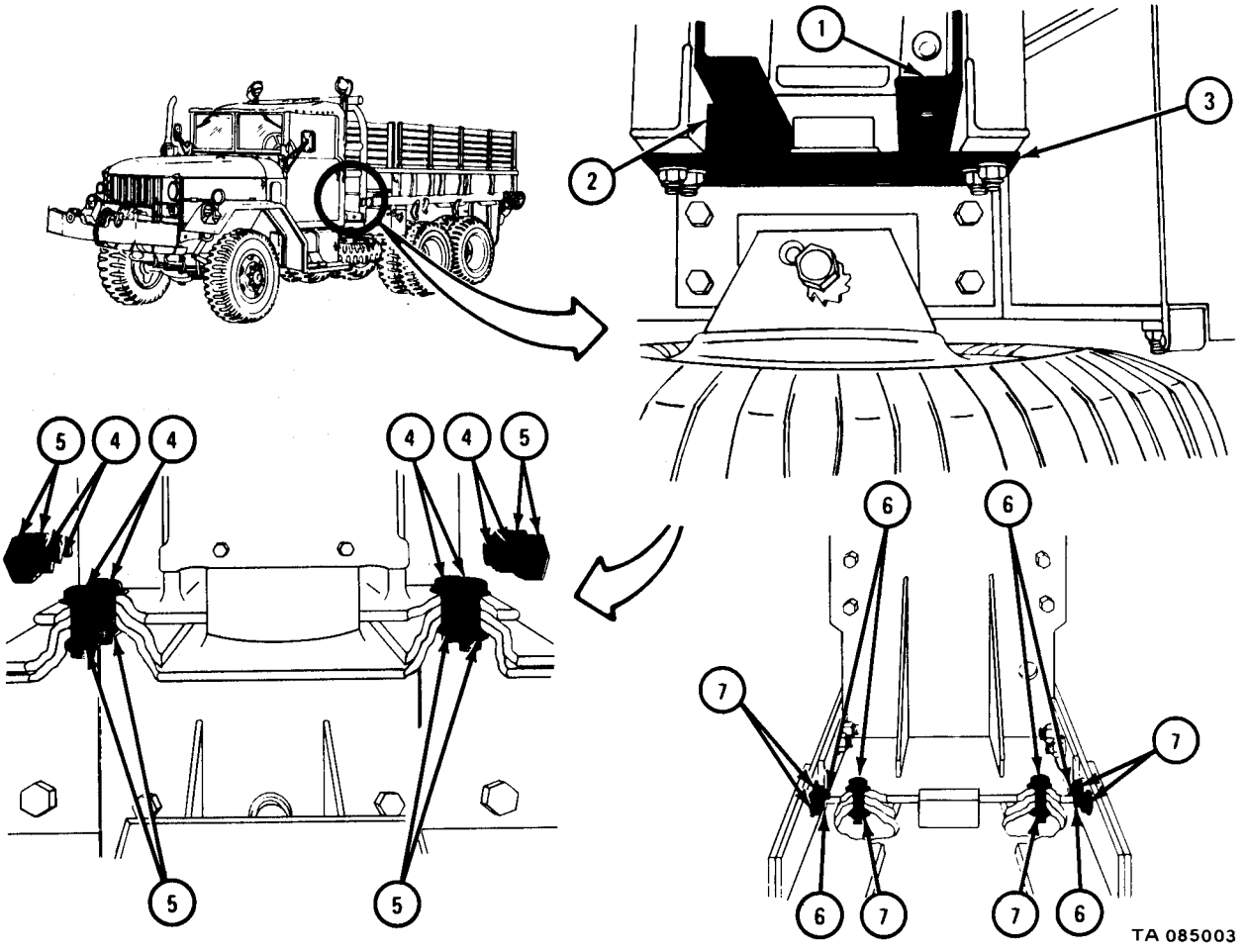
Soldier A 3. Using prybar, lower left side of winch with mount (1), alining mounting holes with holes in bracket (3).

Soldier B 4. Place eight screws (4) in place. Screw on eight nuts (5).

Soldier A 5. Working on right side of truck, put six screws (6) in place. Using 15/16-inch wrenches, screw on and tighten six nuts (7).

Soldier B 6. Working on left side of truck, using 15/16-inch wrenches, tighten eight nuts (5).

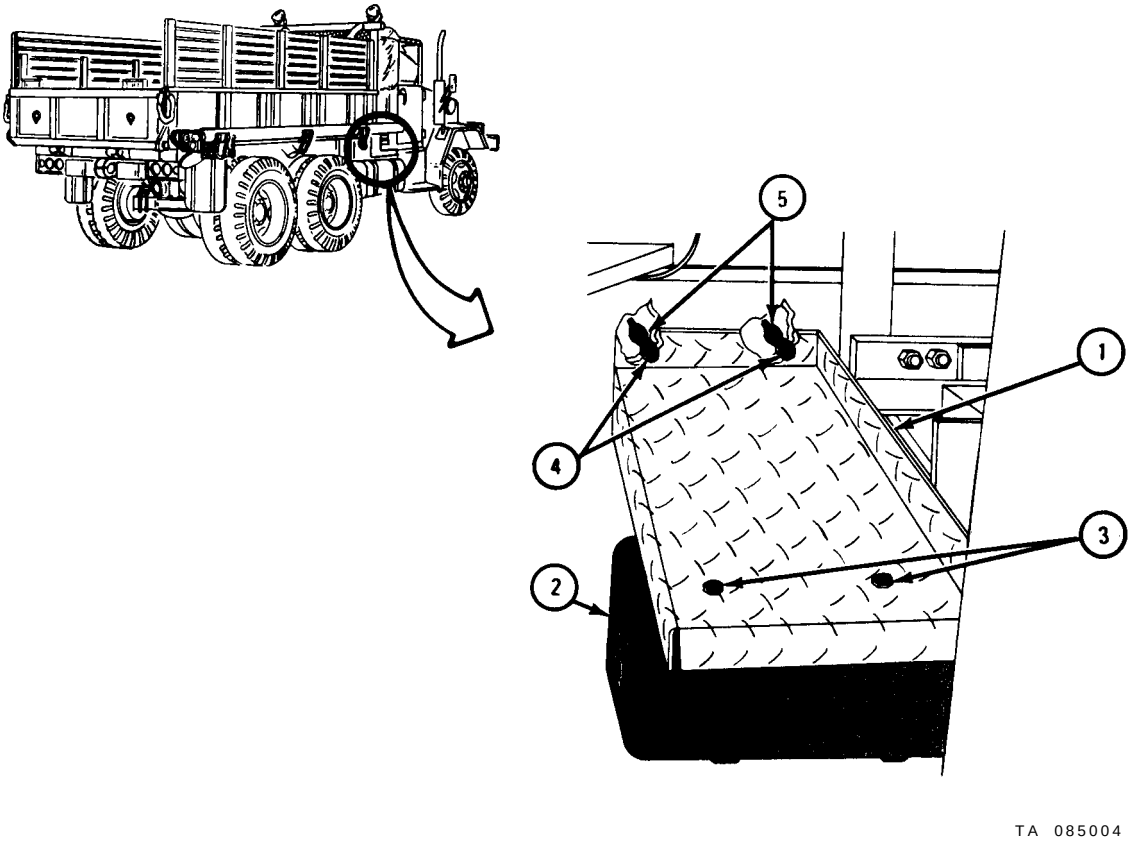
GO TO FRAME 3



FRAME 3

1. Working on right side of truck, put tread plate (1) in place over fuel tank (2) and aline holes.
2. Using 1/2-inch wrench, screw in, but do not tighten, two screws (3).
3. Put two screws (4) in place. Using 1/2-inch wrenches, screw on and tighten two nuts (5).
4. Using 1/2-inch wrench, tighten two screws (3).

END OF TASK



TA 085004

(2) Winch sprocket assembly.

FRAME 1

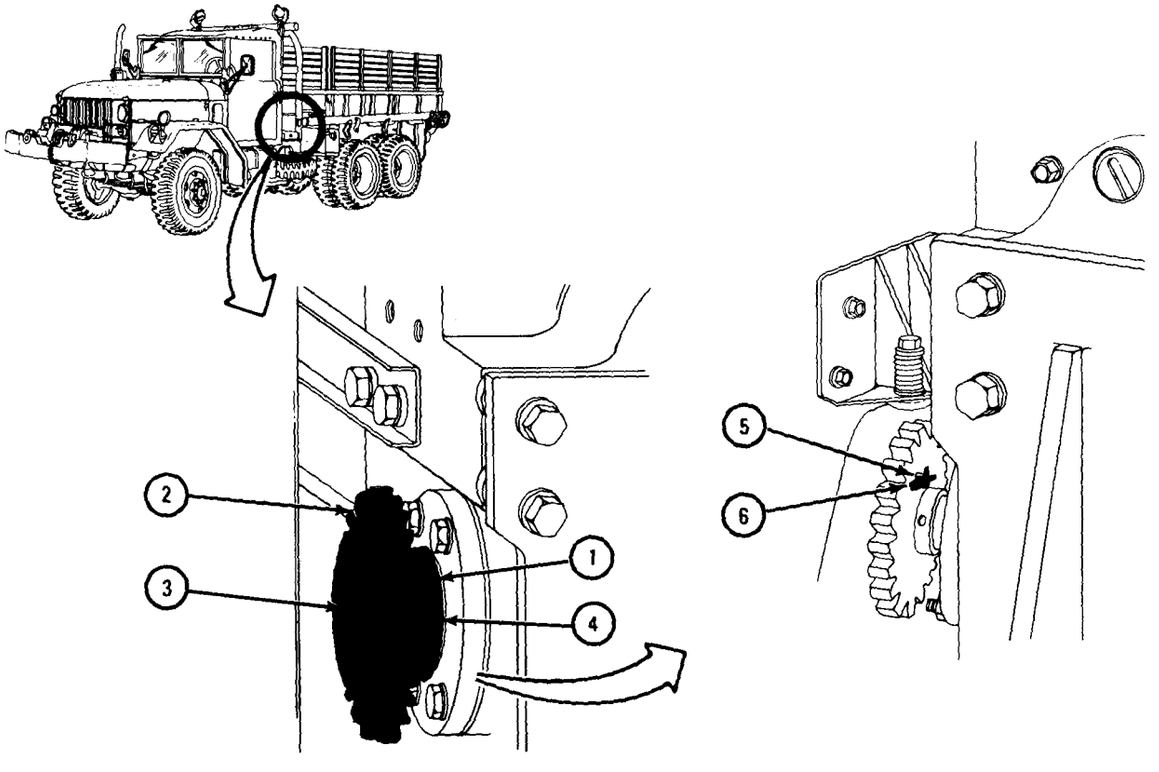
1. Put hub (1) and sprocket (2) on winch shaft (3) and line up hole in winch shaft with holes in hub and sprocket.
2. Using hammer and punch, drive pin (4) into winch shaft (3) and hub (1). Pin must be only in hub and shaft so sprocket will turn.
3. Turn sprocket (2) one-quarter turn and put shear pin (5) through holes in sprocket and hub (1).
4. Using needle nose pliers, put cotter pin (6) through hole in shear pin (5) and bend open ends of cotter pin.

NOTE

Follow-on Maintenance Action Required:

Replace winch drive chain. Refer to para 19-13.

END OF TASK



TA 080918

19-9. REAR WINCH DRUM CLUTCH LEVER AND GUIDE PLATE REMOVAL, REPAIR, AND REPLACEMENT (TRUCK M756A2).

TOOLS: Hammer
1/8-inch punch
9/16-inch wrench
Flat-tip screwdriver
Five-foot prybar
Vise

SUPPLIES: Solvent, dry cleaning, type II (SD-2), Fed. Spec P-D-680

PERSONNEL: Two

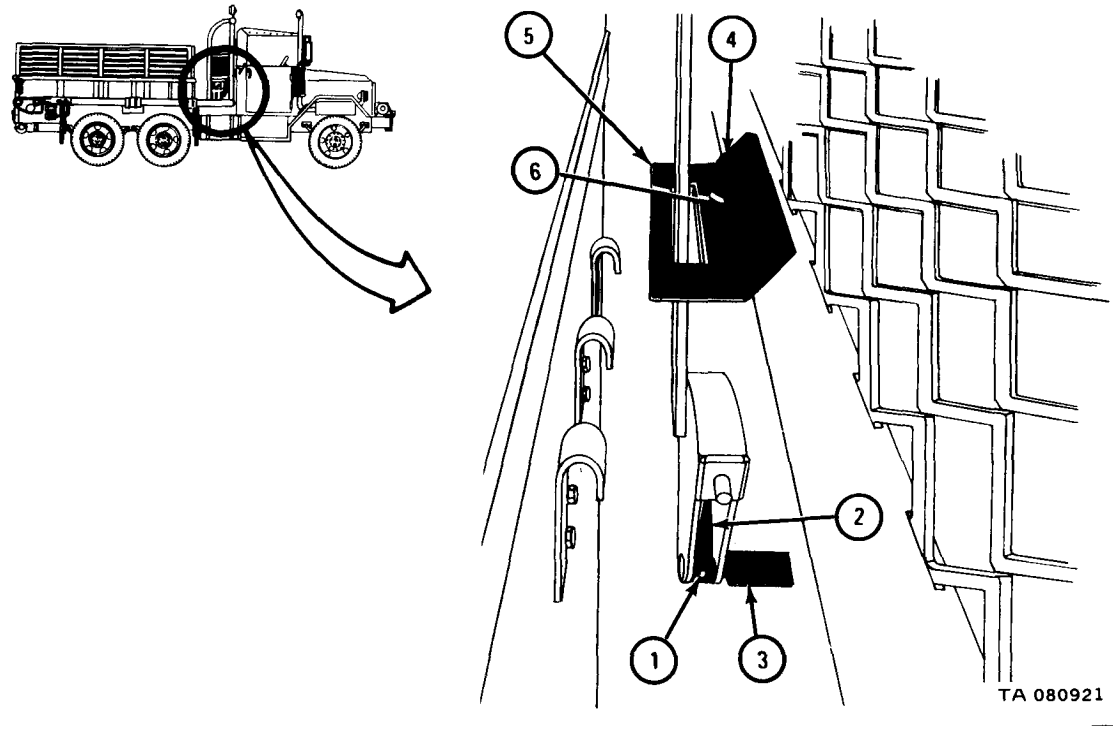
EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Removal.

FRAME 1

1. Working in between cab protector and cab and using hammer and punch, drive out pin (1) holding drum clutch lever (2) to clutch shaft (3).
2. Using 9/16-inch wrench, unscrew and take out two screws, lockwashers, and flat washers (4) from guide plate (5).
3. Take off data plate (6) and guide plate (5).
4. Using screwdriver, pry drum clutch lever (2) from clutch shaft (3). Take out drum clutch lever (2).

END OF TASK

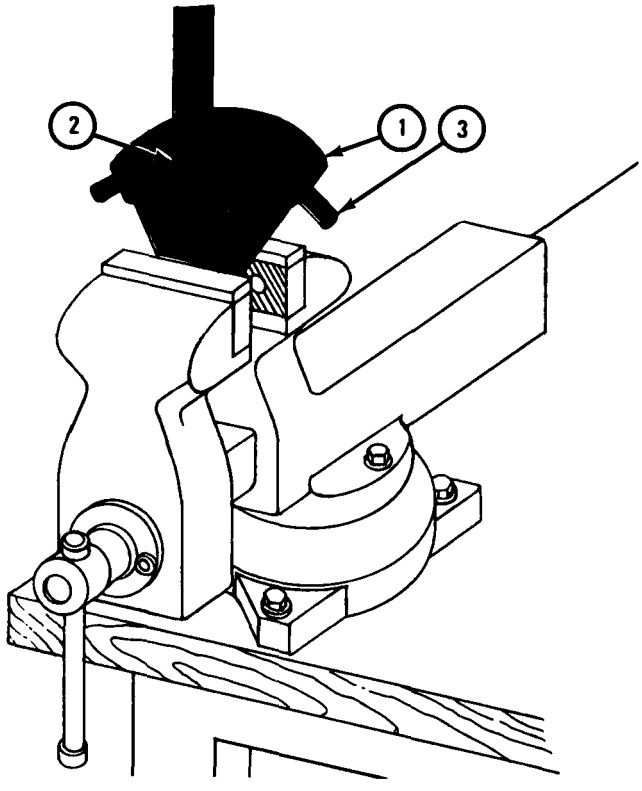


b . Disassembly.

FRAME 1

1. Put drum clutch lever (1) in vise as shown.
2. Using hammer and punch, drive out pin (2) from drum clutch lever (1).
3. Take drum clutch lever (1) out of vise and take out curved rod (3).

GO TO FRAME 2

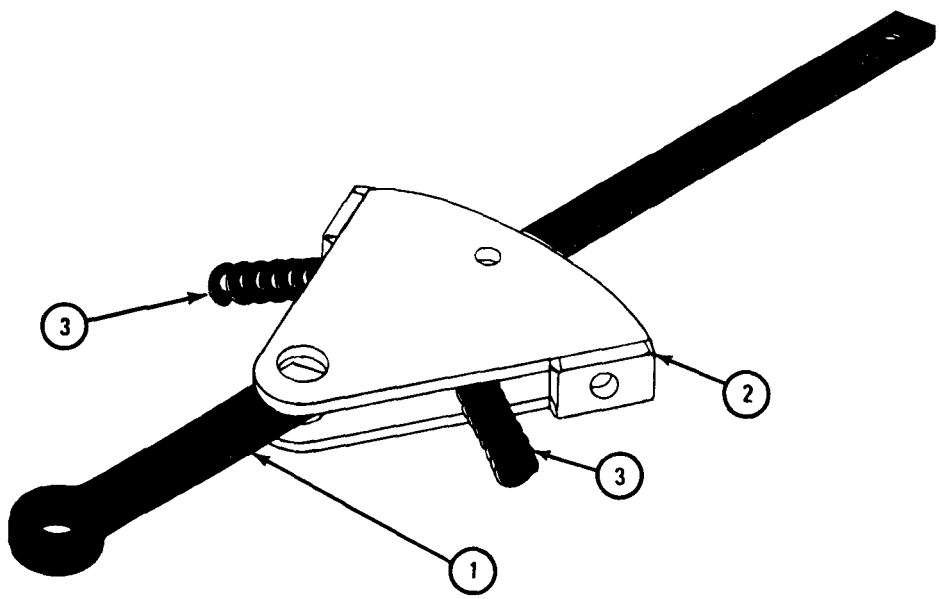


TA 080922

FRAME 2

1. Pull out center post (1) from drum clutch lever (2). Be careful two springs (3) do not pop out.
2. Take out two springs (3).

END OF TASK



TA 080923

c. Assembly.

FRAME 1

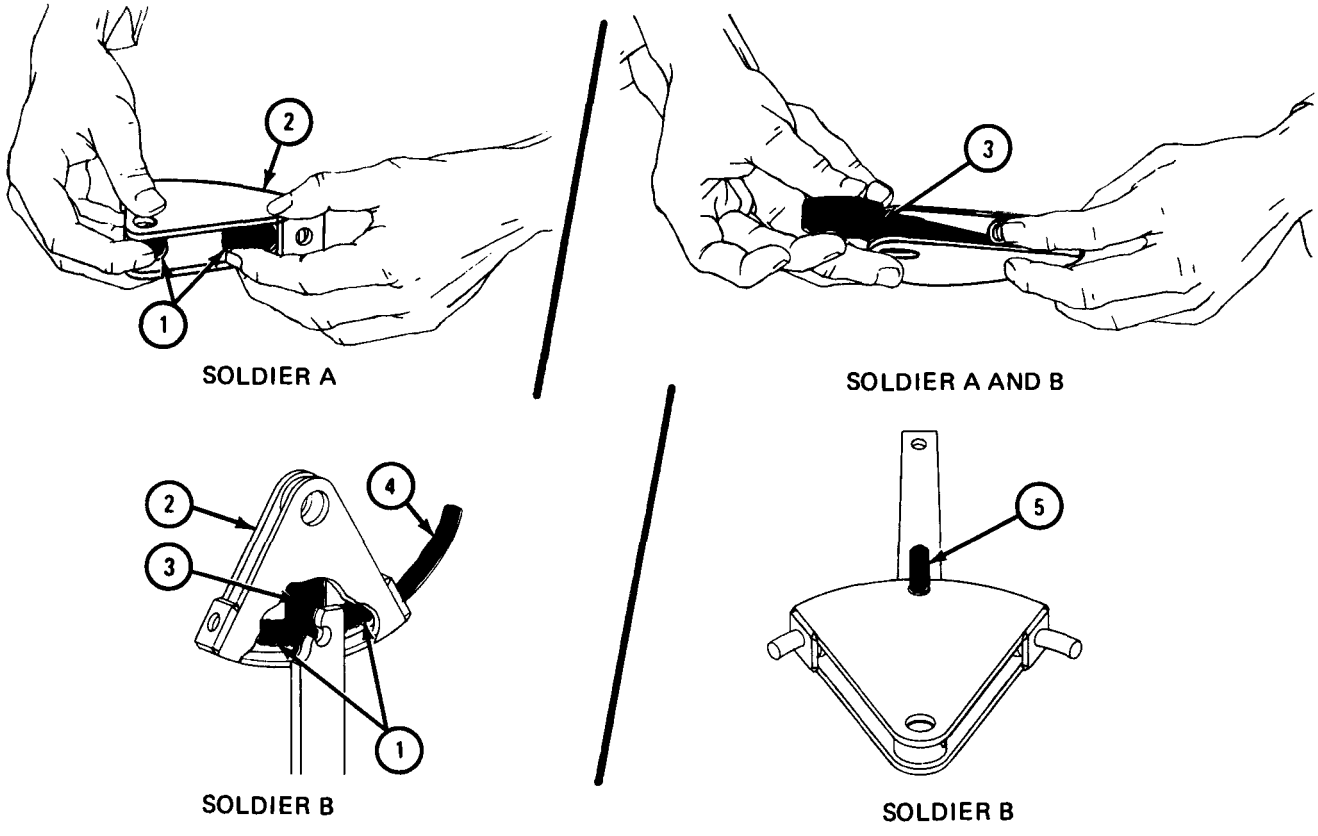
Soldier A 1. Hold two springs (1) in drum clutch lever (2).

Soldier B 2. Put in center post (3) as soldier A holds in springs (1).

3. Push curved rod (4) through drum clutch lever (2), springs (1), and center post (3).

4. Using hammer and punch, drive in pin (5).

END OF TASK

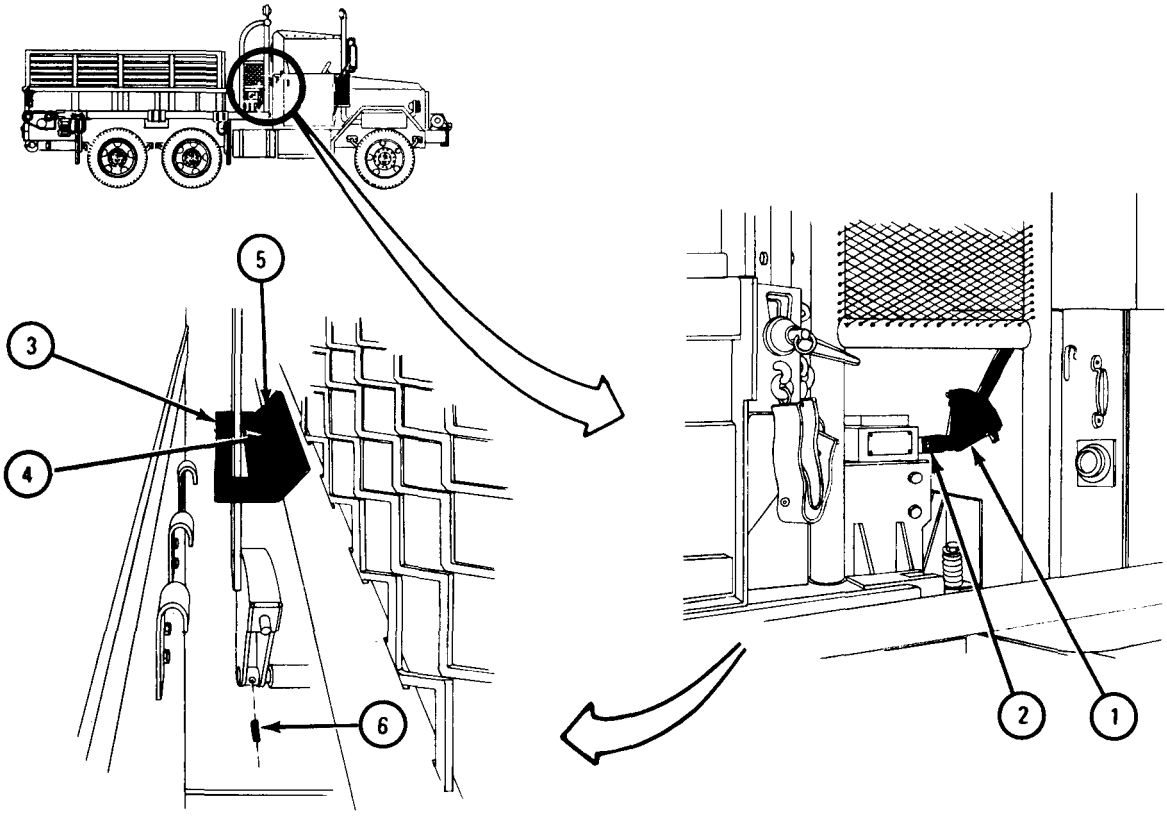


d. Replacement.

FRAME 1

1. Using prybar, push drum clutch lever (1) onto winch shaft (2).
2. Put guide plate (3) and data plate (4) in place.
3. Using 9/16-inch wrench, screw in and tighten two screws, lockwashers, and flat washers (5).
4. Using hammer and punch, drive in pin (6) to hold drum clutch lever (1) on winch shaft (2).

END OF TASK



TA 080926

19-10. FRONT, MID, AND REAR WINCH CABLE AND CHAIN ASSEMBLY REMOVAL, REPAIR, AND REPLACEMENT.

NOTE

This task shown is for the mid winch cable and chain assembly. This task is the same for the front and rear winch cable and chain assemblies.

TOOLS:
- 3/8-inch socket head screw key (Allen wrench or equivalent)
- 12-inch ruller
- Leather gloves
- Wire cutters
- Hammer
- Soft-jawed vise
- Adjustable wrench (2)

SUPPLIES:
- Solvent, dry cleaning, type II (SD-2), Fed. Spec P-D-680
- Clean rags
- Clevis assembly
- Seizing

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

WARNING

Always wear protective gloves when handling winch cable. Do not let winch cable slip through hands. Rusty or broken wires can cause serious injury.

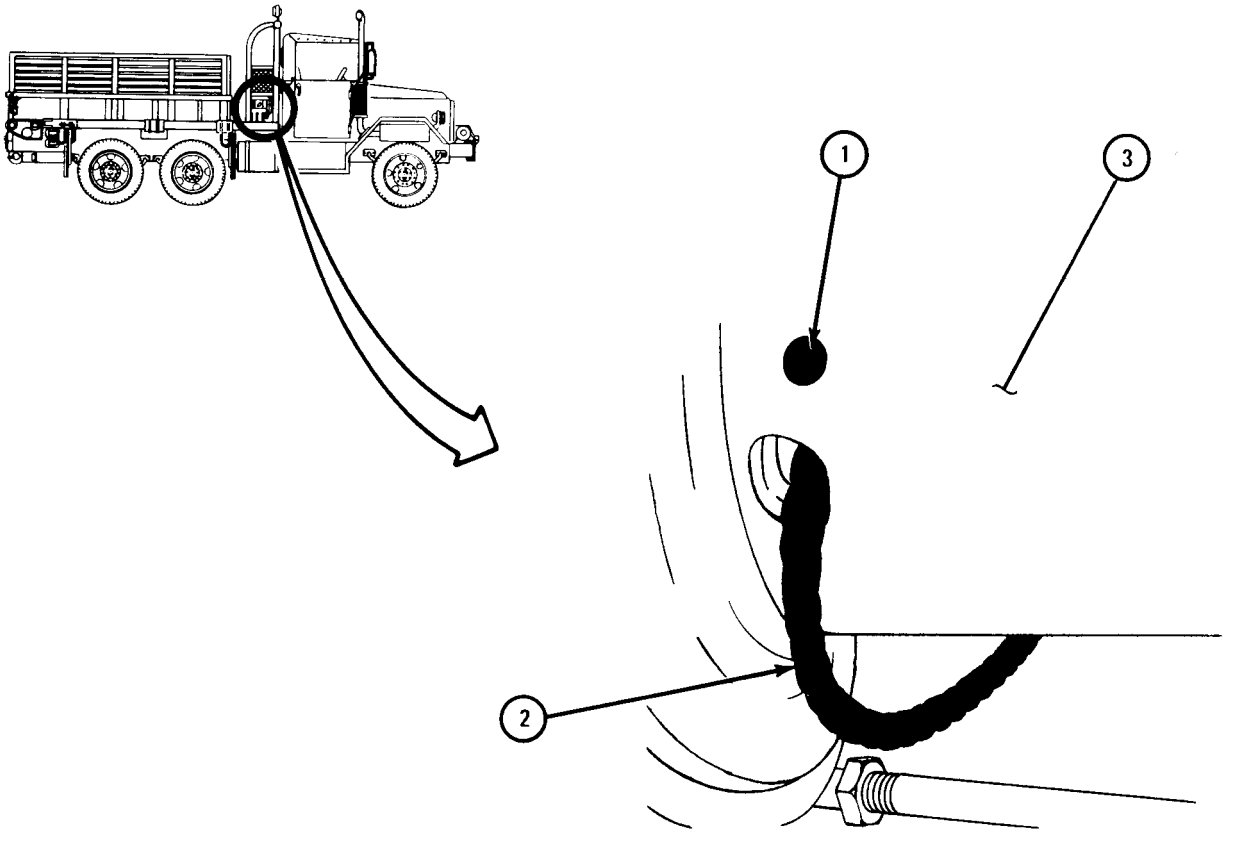
a. Preliminary Procedure. Unwind winch cable to the end. Refer to TM 9-2320-209-10.

b. Removal.

FRAME 1

1. Using 3/8-inch allen wrench, loosen setscrew (1).
2. Pull winch cable (2) out of drum (3) and off truck.

END OF TASK

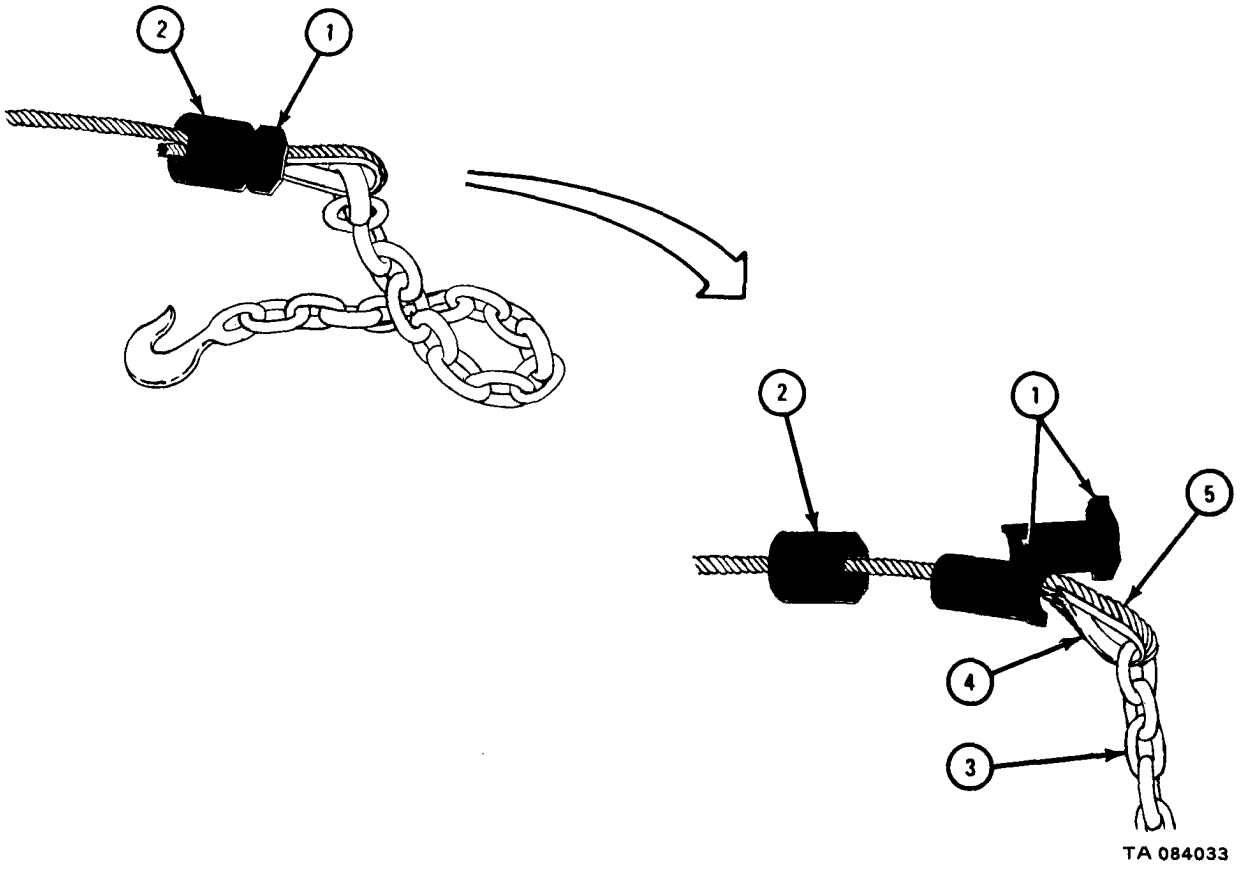


c. Disassembly (Early Model).

FRAME 1

1. Using vise, hold split nut (1).
2. Using adjustable wrench, unscrew and slide back nut (2).
3. Take off both halves of split nut (1).
4. Take off chain (3), thimble (4), and nut (2) from cable (5).

END OF TASK

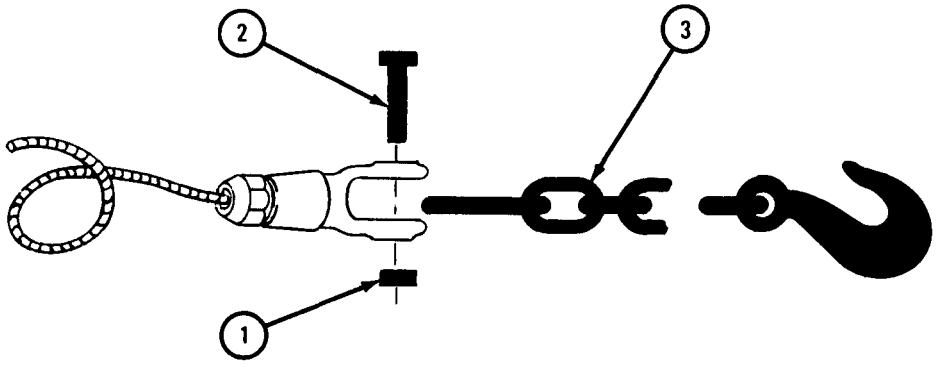


d. Disassembly (Late Model).

FRAME 1

1. Using adjustable wrenches, hold nut (1) and unscrew and take out bolt (2).
2. Take off chain (3).

GO TO FRAME 2

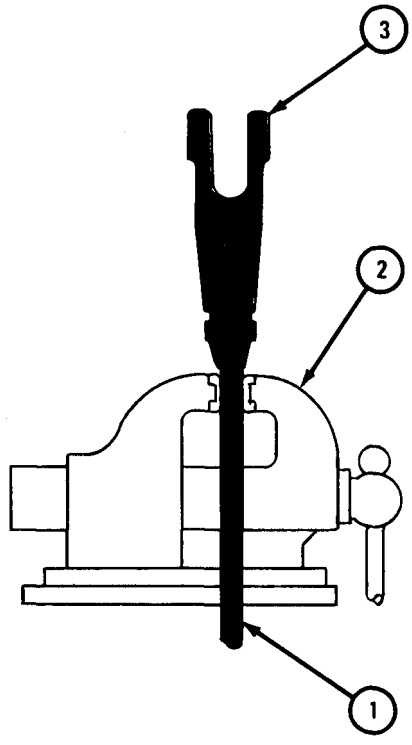


TA 101632

FRAME 2

1. Place cable (1) in vise (2), leaving enough space to cut cable.
2. Using wire cutters, cut cable (1) at base of clevis (3). Take out and throw away clevis. Take cable out of vise (2).

END OF TASK



TA 101633

WARNING

Dry cleaning solvent is flammable. Do not use near an open flame. Keep a fire extinguisher nearby when solvent is used. Use only in well-ventilated places. Failure to do this may result in injury to personnel and damage to equipment.

e. Cleaning. Clean all parts in solvent. Dry with clean rags.

f. Inspection and Repair.

(1) Check that cable is not kinked, frayed or cut. If cable is damaged, cut off damaged part.

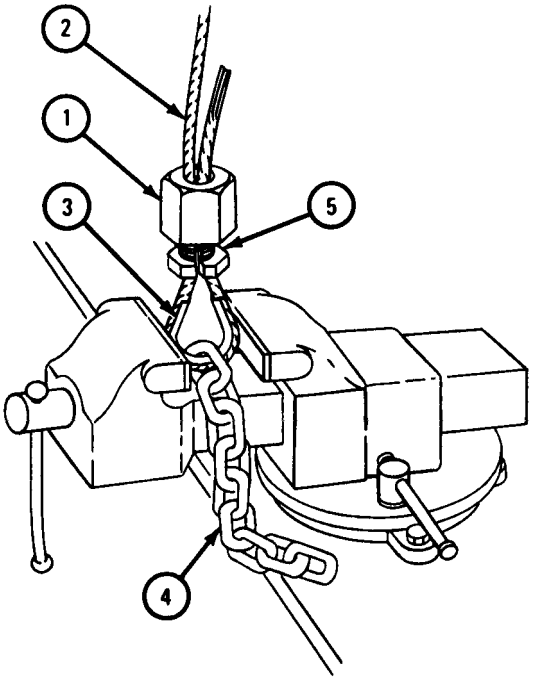
(2) Check that chain and thimble are not damaged. If parts are damaged, throw them away and get new ones.

g. Assembly (Early Model).

FRAME 1

1. Slide nut (1) on cable (2).
2. Put end of cable (2) around thimble (3) and through chain link (4).
3. Make sure that cable (2) is tight around thimble (3).
4. Place loop in vise as shown. Put both halves of split nut (5) in place so that 1/2 inch of cable (2) will stick out from nut (1).
5. Put split nut (5) in vise and press halves of split nut together.
6. Using adjustable wrenches, screw on and tighten nut (1).
7. Check to make sure 1/2 inch of cable is sticking out past nut (1).
8. Take cable (2) from vise.

END OF TASK



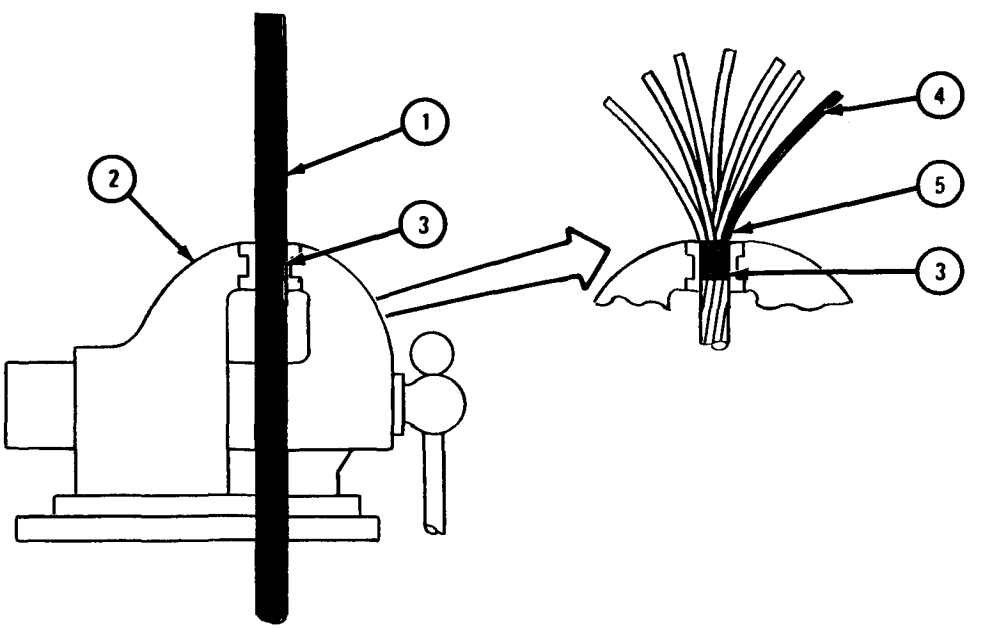
TA 084034

h. Assembly (Late Model).

FRAME 1

1. Clamp cable (1) in vise (2) about six inches from end.
2. Using ruler, measure 4 1/8 inches from cut end of cable (1). Wrap new seizing (3) tightly around cable for 3/4 inch. Tie ends of seizing.
3. Clamp cable (1) in vise (2) around seizing (3).
4. Take off any old seizing and spread cable strands (4).
5. Cut hemp core (5) as close as possible to seizing (3).

GO TO FRAME 2



TA 101634

FRAME 2

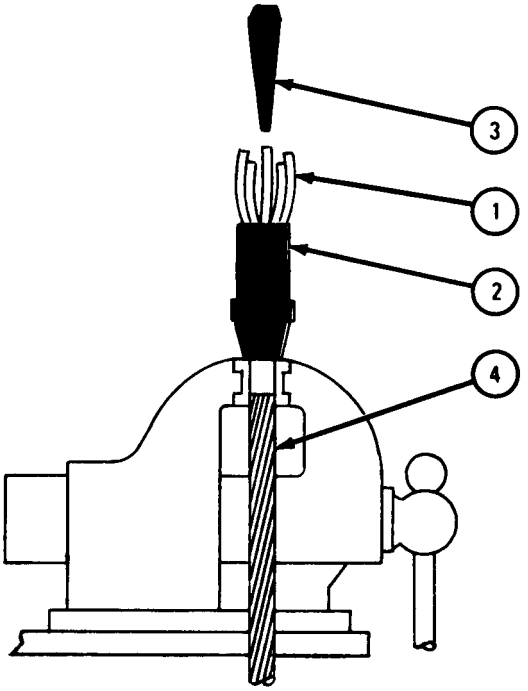
1. Close strands (1) and slide on sleeve (2).

NOTE

Length of strands from end of sleeve (2) to cable end must be about 1 1/2 inches.

2. Spread strands (1) and bend ends inward.
3. Put plug (3) through center of strands (1) into sleeve (2). Using hammer, drive plug to solid seat and close strands over top of plug.
4. Take cable (4) out of vise.

GO TO FRAME 3

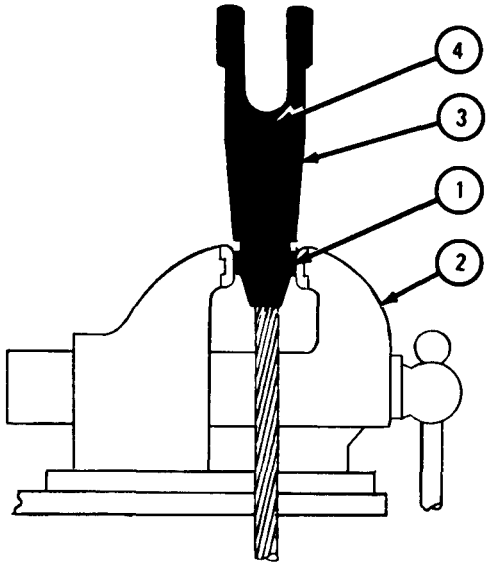


TA 101635

FRAME 3

1. Clamp lower end of sleeve (1) in vise (2).
2. Slide socket (3) over strands and sleeve (1). Using adjustable wrench, screw socket securely to sleeve. Socket will not screw all the way down.
3. Check inspection hole (4). Strands should be seen. If they are not seen, using adjustable wrench, unscrew socket (3), straighten strands, and do steps 1 and 2 again.
4. Take sleeve (1) out of vise (2).

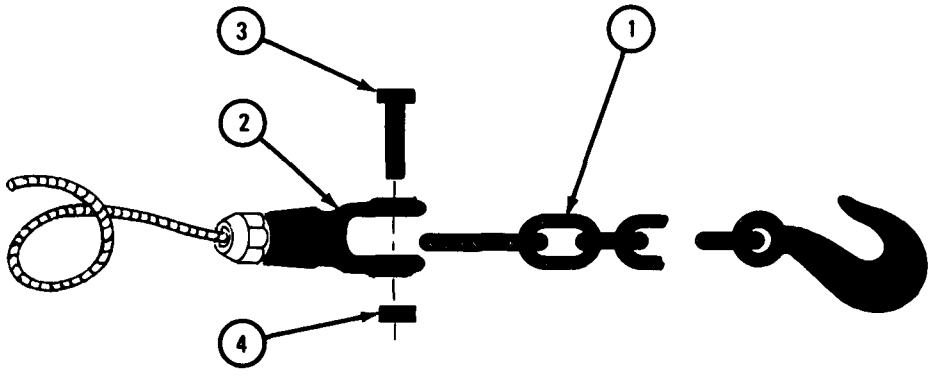
GO TO FRAME 4



TA 101636

1. Put end link of chain (1) in clevis (2).
2. Put bolt (3) through clevis (2) and end link of chain (1).
3. Using adjustable wrenches, hold bolt (3) and screw on and tighten nut (4).

END OF TASK



TA 101637

i. Replacement.

FRAME 1

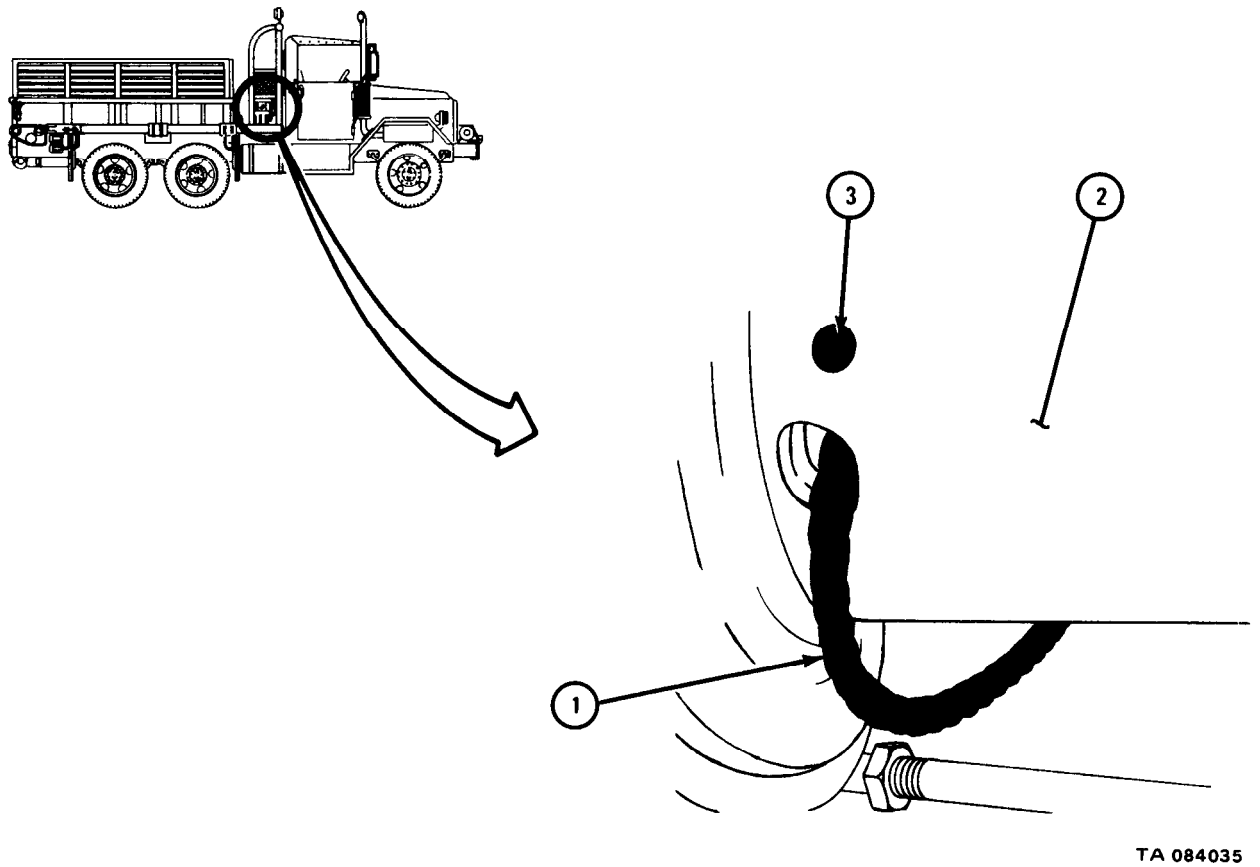
1. Put end of cable (1) in hole in winch drum (2).
2. Using 3/8-inch allen wrench, screw in and tighten setscrew (3).

NOTE

Follow-on Maintenance Action Required:

1. Lubricate winch cable. Refer to LO 9-2320-209-12/1.
2. Wind winch cable on winch. Refer to TM 9-2320-209-10.

END OF TASK



19-11. REAR WINCH CABLE REMOVAL AND REPLACEMENT (TRUCK M764).

TOOLS: Breaker bar
Extension
Screwdriver attachment
Wood block, 2 x 4 x 24 inches

SUPPLIES: None

PERSONNEL: Two

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Preliminary Procedure. Remove rear winch cable chain assembly. Refer to para 19-10.

WARNING

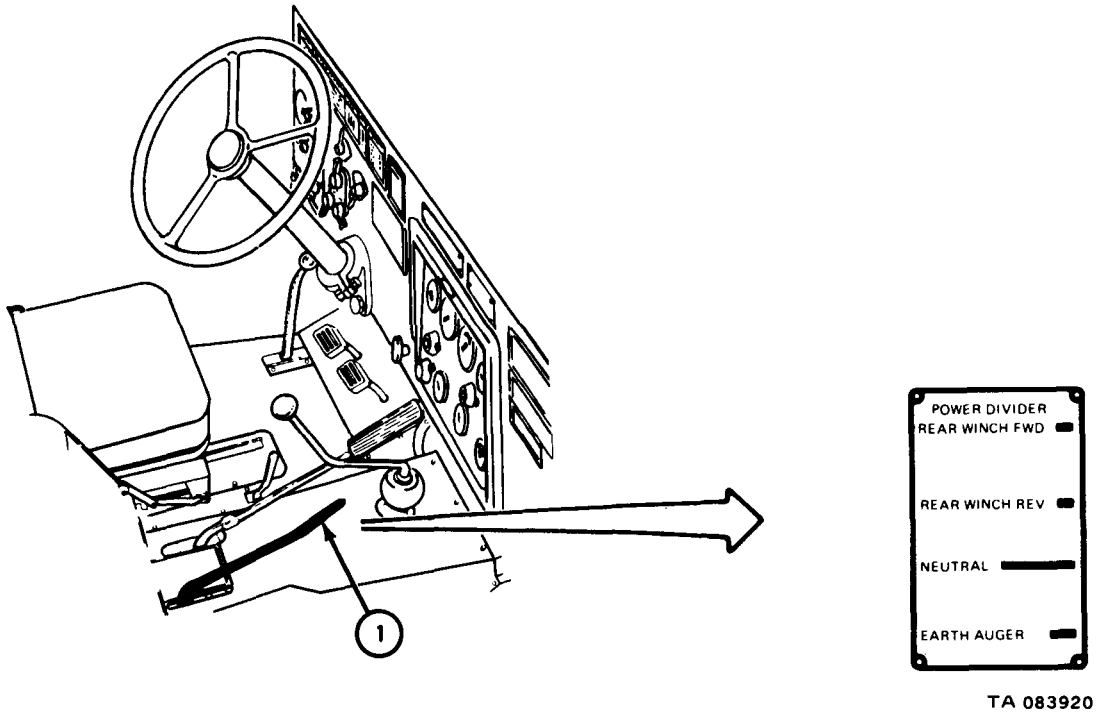
Always wear heavy leather gloves when handling cable. Do not let cable run through hands. Broken or rusty wire can cause serious injury to personnel.

b. Removal.

FRAME 1

Soldier A 1. Working in cab, start engine. Refer to TM 9-2320-209-10. Pull power divider lever (1) back to REAR WINCH REV position.

GO TO FRAME 2



FRAME 2

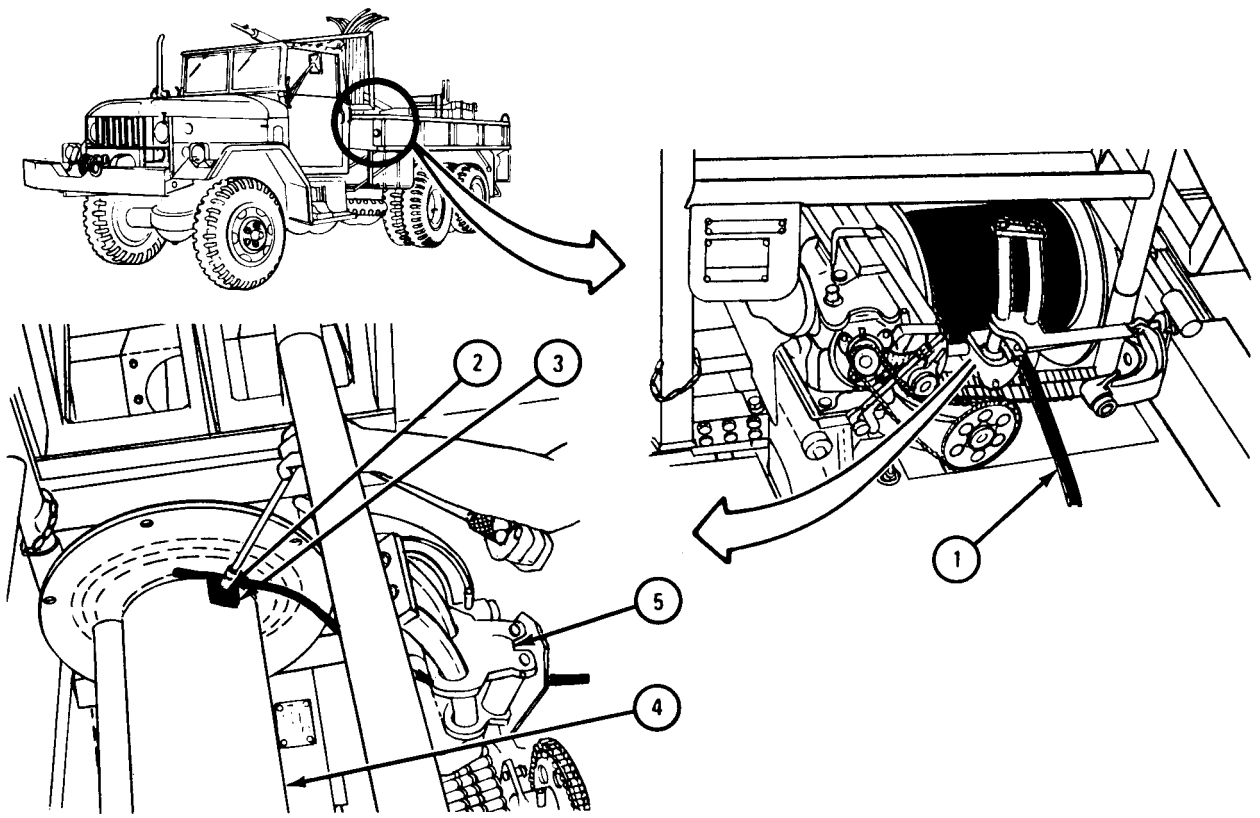
Soldier B 1. Working in back of truck, pull winch cable (1) out all the way.

Soldier A 2. Stop engine. Refer to TM 9-2320-209-10.

Soldier B 3. Using breaker bar, extension, and screwdriver attachment, unscrew and take out screw (2) and clamp (3).

4. Pull winch cable (1) off drum (4) and through level winder (5).

END OF TASK



TA 083921

c. Replacement.

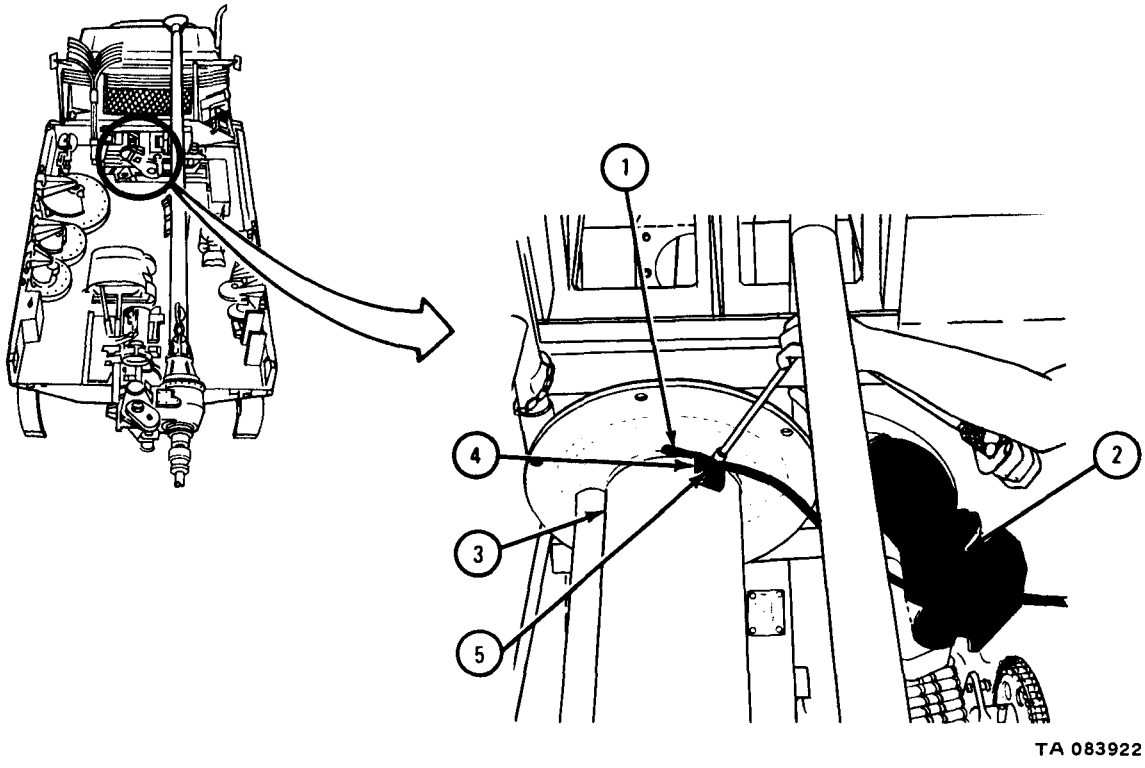
FRAME 1

NOTE

Before putting cable on drum, check that cable winder carriage has reached end of travel towards end of drum. End point of travel is when carriage guide pin in center of vertical slot in carriage is outside of cross chain sprocket.

1. Put end of cable (1) through level winder (2) and put it in place on drum (3).
2. Put clamp (4) on cable (1) and using breaker bar, extension, and screwdriver attachment, screw in and tighten screw (5).

GO TO FRAME 2



FRAME 2

NOTE

Check that first layer of cable coils are close together. If needed, use a block of wood to hammer or push cable coils together.

Soldier A 1. Working in cab, start engine. Refer to TM 9-2320-209-10. Put power divider lever (1) in REAR WINCH FWD position when soldier B is ready.

Soldier B 2. Working in back of truck, hold tension on winch cable (2). Tell soldier A to start winch. Wind up cable in drum (3).

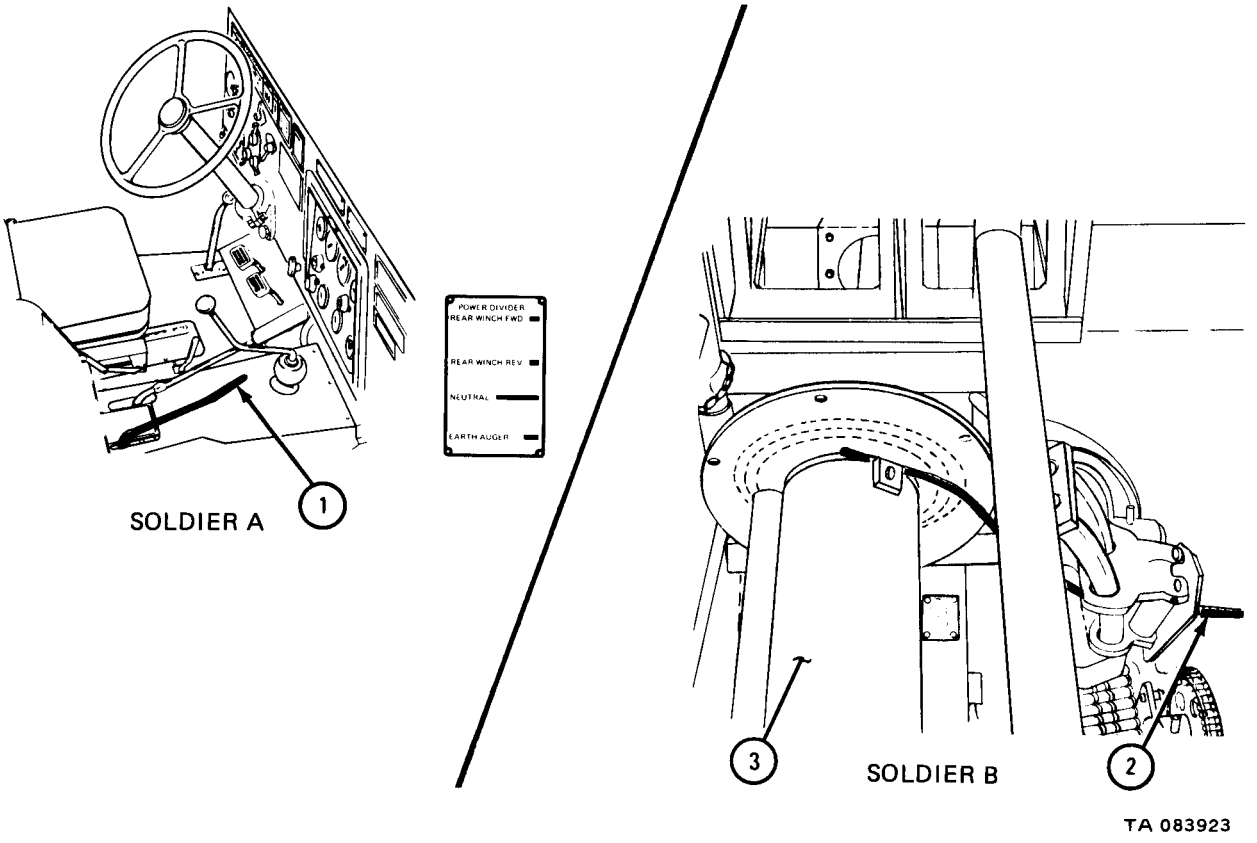
Soldier A 3. Stop engine. Refer to TM 9-2320-209-10.

NOTE

Follow-on Maintenance Action Required:

Replace rear winch cable chain assembly. Refer to para 19-10.

END OF TASK



19-12. REAR WINCH ASSEMBLY WORM GEAR HOUSING OIL DRAIN TUBE REMOVAL, CLEANING, INSPECTION, REPAIR AND REPLACEMENT (TRUCK M764).

TOOLS: Open end wrench set, pn GGG-W-636
One-gallon drain pan

SUPPLIES: Lubricating oil, GO 80/90, MIL-L-2105
Solvent, dry cleaning, type II (SD-2), Fed. Spec P-D-680
Clean dry rags

PERSONNEL: One

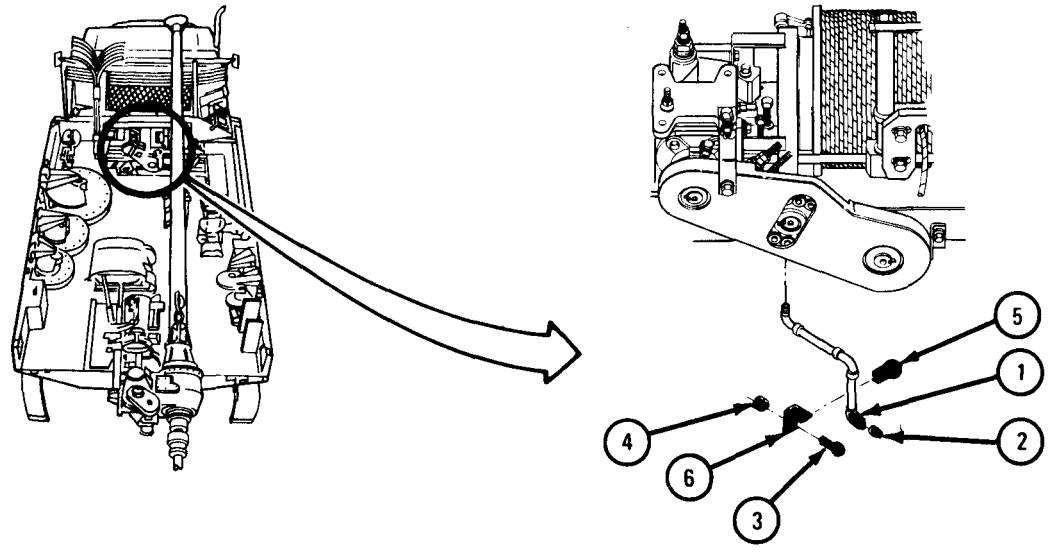
EQUPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Removal.

FRAME 1

1. Put drain pan under elbow (1).
2. Using wrench, unscrew and take out pipe plug (2). Let oil drain into drain pan.
3. Using wrenches, unscrew and takeout screw (3), nut (4), clamp (5), and bracket (6).

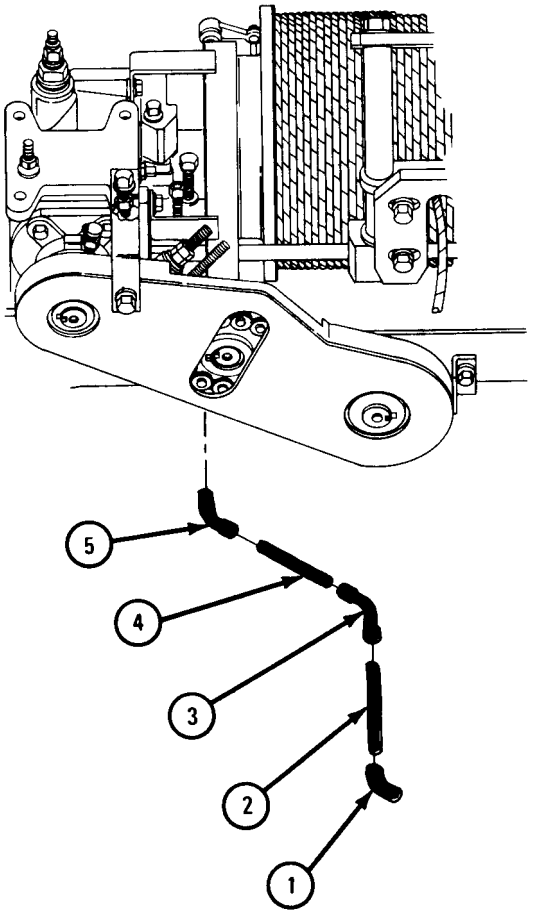
GO TO FRAME 2



FRAME 2

1. Unscrew and take off elbow (1), pipe nipple (2), elbow (3), pipe nipple (4), and elbow (5).

END OF TASK



TA 104752

WARNING

Dry cleaning solvent is flammable. Do not use near an open flame. Keep a fire extinguisher nearby when solvent is used. Use only in well-ventilated places. Failure to do this may result in injury to personnel and damage to equipment.

b. Cleaning. Clean all parts with dry cleaning solvent. Dry parts using clean dry rags.

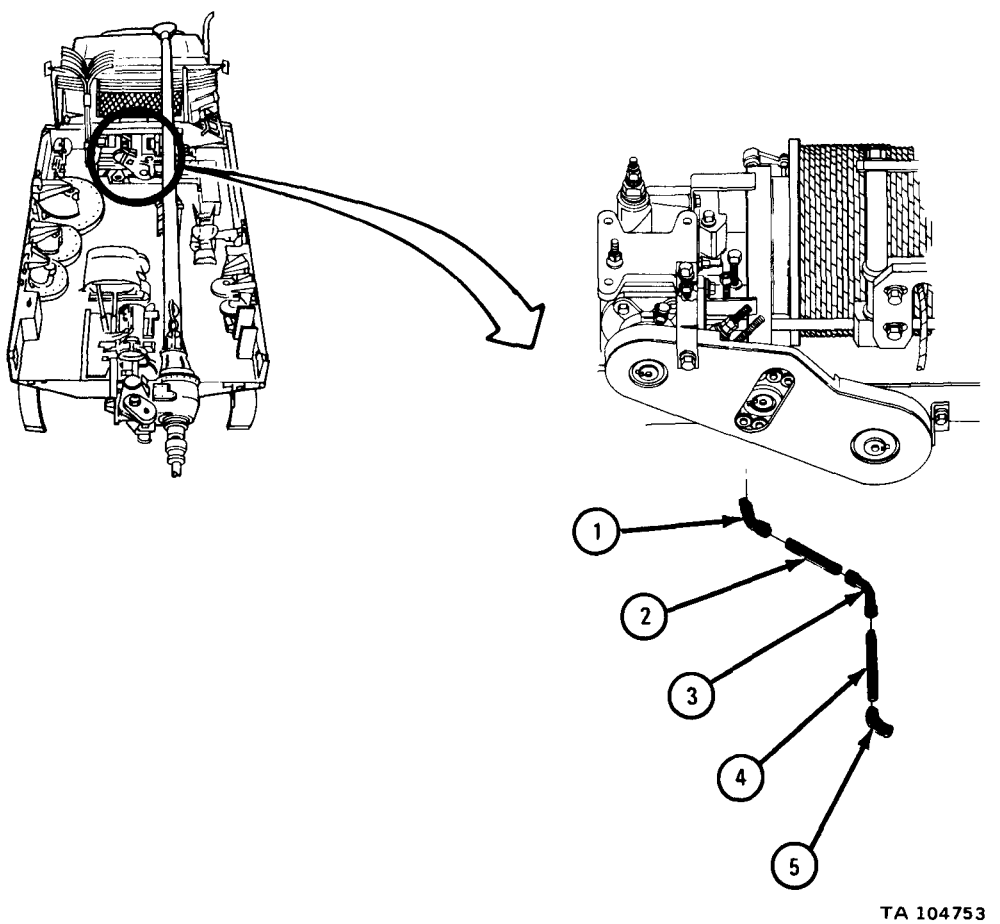
c. Inspection and Repair. Check that all parts are not cracked or broken and that threaded parts are not damaged. If parts are damaged, get new ones.

d. Replacement.

FRAME 1

1. Screw on elbow (1), pipe nipple (2), elbow (3), pipe nipple (4), and elbow (5).

GO TO FRAME 2



FRAME 2

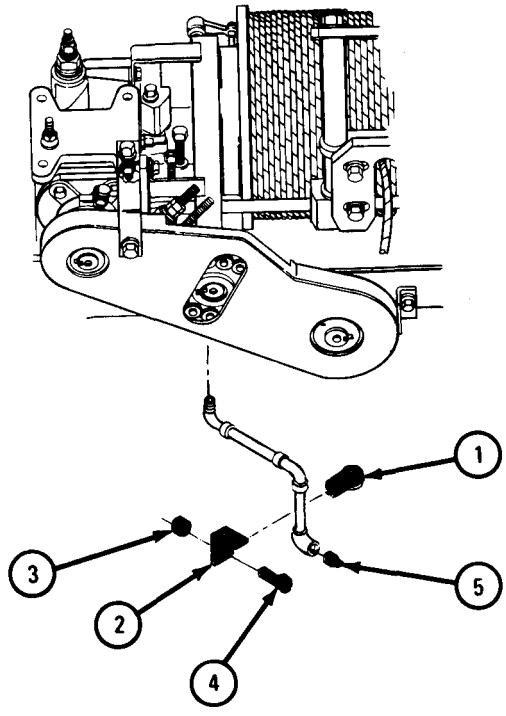
1. Put clamp (1) and bracket (2) in place.
2. Using wrenches, screw on and tighten nut (3) and screw (4).
3. Using wrench, screw on and tighten pipe plug (5).

NOTE

Follow-on Maintenance Action Required:

Fill rear winch worm gear housing. Refer to LO 9-2320-209-12/1.

END OF TASK



TA 104754

19-13. REAR WINCH DRIVE CHAIN REMOVAL, REPAIR AND REPLACEMENT (TRUCK M756A2).

TOOLS: Needle nose pliers
Flat-tip screwdriver

SUPPLIES: Solvent, dry cleaning, type II (SD-2), Fed. Spec P-D-680

PERSONNEL: One

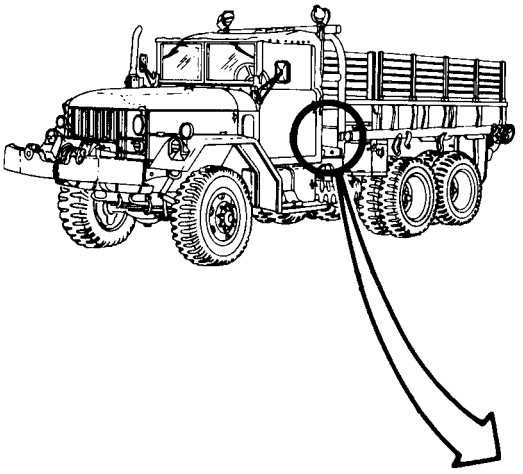
EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

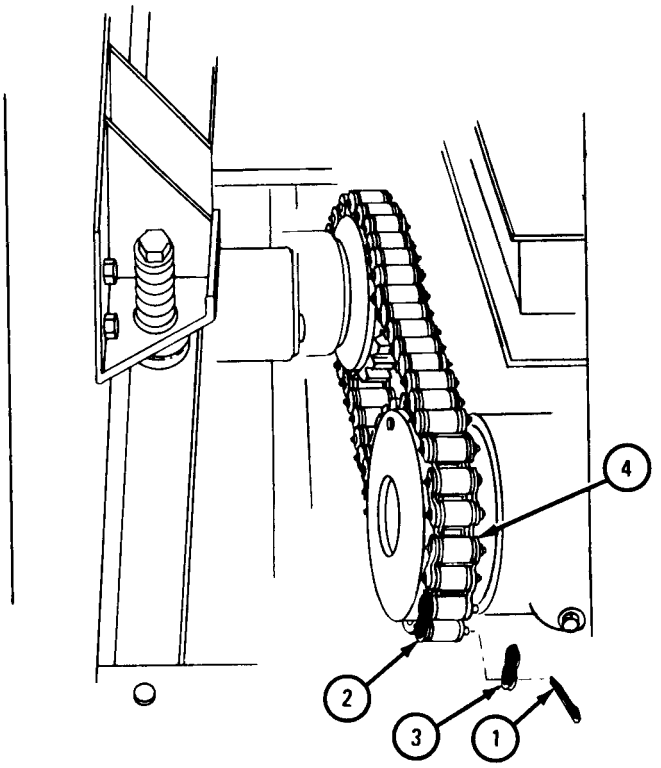
a. Removal.

FRAME 1

1. Using pliers, pull out and throw away cotter pin (1) from each of two pins in master link (2).
2. Using screwdriver, take off master link cap (3) from master link (2).
3. Take out master link (2).
4. Take off drive chain (4).

END OF TASK





TA 080906

WARNING

Dry cleaning solvent inflammable. Do not use near an open flame. Keep a fire extinguisher nearby when solvent is used. Use only in well-ventilated places. Failure to do this may result in injury to personnel and damage to equipment.

b. Cleaning. Clean chain in solvent.

c. Inspection and Repair. Check that chain has no cracks or breaks and that it is not worn. If chain is damaged, get a new one.

d. Replacement.

FRAME 1

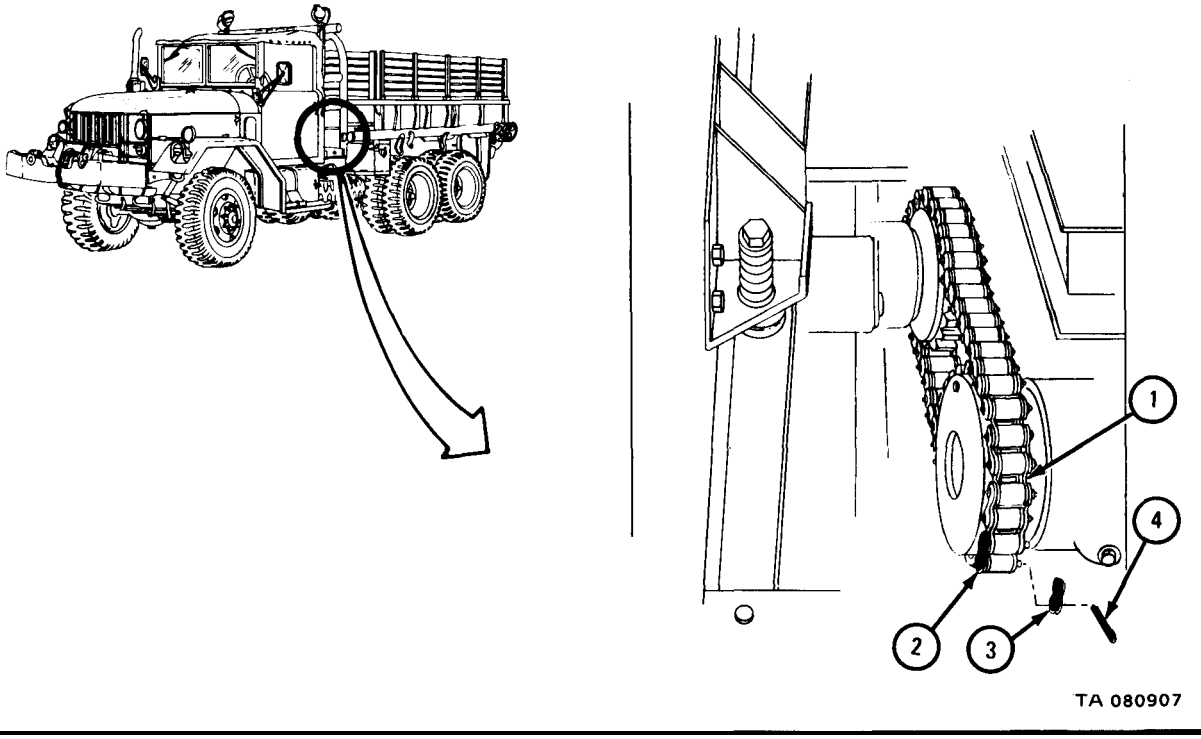
1. Put drive chain (1) in place.
2. Put two pins on master link (2) through ends of chain (1).
3. Put on master link cap (3).
4. Using pliers, put cotter pin (4) in each pin in master link (2) and bend open ends of cotter pin.

NOTE

Follow-on Maintenance Action Required:

Adjust drive chain. Refer to para 19-14.

END OF TASK



19-14. REAR WINCH DRIVE CHAIN ADJUSTMENT (TRUCK M756A2).

TOOLS: 1/2-inch wrench (2)
15/16-inch socket
6-inch ruler
Drill
15/16-inch wrench
Breaker bar
Prybar
6-inch extension

SUPPLIES: None

PERSONNEL: One

EQUIPMENT Condition: Truck parked, engine off, handbrake set.

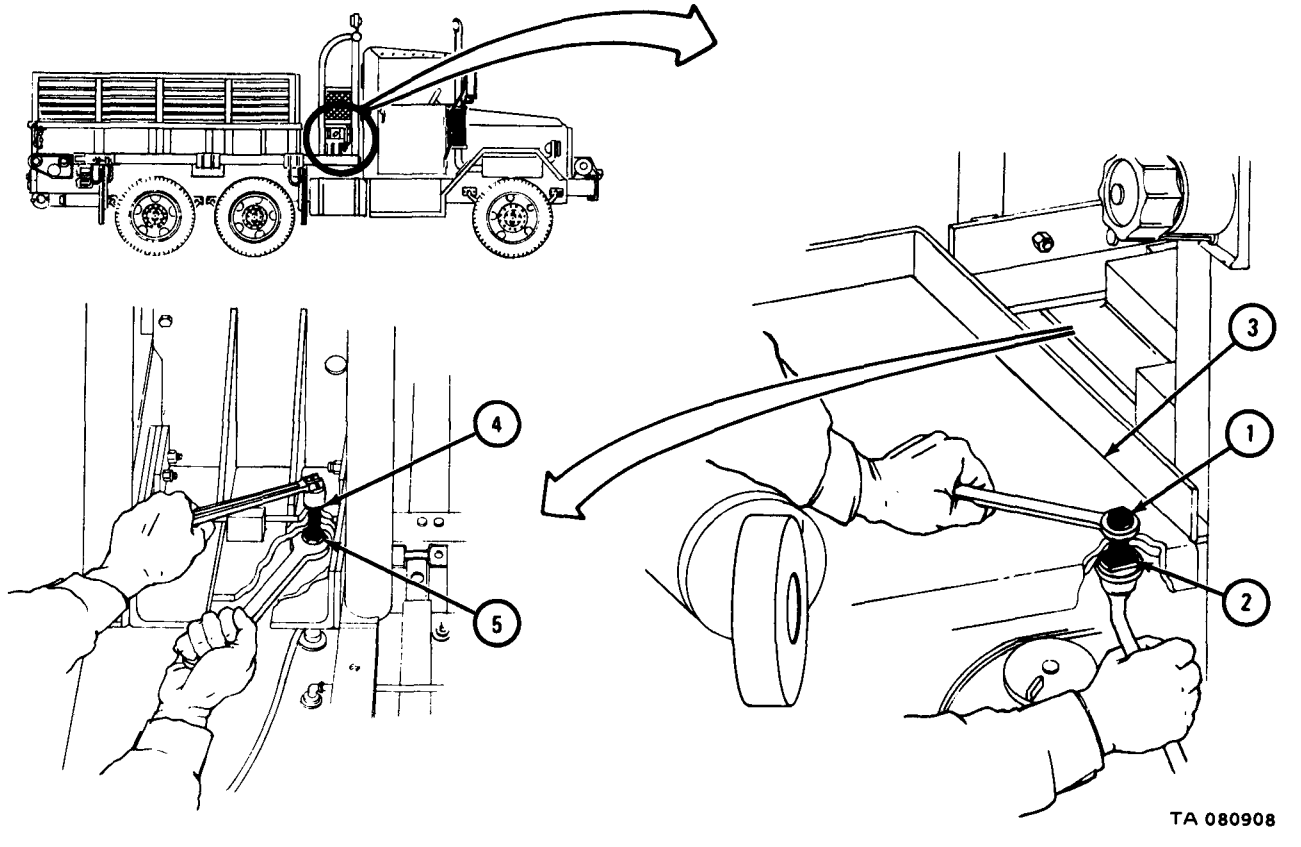
a. Preliminary Procedure. Pull both gin poles away from truck. Refer to TM 9-230-209-10.

b. Adjustment.

FRAME 1

1. Using 1/2-inch wrenches, unscrew and take out four screws (1) and nuts (2).
2. Take off floor plate (3).
3. Using 15/16-inch wrench, breaker bar, and 15/16-inch socket, loosen six screws (4) and nuts (5).

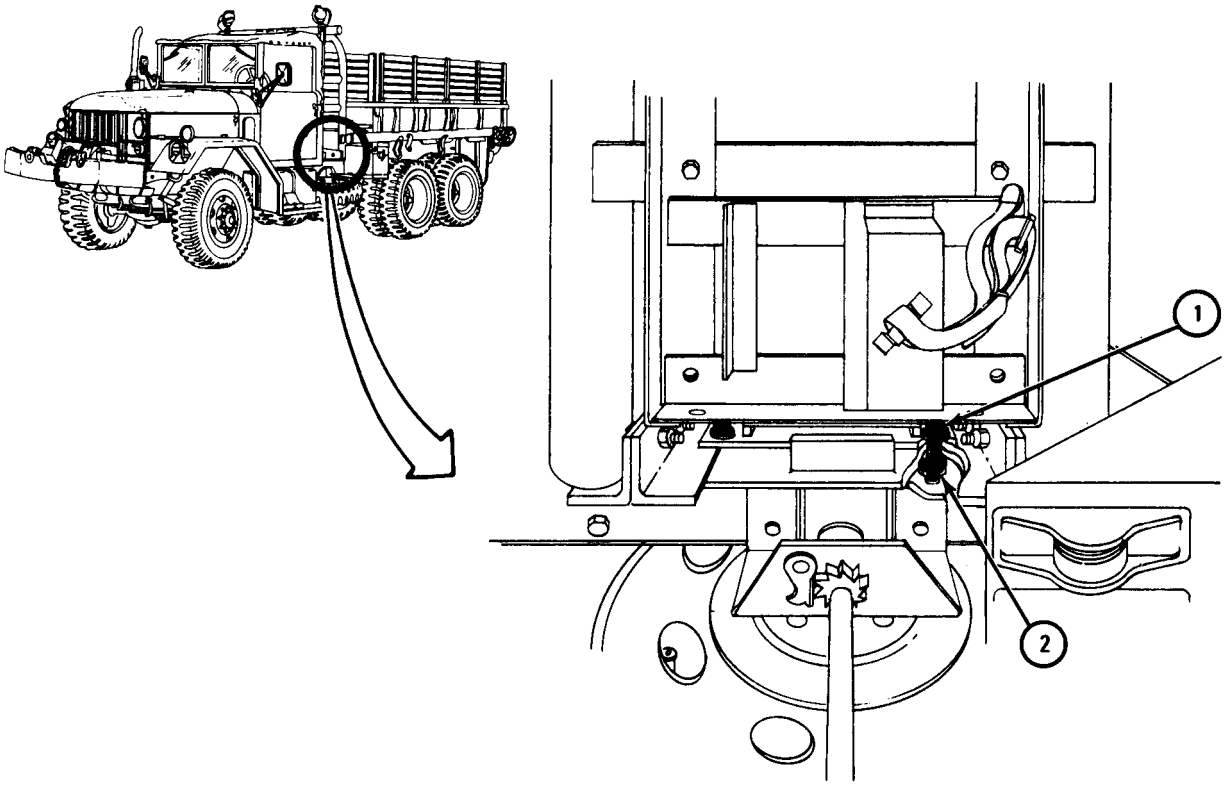
GO TO FRAME 2



FRAME 2

1. Using 15/16-inch wrench, breaker bar, and 15/16-inch socket, loosen eight screws (1) and nuts (2).

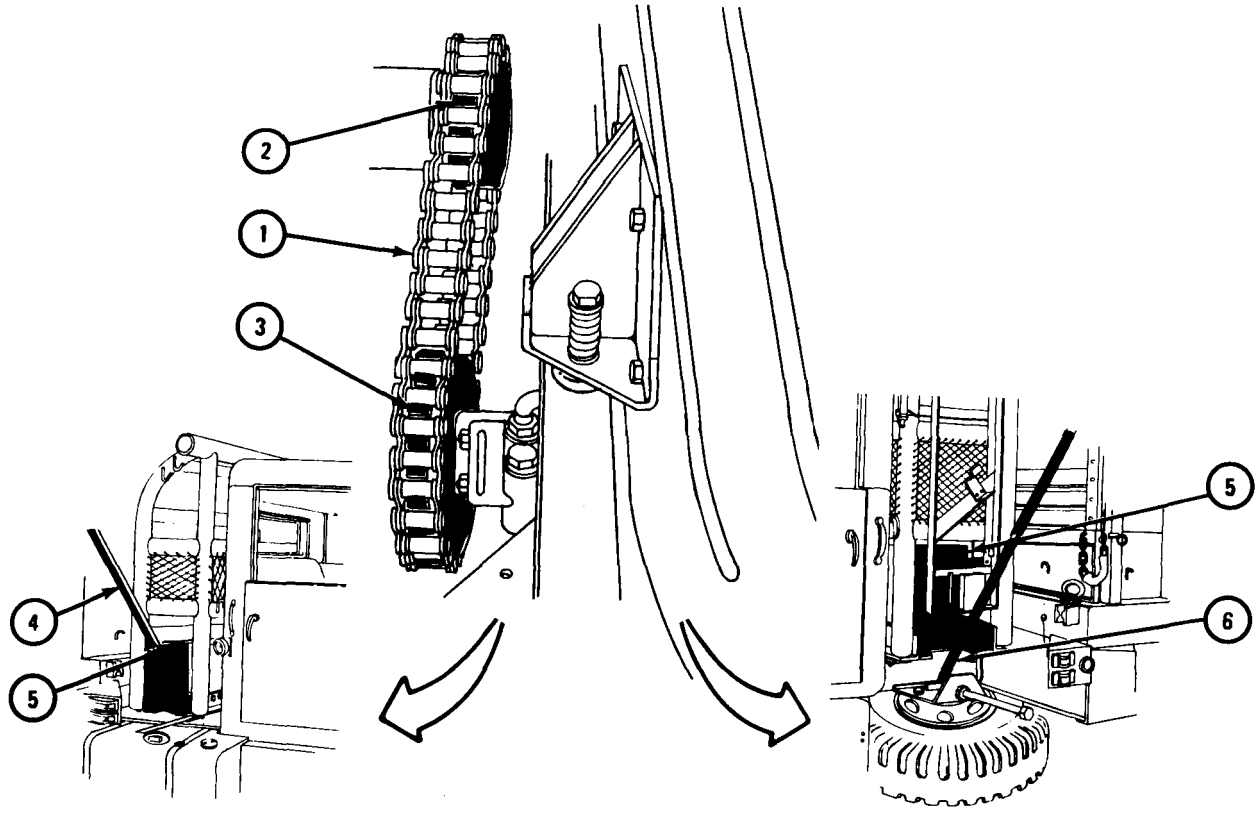
GO TO FRAME 3



FRAME 3

1. Using 6-inch ruler, measure slack in drive chain (1) at midpoint between two sprockets (2 and 3). If slack is 1/2 inch, adjustment is correct.
2. If there is too much slack in drive chain (1), using prybar (4) as shown, push winch assembly (5) to the left. If there is not enough slack in drive chain, using prybar (6) as shown, push winch assembly (5) to the right.
3. After adjusting winch assembly (5), do step 1 again to check adjustment.

GO TO FRAME 4

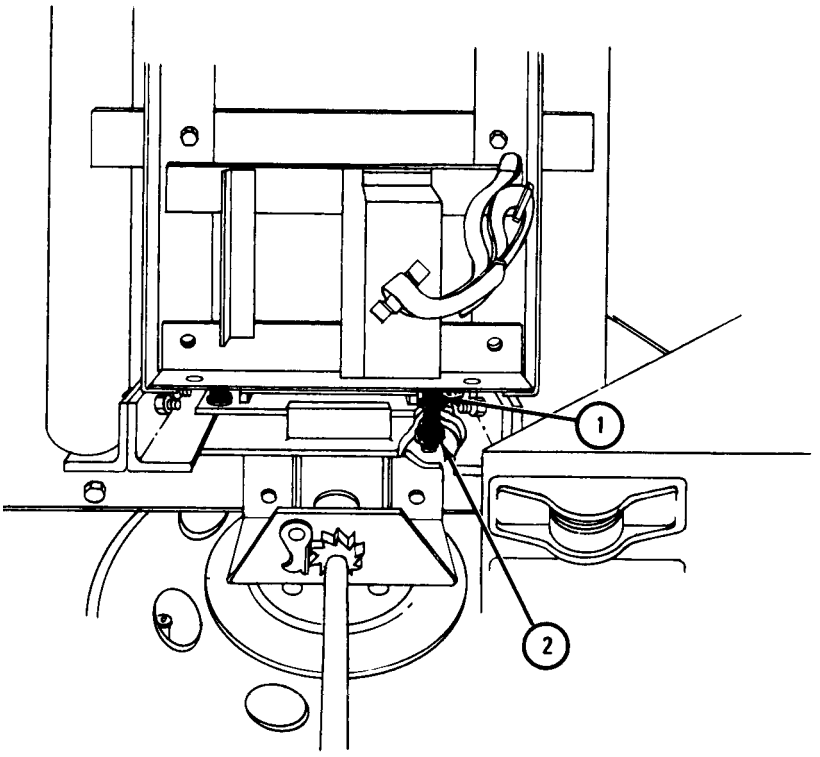


TA 080910

FRAME 4

1. Using 15/16-inch wrench, breaker bar, and 15/16-inch socket, tighten eight screws (1) and nuts (2).

GO TO FRAME 5

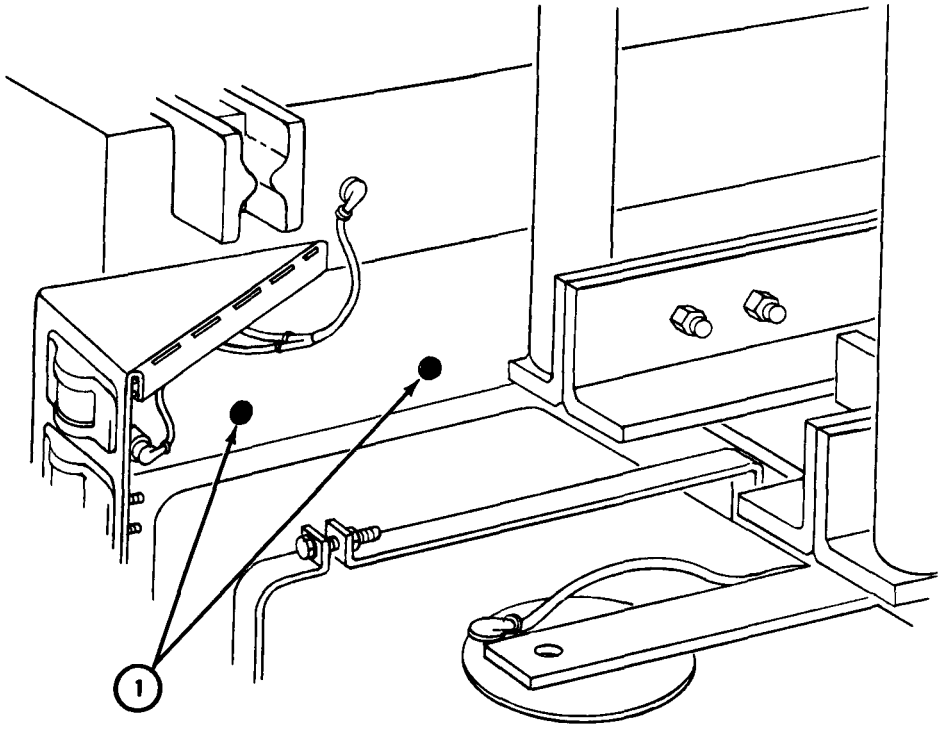


TA 080911

FRAME 5

1. If the winch drive chain has been adjusted, using drill, slot two screw holes (1) to the right or left as needed.

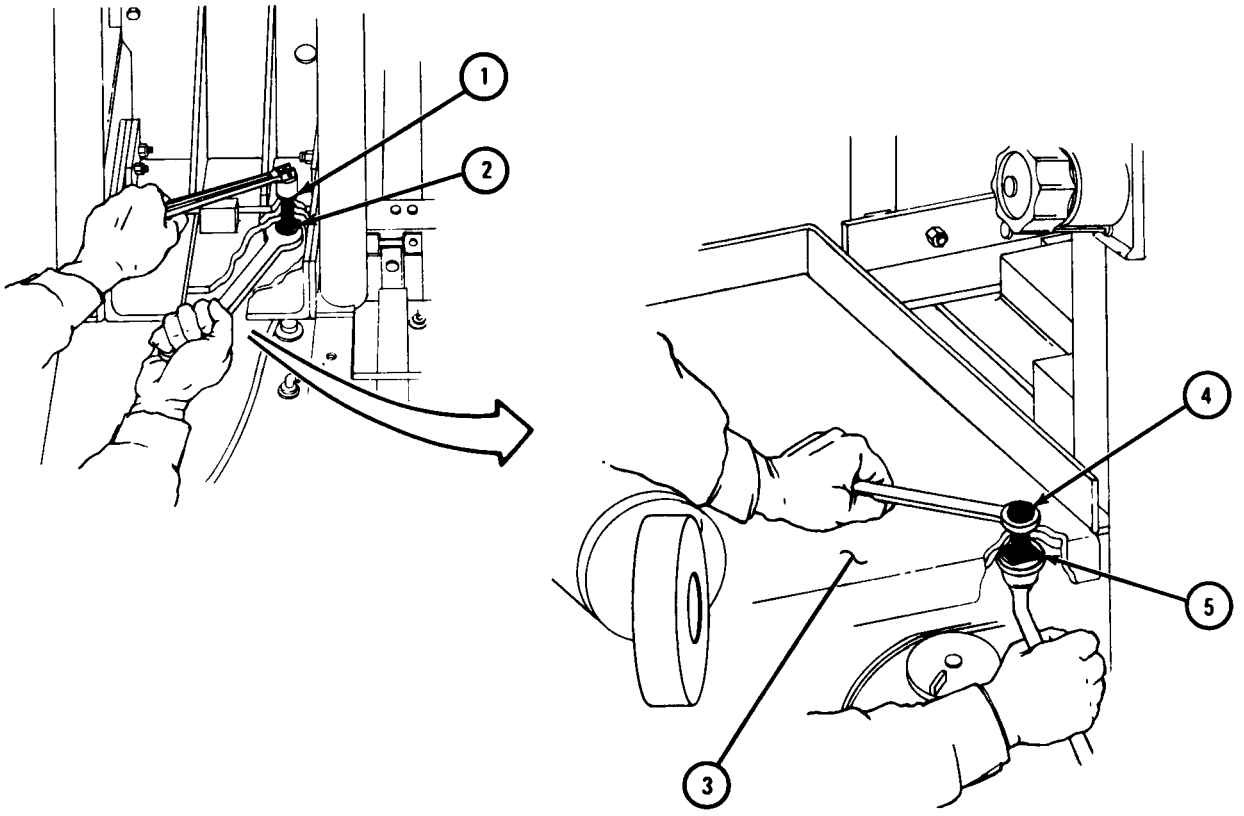
GO TO FRAME 6



FRAME 6

1. Using 15/16-inch wrench, breaker bar, and 15/16-inch socket, tighten six screws (1) and nuts (2).
2. Put floor plate (3) in place.
3. Using 1/2-inch wrenches, screw in and tighten four screws (4) and nuts (5).

END OF TASK



19-15. CARRIAGE CROSS CHAIN REMOVAL AND REPLACEMENT (TRUCK M764).

TOOLS: 1/2-inch wrench
Breaker bar
3/4-inch socket
Socket extension
3/4-inch wrench
15/16-inch wrench (2)
Hammer
Flat-tip screwdriver

SUPPLIES: None

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

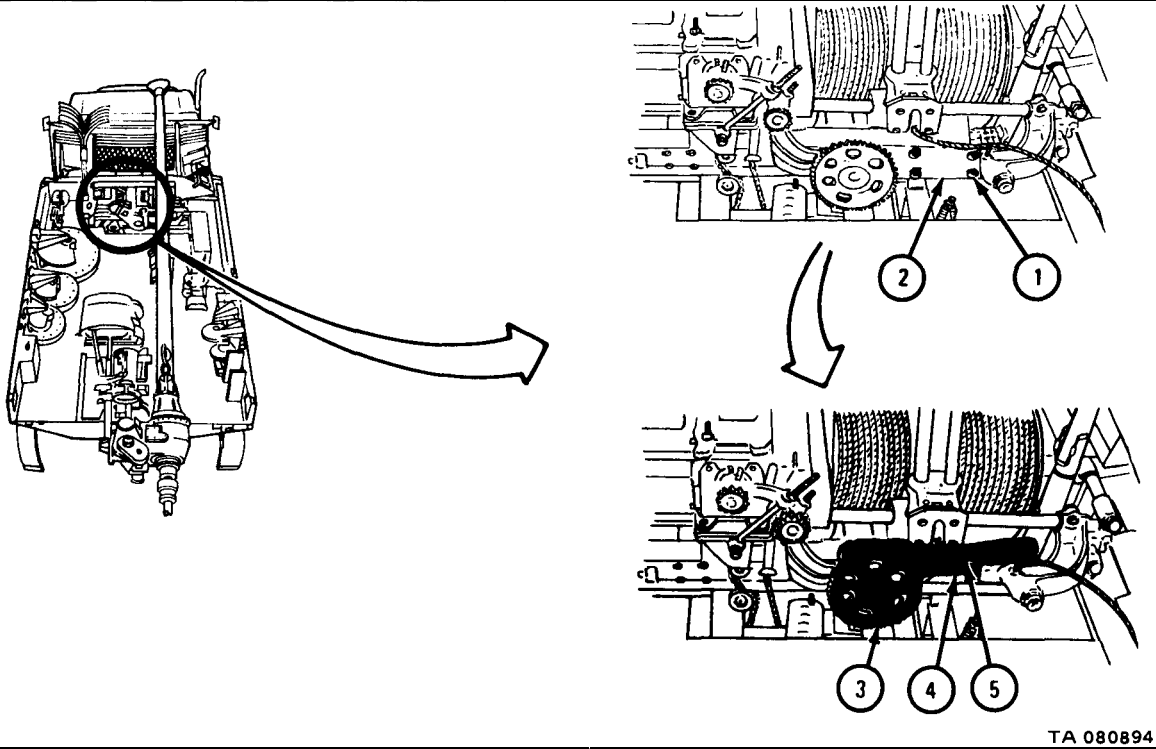
a. Preliminary Procedure. Remove secondary reduction drive chain. Refer to para 19-17.

b. Removal.

FRAME 1

1. Using 1/2-inch wrench, unscrew and take out four screws, washers, and lockwashers (1) from cross chain cover (2).
2. Take off cross chain cover (2).
3. Turn sprocket (3) until you find connecting link (4) in cross chain (5).

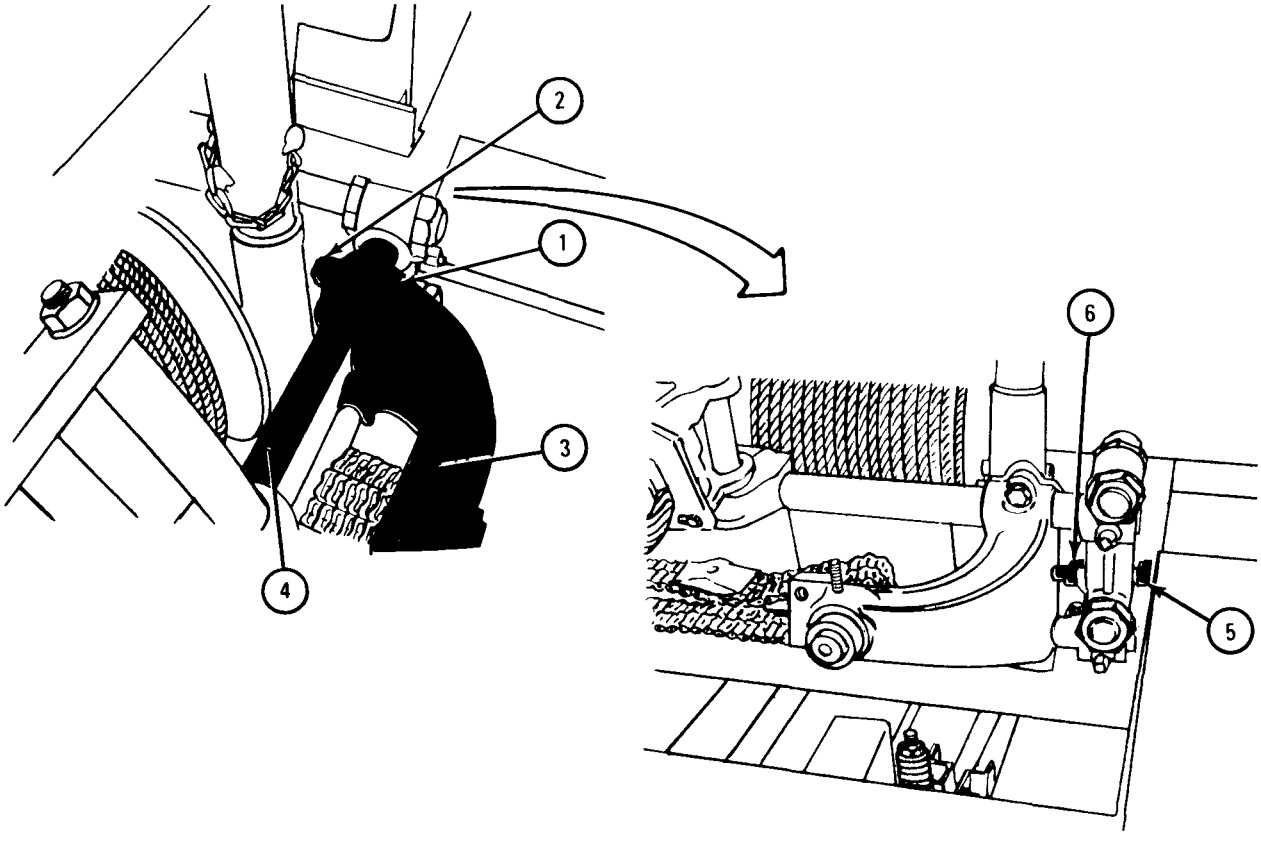
GO TO FRAME 2



FRAME 2

1. Using breaker bar, 3/4-inch socket, extension, and 3/4-inch wrench, loosen two screws (1) and nuts (2) holding cross chain bracket (3) to tie rod (4).
2. Using 15/16-inch wrenches, loosen adjusting screw (5) and locknut (6) on right side of cross bracket (3).

GO TO FRAME 3

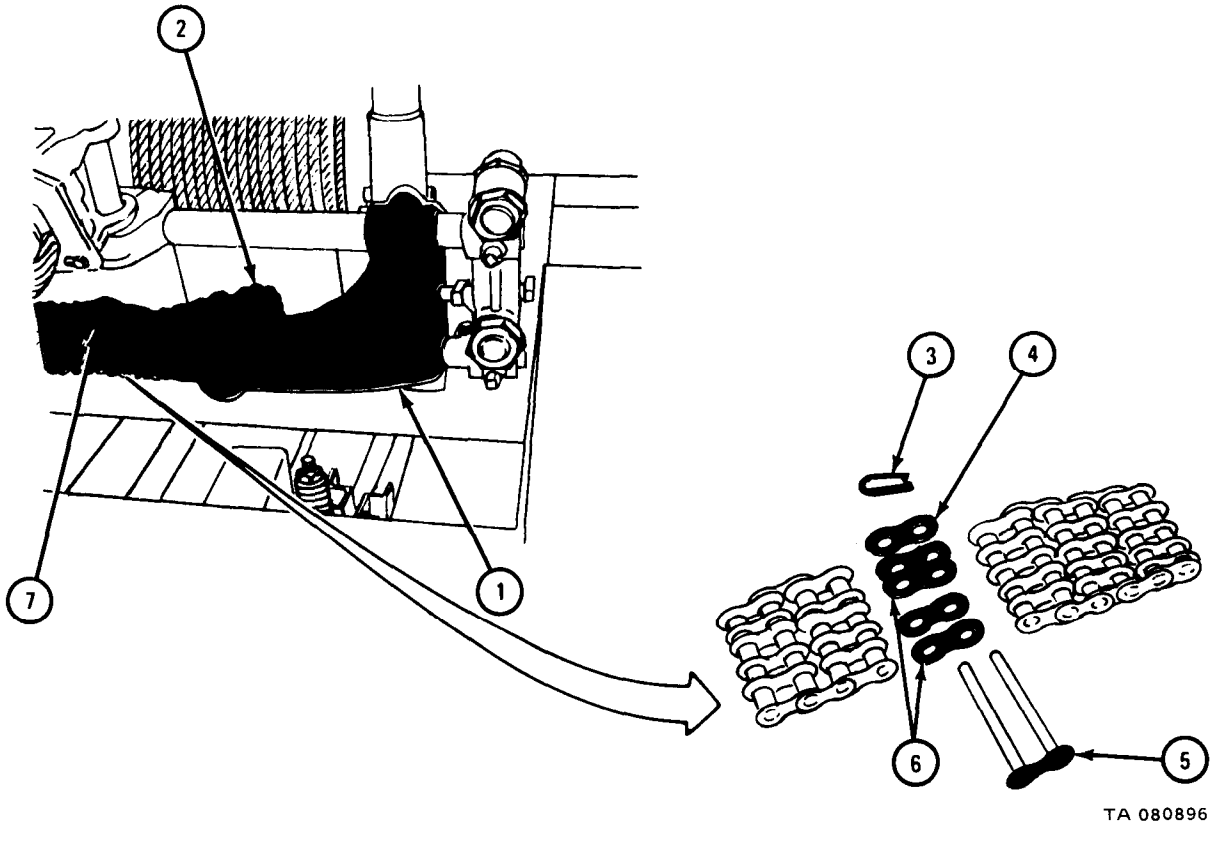


TA 080895

FRAME 3

1. Using hammer, tap cross chain bracket (1) toward chain (2) to take tension off chain.
2. Using screwdriver, pry off clip (3). Take off keeper (4).
3. Put hand under connecting link (5) to catch four spacers (6).
4. Take out connecting link (5) and four spacers (6).
5. Take out chain (2) with chain guide (7).

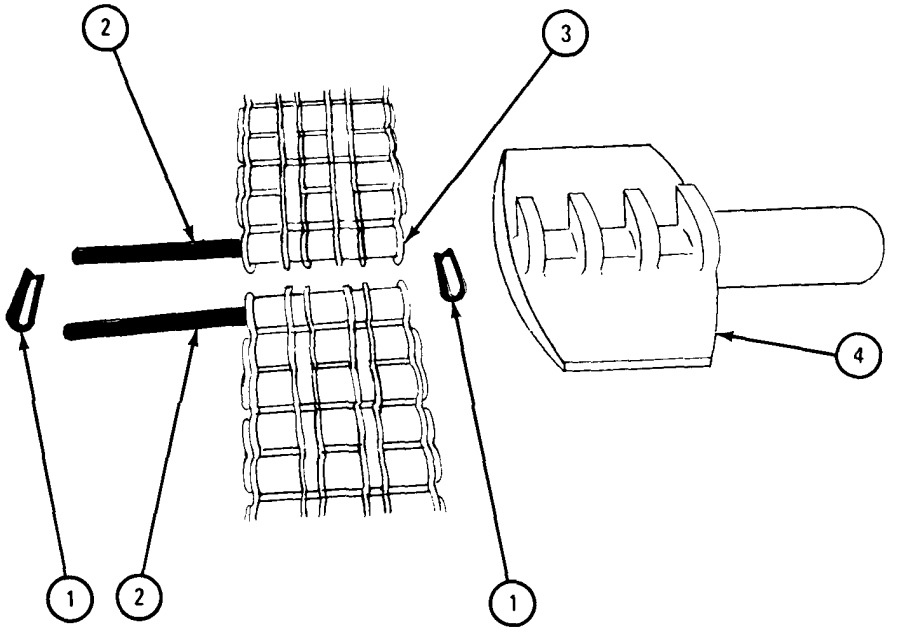
GO TO FRAME 4



FRAME 4

1. Using screwdriver, pry off two clips (1).
2. Take out two pins (2).
3. Take ends of chain (3) out of chain guide (4).

END OF TASK



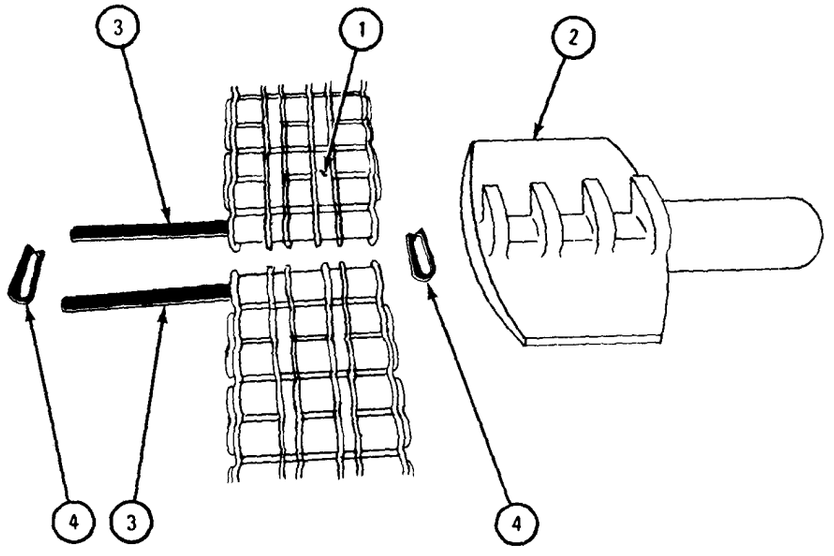
TA 080897

c. Replacement.

FRAME 1

1. Put ends of chain (1) in place in chain guide (2) and aline holes.
2. Put two pins (3) through chain (1) and chain guide (2).
3. Put on two clips (4).

GO TO FRAME 2

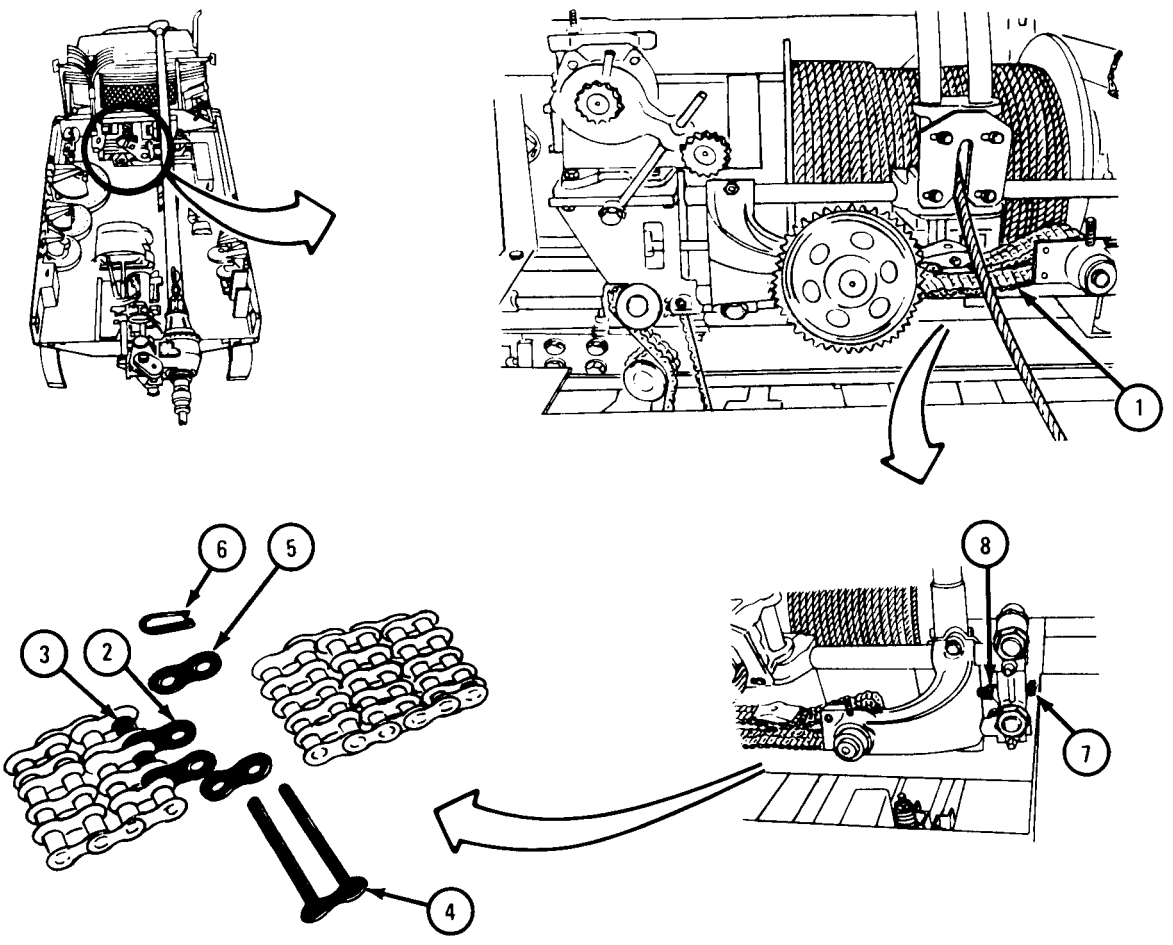


TA 080898

FRAME 2

1. Put chain (1) in place as shown.
2. Put four spacers (2) in place between two chain rollers (3) as shown.
3. Aline holes and put connecting link (4) in place.
4. Put on keeper (5) and clip (6).
5. Using 15/16-inch wrench, tighten screw (7) to put tension on chain (1).
6. Using 15/16-inch wrenches, hold screw (7) and tighten locknut (8).

GO TO FRAME 3



TA 080899

FRAME 3

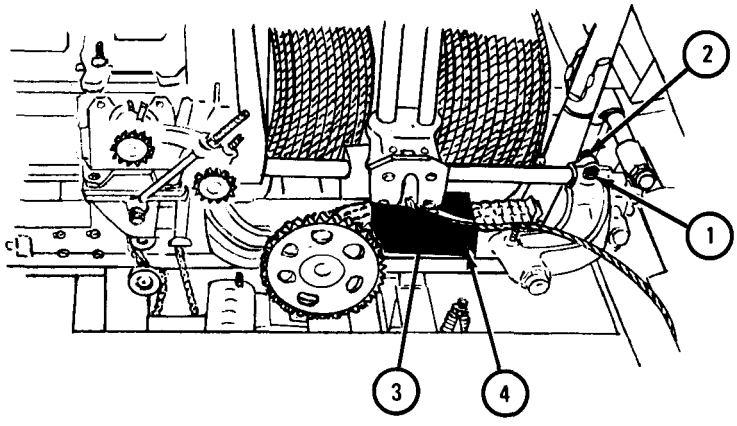
1. Using 3/4-inch socket and wrench, tighten bolt (1) and nut (2).
2. Put cross chain cover (3) in place.
3. Using 1/2-inch wrench, screw in and tighten four screws, washers, and lock-washers (4).

NOTE

Follow-on Maintenance Action Required:

1. Adjust carriage travel. Refer to para 19-16.
2. Replace secondary reduction drive chain. Refer to para 19-17.

END OF TASK



TA 080900

19-16. CARRIAGE TRAVEL ADJUSTMENT (TRUCK M764).

TOOLS: 3/4-inch wrench
15/16-inch wrench (2)
3/4-inch socket
Breaker bar
5-inch extension
6-inch ruler

SUPPLIES: None

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

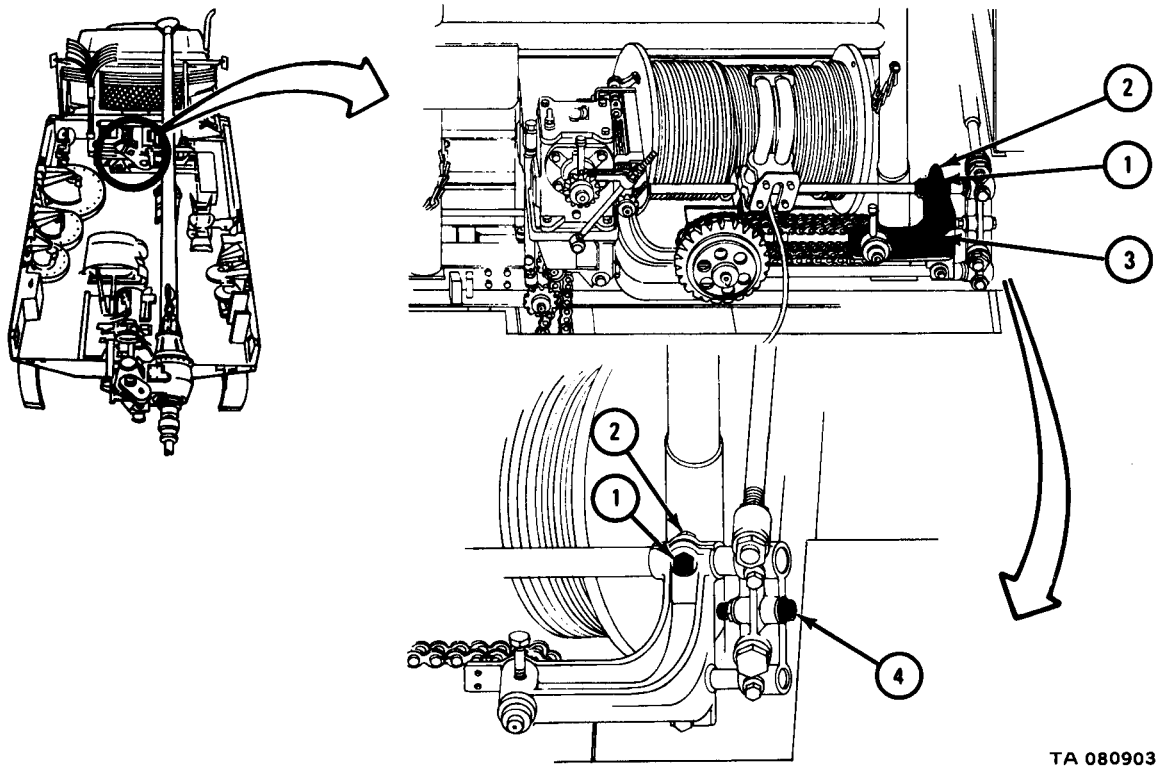
a. Preliminary Procedure. Remove second reduction drive chain. Refer to para 19-17.

b. Carriage Travel Adjustment.

FRAME 1

1. Using 3/4-inch wrench, breaker bar, extension, and 3/4-inch socket, loosen screw (1) and nut (2) on each cross chain bracket (3).
2. Using 15/16-inch wrenches, loosen two adjusting screws (4).

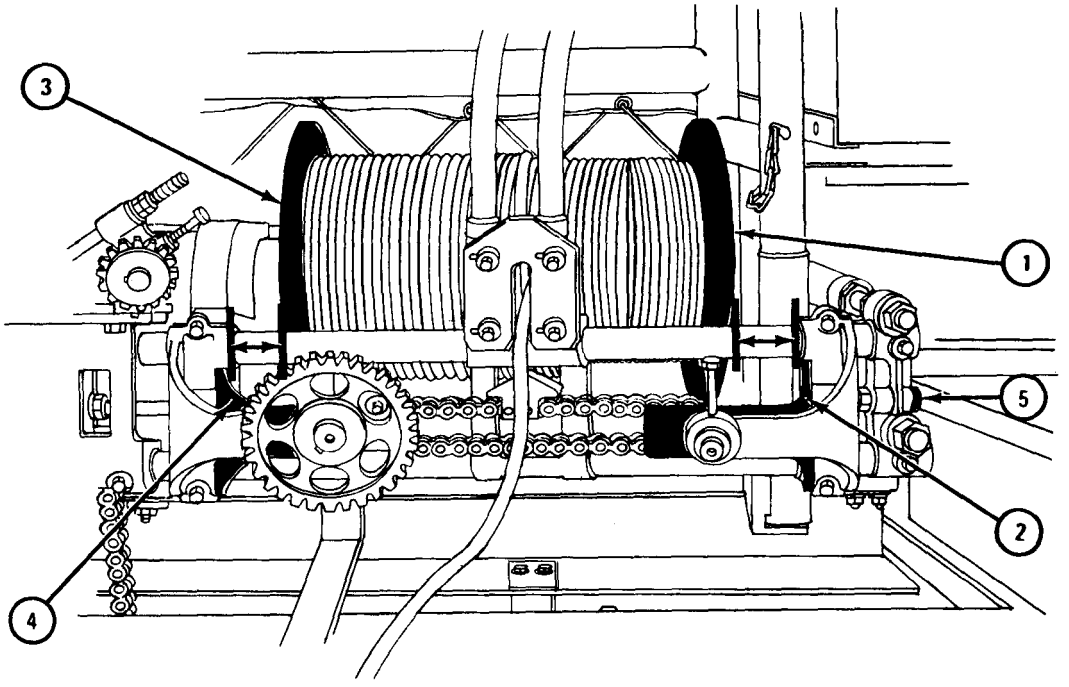
GO TO FRAME 2



FRAME 2

1. Using 6-inch ruler, measure distance between drum flange (1) and cross chain bracket (2), and distance between drum flange (3) and cross chain bracket (4) as shown. Distances should be equal.
2. If distances measured in step 1 are not equal, using 15/16-inch wrenches, turn adjusting screws (5) on cross chain brackets (2 and 4) until distances are equal.

GO TO FRAME 3



TA 080904

FRAME 3

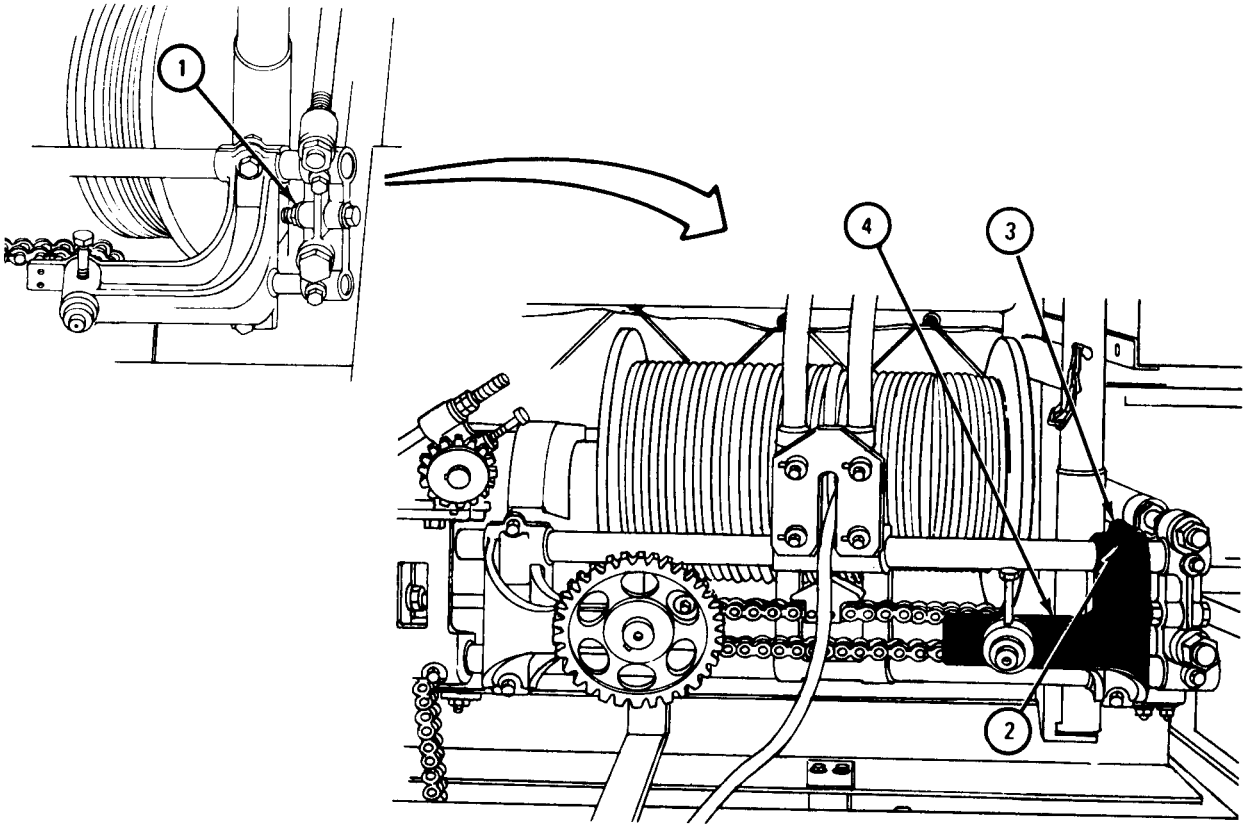
1. Using 15/16-inch wrenches, tighten two locknuts (1).
2. Using 3/4-inch wrench, breaker bar, extension, and 3/4-inch socket, tighten two screws (2) and nuts (3) on each cross chain bracket (4).

NOTE

Follow-on Maintenance Action Required:

Replace second reduction drive chain. Refer to para 19-17.

END OF TASK



TA 080905

19-17. REDUCTION DRIVE CHAINS REMOVAL AND REPLACEMENT (TRUCK M764).

TOOLS: 9/16-inch wrench
1/2-inch wrench (2)
3/4-inch wrench
Flat-tip screwdriver

SUPPLIES: None

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

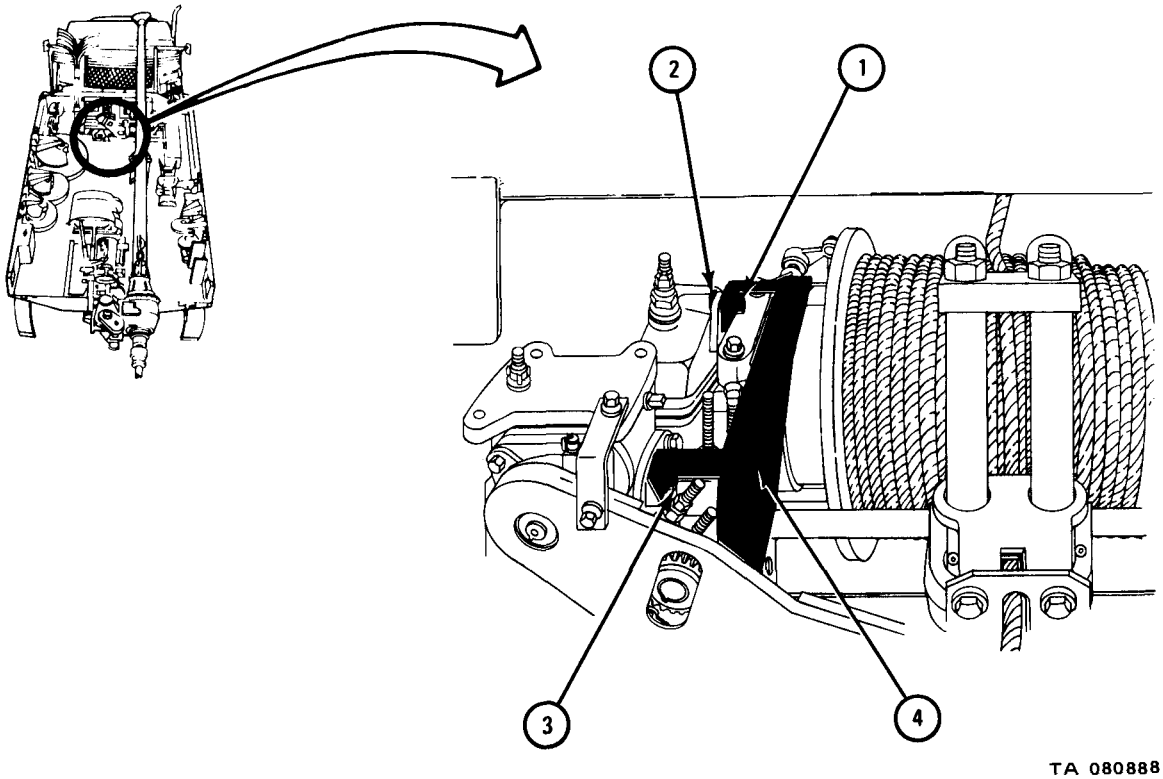
a. Removal.

(1) First reduction drive chain.

FRAME 1

1. Using 9/16-inch wrench, unscrew and take out screw (1) and flat washers (2).
2. Using 1/2-inch wrench, unscrew and take out screw with flat washer (3).
3. Take off cover (4).

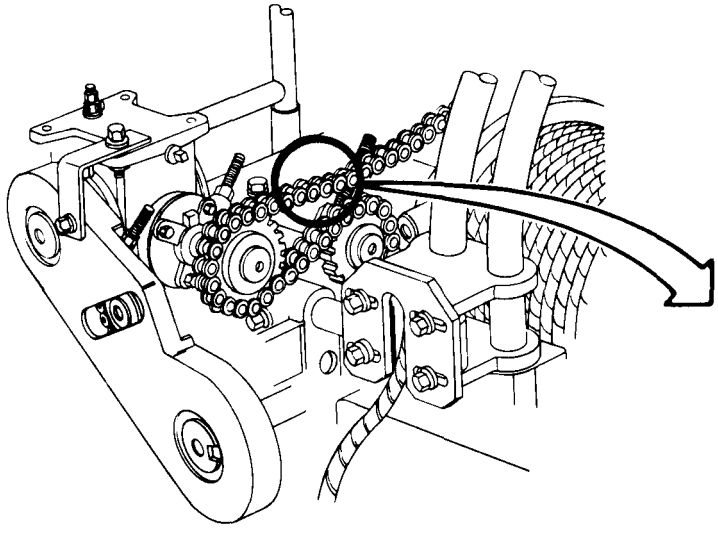
GO TO FRAME 2

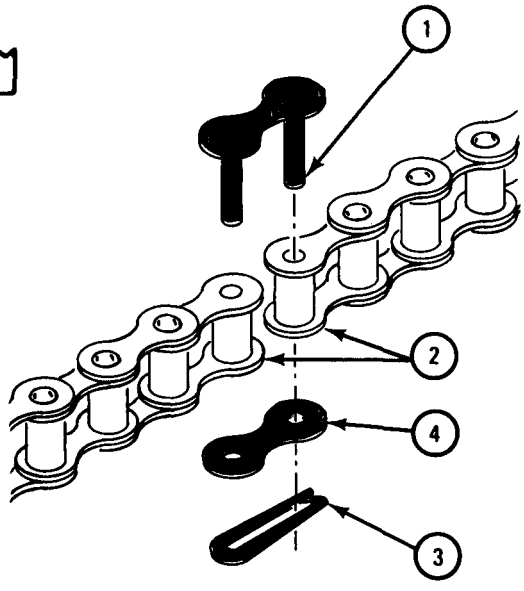


FRAME 2

1. Find detachable link (1) on chain (2).
2. Using screwdriver, push off clip (3).
3. Take off keeper (4) and detachable link (1).
4. Take off chain (2).

END OF TASK





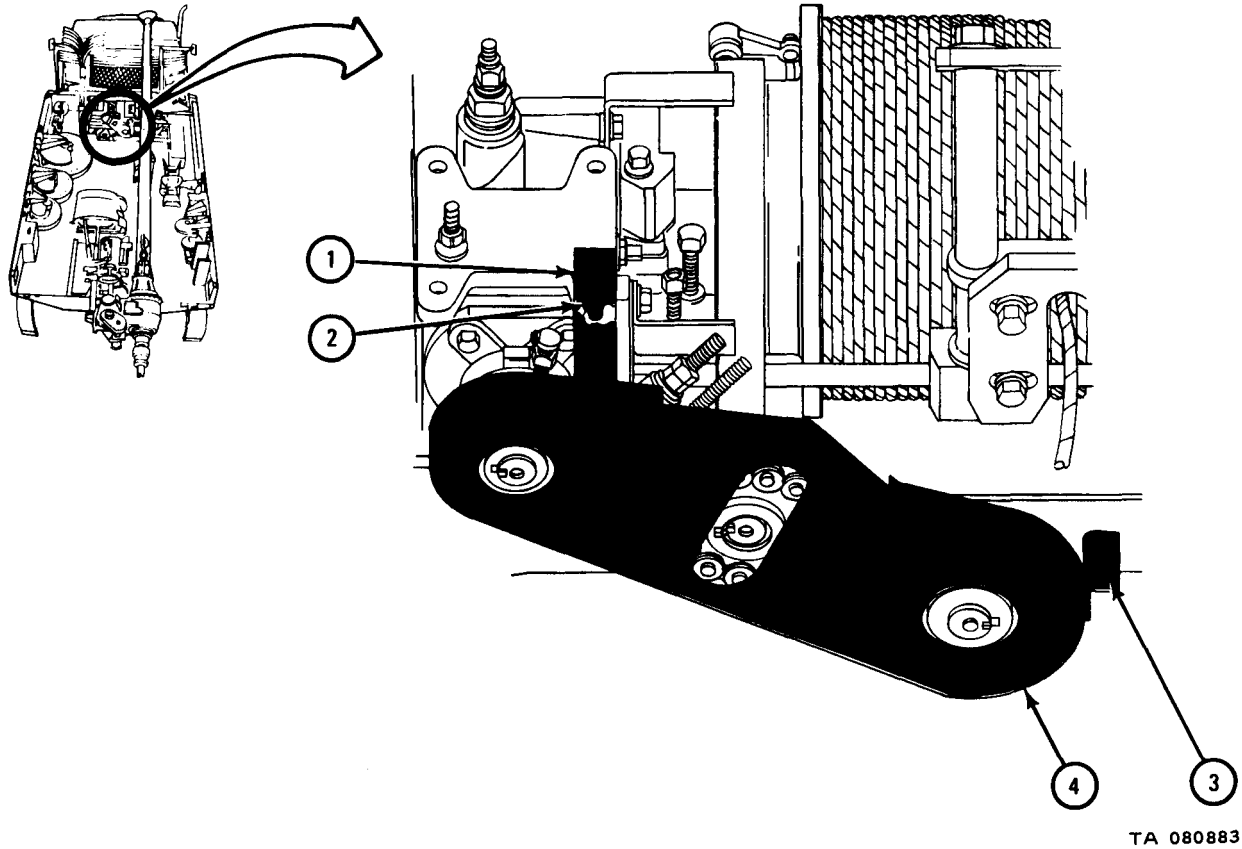
TA 080880

(2) Second reduction drive chain.

FRAME 1

1. Using 1/2-inch wrenches, unscrew and take out screw and washer (1) and nut (2).
2. Using 1/2-inch wrench, unscrew and take out screw and washer (3).
3. Take off cover (4).

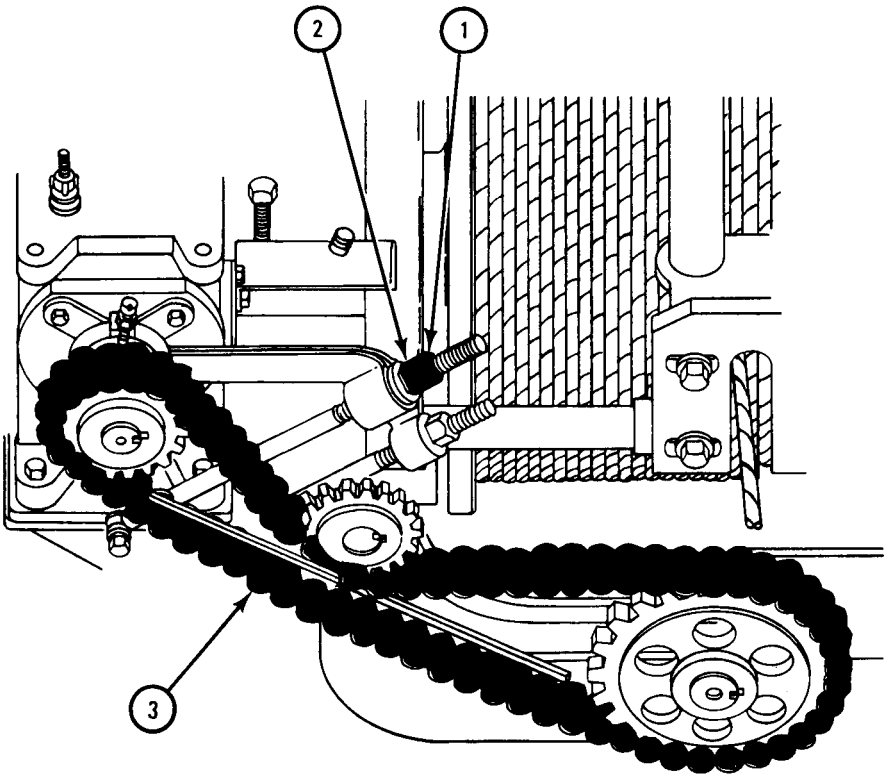
GO TO FRAME 2



FRAME 2

1. Using 3/4-inch wrench, loosen locknut (1) five turns.
2. Using 3/4-inch wrench, loosen adjusting nut (2) until there is slack in chain (3).

GO TO FRAME 3

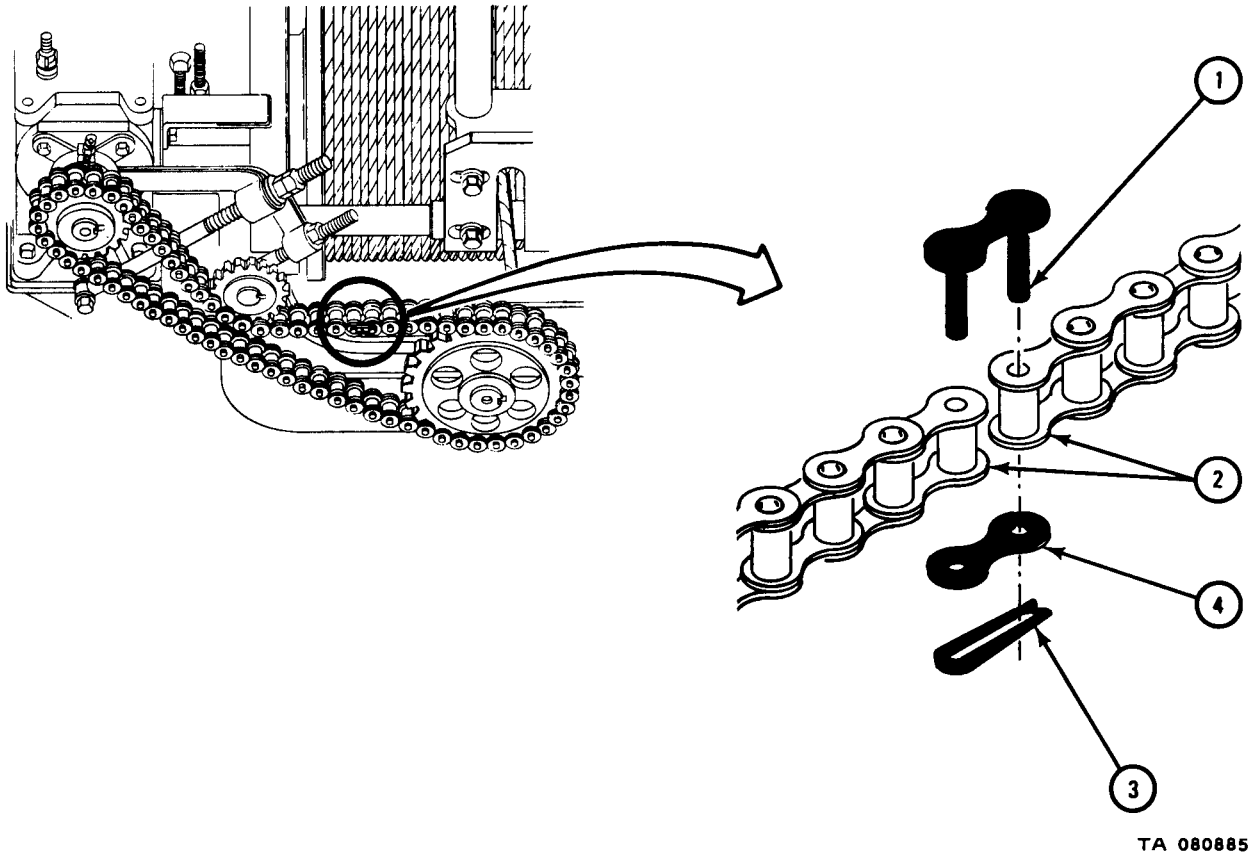


TA 080884

FRAME 3

1. Find detachable link (1) in chain (2).
2. Using screwdriver, push off clip (3).
3. Take off keeper (4) and detachable link (1).
4. Take off chain (2).

END OF TASK



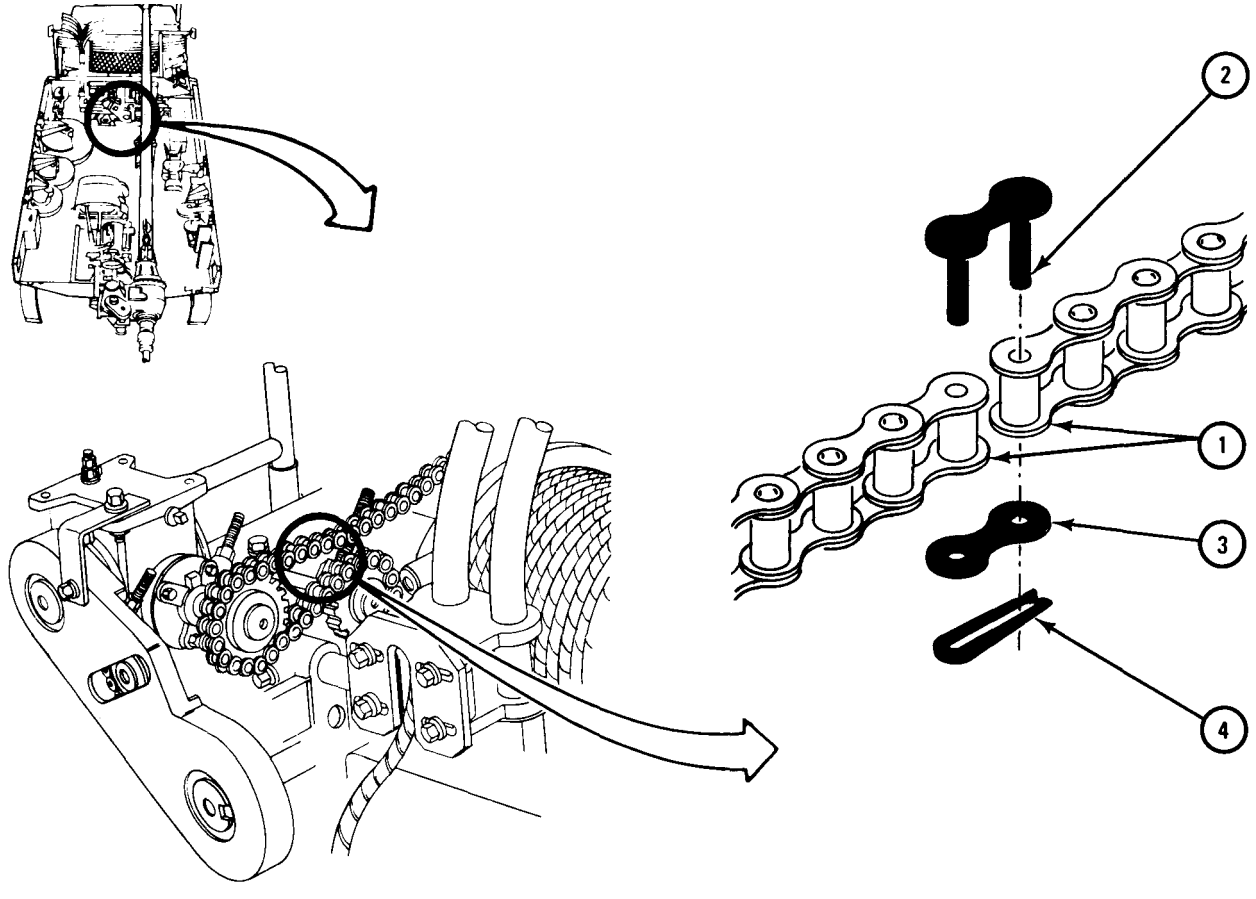
b. Replacement.

(1) First reduction drive chain.

FRAME 1

1. Put chain (1) in place and put detachable link (2) through ends of chain.
2. Put on keeper (3) and clip (4).
3. Adjust first reduction drive chain (1). Refer to para 19-18.

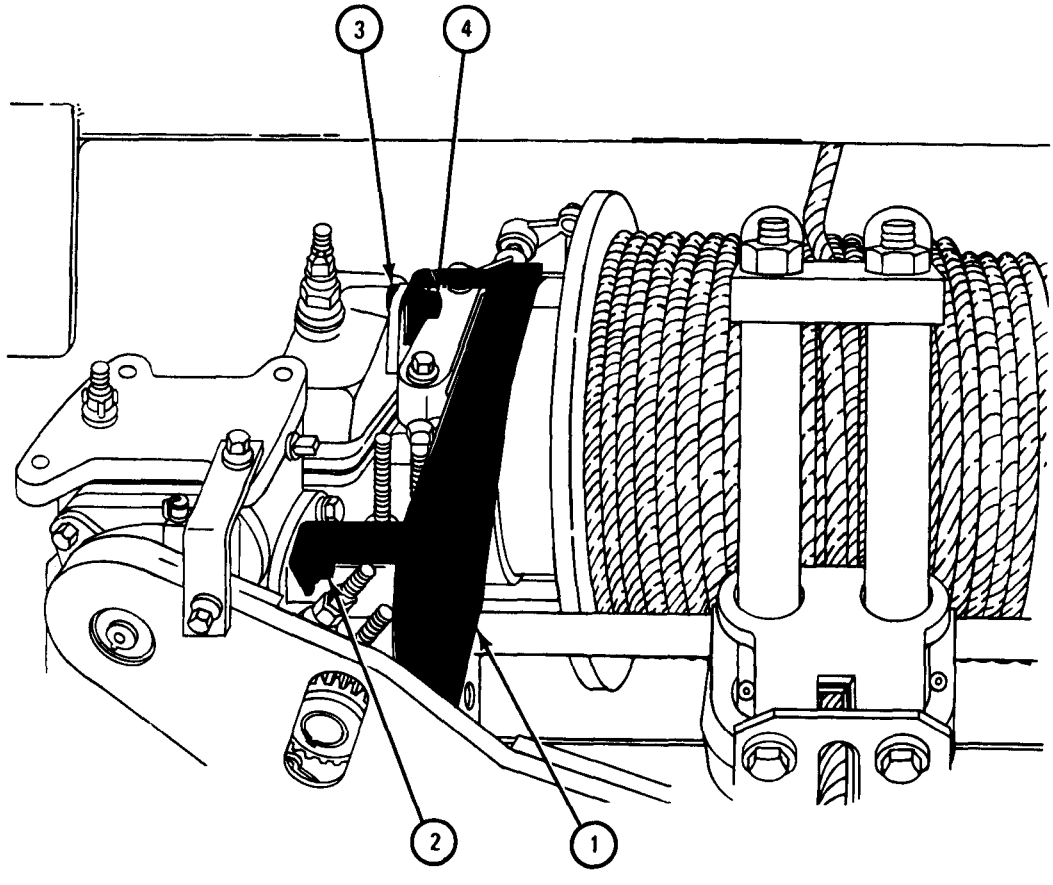
GO TO FRAME 2



FRAME 2

1. Put cover (1) in place.
2. Using 1/2-inch wrench, screw in and tighten screw with flat washer (2).
3. Put flat washers (3) in place.
4. Using 9/16-inch wrench, screw in and tighten screw (4).

END OF TASK



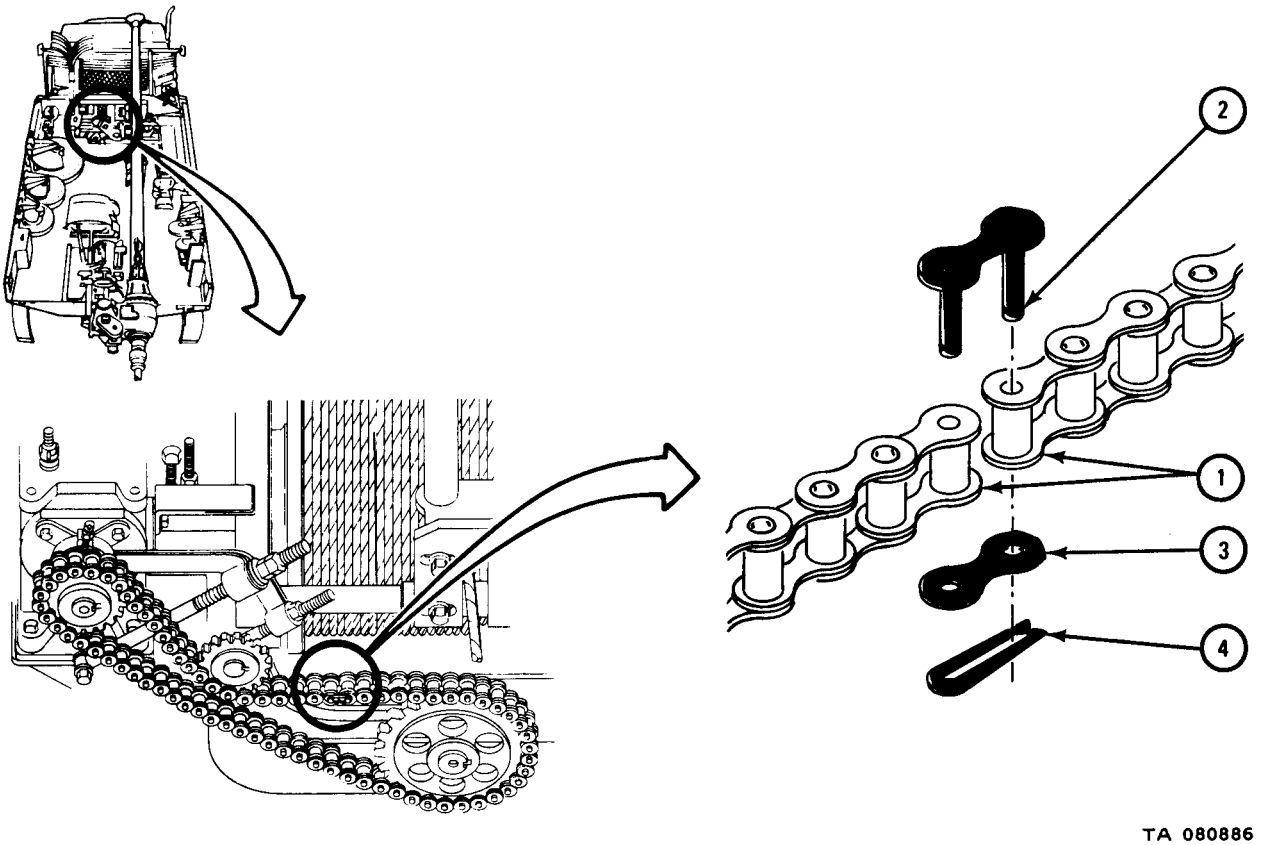
TA 080882

(2) Second reduction drive chain.

FRAME 1

1. Put chain (1) in place.
2. Put detachable link (2) through ends of chain (1).
3. Put keeper (3) in place and put on clip (4).
4. Adjust second reduction drive chain. Refer to para 19-18.

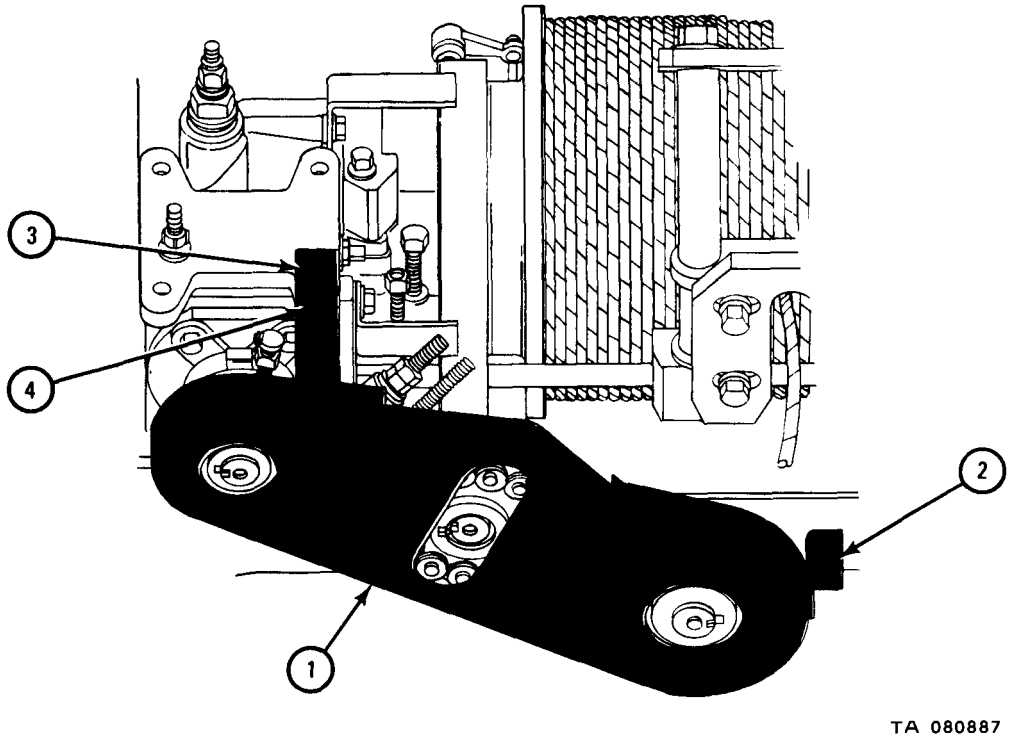
GO TO FRAME 2



FRAME 2

1. Put cover (1) in place.
2. Using 1/2-inch wrench, screw in and tighten screw and washer (2).
3. Using 1/2-inch wrenches, screw in and tighten screw and washer (3) and nut (4).

END OF TASK



TA 080887

19-18. REDUCTION DRIVE CHAINS ADJUSTMENT (TRUCK M764).

TOOLS: 9/16-inch wrench
1/2-inch wrench (2)
3/4-inch wrench
6-inch ruler
18-inch straight edge

SUPPLIES: None

PERSONNEL: One

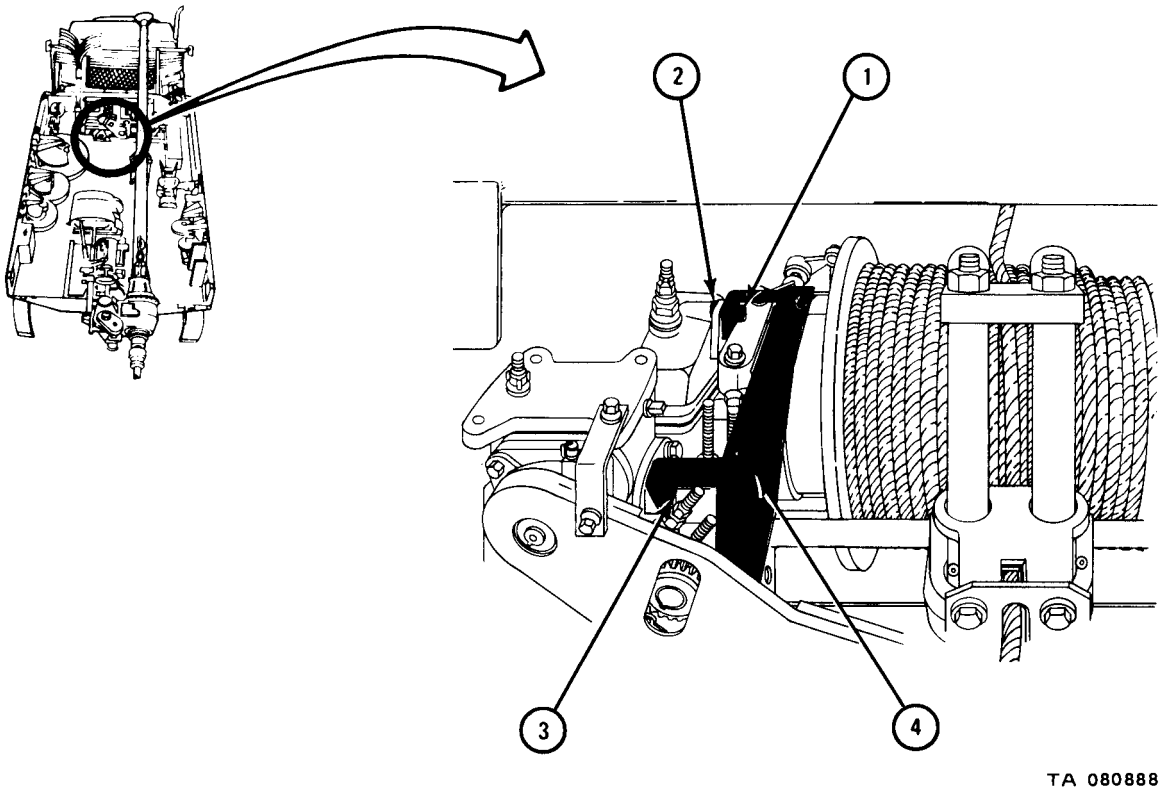
EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. First Reduction Drive Chain.

FRAME 1

1. Using 9/16-inch wrench, unscrew and take out screw (1) and flat washers (2).
2. Using 1/2-inch wrench, unscrew and take out screw with flat washer (3).
3. Take off cover (4).

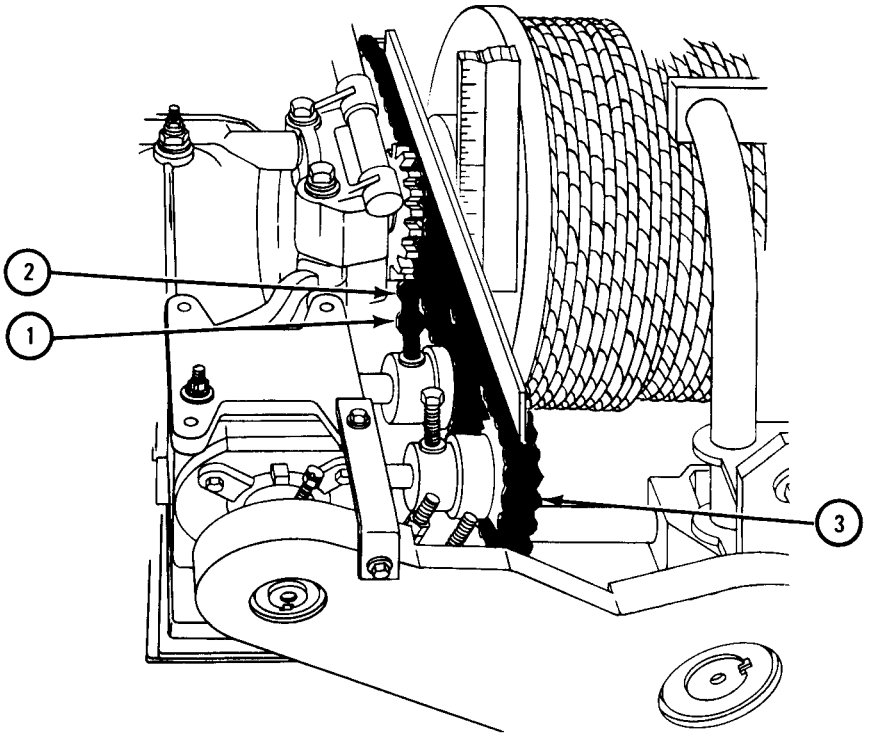
GO TO FRAME 2



FRAME 2

1. Using 3/4-inch wrench, loosen locknut (1) on adjusting screw (2).
2. Hold straight edge along top of chain (3) as shown. Hold 6-inch ruler at midpoint of chain (3). Push down on top of chain and check that there is 1/2 inch of slack.
3. If there is less than 1/2 inch of slack, using 1/2-inch wrench, loosen adjusting screw (2). If there is more than 1/2 inch of slack, tighten adjusting screw.
4. When there is 1/2 inch of slack, using 1/2-inch wrench, hold adjusting screw (2). Using 3/4-inch wrench, tighten locknut (1).

GO TO FRAME 3

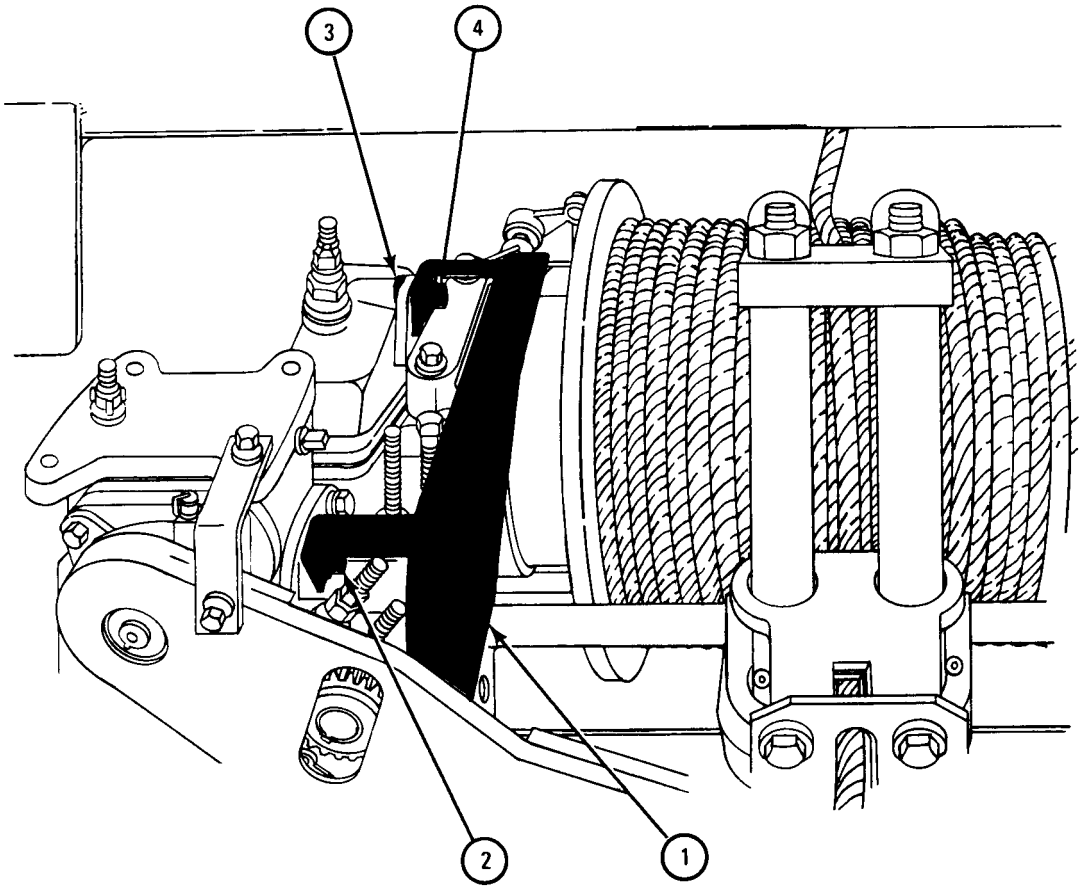


TA 080889

FRAME 3

1. Put cover (1) in place.
2. Using 1/2-inch wrench, screw in and tighten screw with flat washer (2).
3. Put flat washers (3) in place, and using 9/16-inch wrench, screw in and tighten screw (4).

END OF TASK



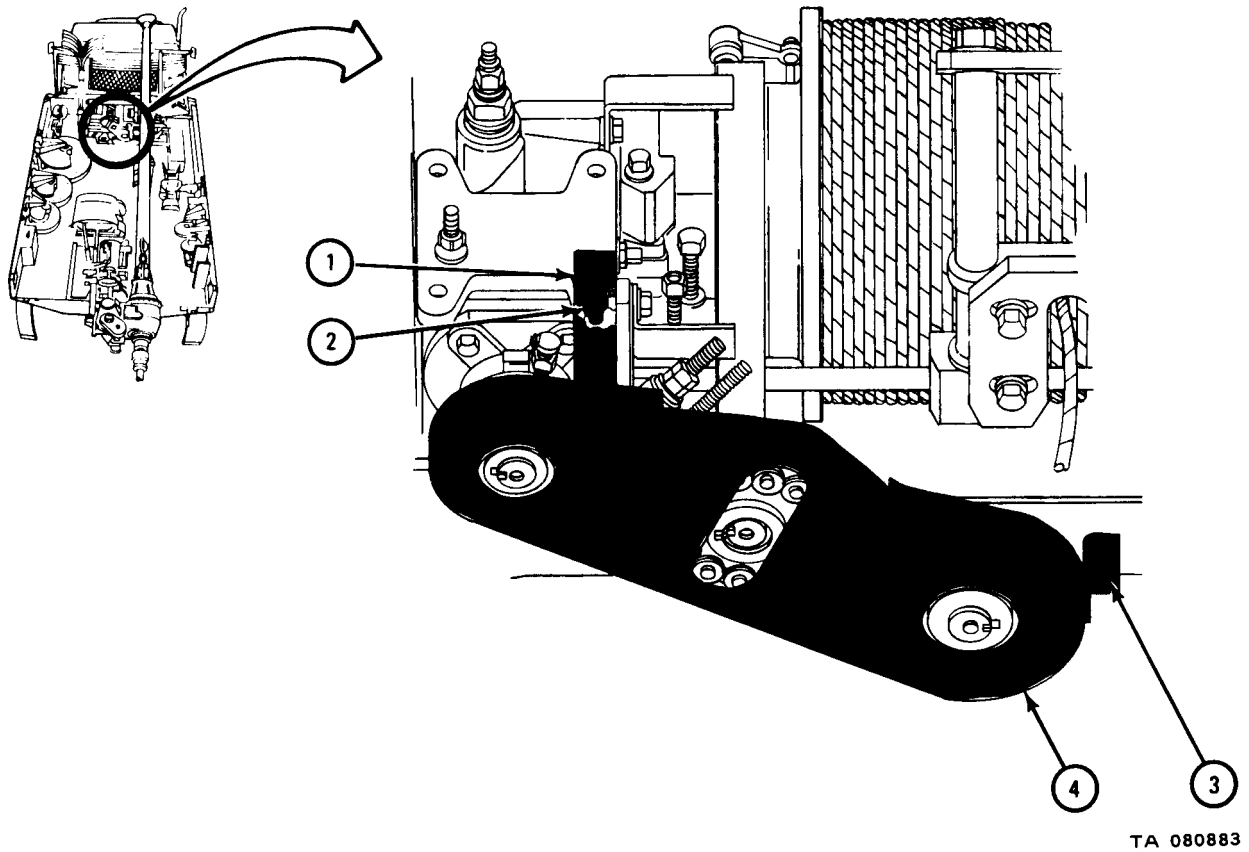
TA 080890

b. Second Reduction Drive Chain.

FRAME 1

1. Using 1/2-inch wrenches, unscrew and take out screw and washer (1) and nut (2).
2. Using 1/2-inch wrench, unscrew and take out screw and washer (3).
3. Take off cover (4).

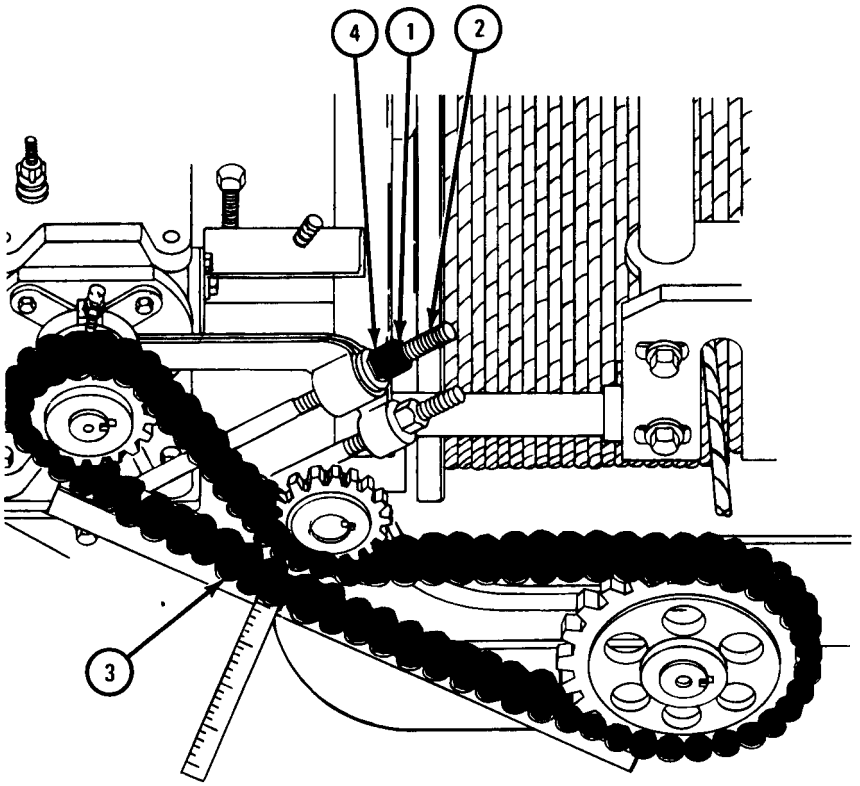
GO TO FRAME 2



FRAME 2

1. Using 3/4-inch wrench, loosen locknut (1) on adjusting screw (2).
2. Hold straight edge along chain (3) as shown. Place 6-inch ruler at midpoint of chain (3) as shown. Push in bottom of chain and check that there is 1/2-inch of slack in chain.
3. If there is more than 1/2 inch of slack, tighten adjusting nut (4). If there is less than 1/2 inch of slack, loosen adjusting nut.
4. When there is 1/2 inch of slack, using 3/4-inch wrench, tighten locknut (1).

GO TO FRAME 3

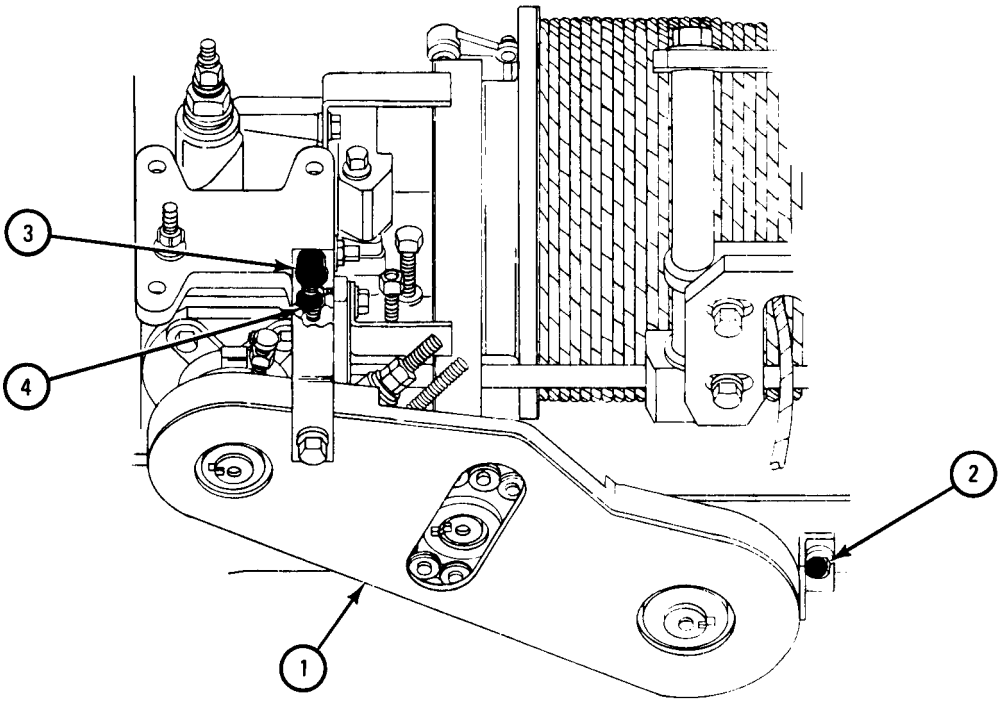


TA 080892

FRAME 3

1. Put cover (1) in place.
2. Using 1/2-inch wrench, screw in and tighten screw and washer (2).
3. Using 1/2-inch wrenches, screw in and tighten screw and washer (3) and nut (4).

END OF TASK



TA 080887

19-19. CABLE LEVEL WINDER DRIVE CHAINS REPAIR (TRUCK M764).

TOOLS: Grinder

SUPPLIES: Chain connecting link assembly

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Preliminary Procedure. Remove drive chain to be repaired. Refer to para 19-15.

b. Repair.

FRAME 1

WARNING

Eye shields must be worn when using grinder. Eye injury can occur if eye shields are not used.

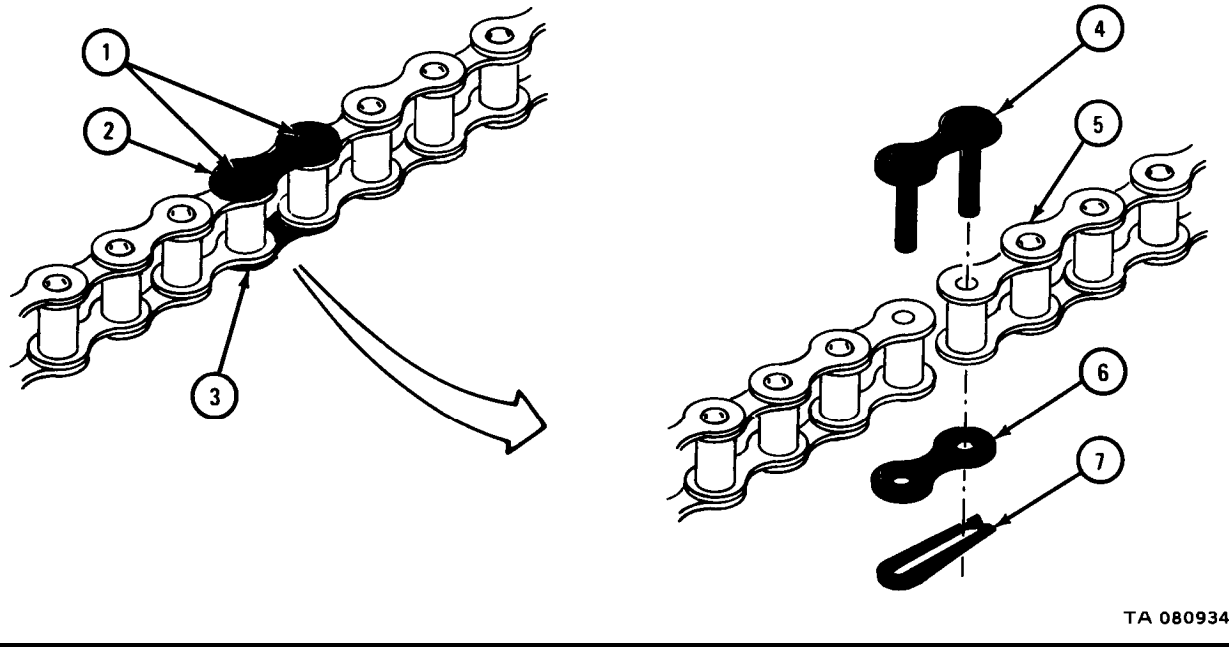
1. Using grinder, grind off riveted ends of link pins (1) on any link found to be damaged. Take off keeper (2) and link (3).
2. Put connecting link (4) through both ends of chain (5).
3. Put on keeper (6) and clip (7).

NOTE

Follow-on Maintenance Action Required:

Replace drive chain. Refer to para 19-15.

END OF TASK



19-20 OUTRIGGER PUMP DRIVE SHAFT UNIVERSAL JOINT ASSEMBLY REMOVAL AND REPLACEMENT (TRUCK M764).

TOOLS: 9/16-inch combination wrench (2)
3/32-inch sockethead screw key (Allen wrencher equivalent)
Snapring pliers
Ballpeen hammer

SUPPLIES: Artillery and automotive grease, type GAA, MIL-G-10924

PERSONNEL: Two

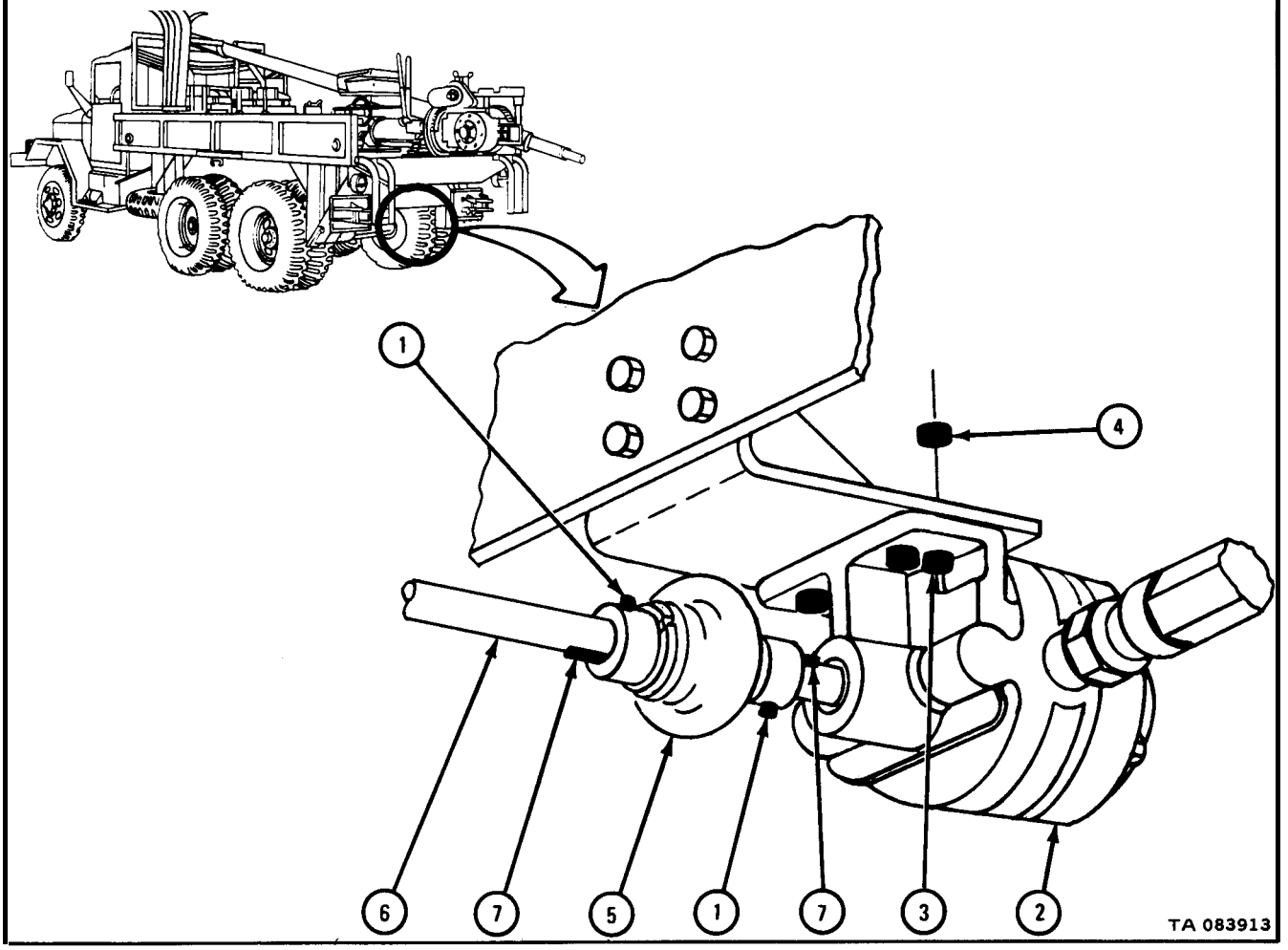
EQUIPMENT CONDITION: Truck parked, engine off, handbrake set, wheels chocked.

a. Removal.

FRAME 1

Soldier A	1.	Using allen wrench, loosen two setscrews (1).
Soldier B	2.	Hold pump (2) so it will not fall when soldier A works on it.
Soldier A	3.	Using wrenches, unscrew and take out four screws (3) and nuts (4).
	4.	Hold universal joint (5).
Soldier B	5.	Pull pump (2) out of universal joint (5).
Soldier A	6.	Take universal joint (5) off shaft (6). Using ballpeen hammer and brass drift, tap out two keys (7).
Soldier B	7.	Put pump (2) back in place, alining hole for one screw (3).
Soldier A	8.	Using wrenches, screw in and tighten one screw (3) and nut (4) to hold pump (2).

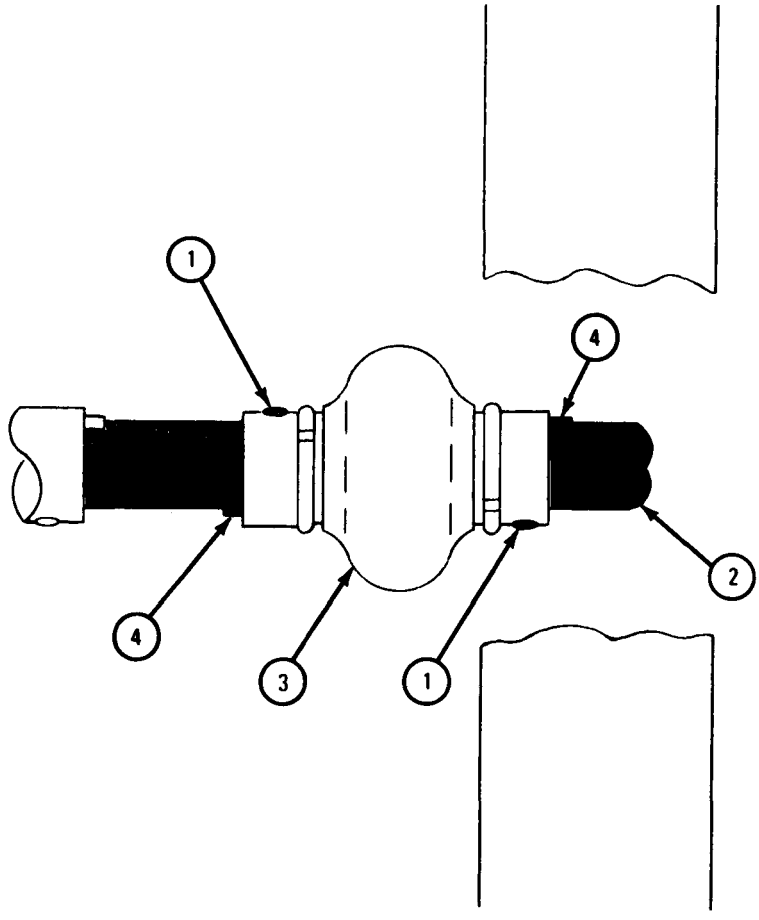
GO TO FRAME 2



FRAME 2

1. Using allen wrench, loosen two setscrews (1).
2. Take shaft (2) out of universal joint (3). Take out universal joint. Using ballpeen hammer and brass drift, tap out two keys (4).

END OF TASK



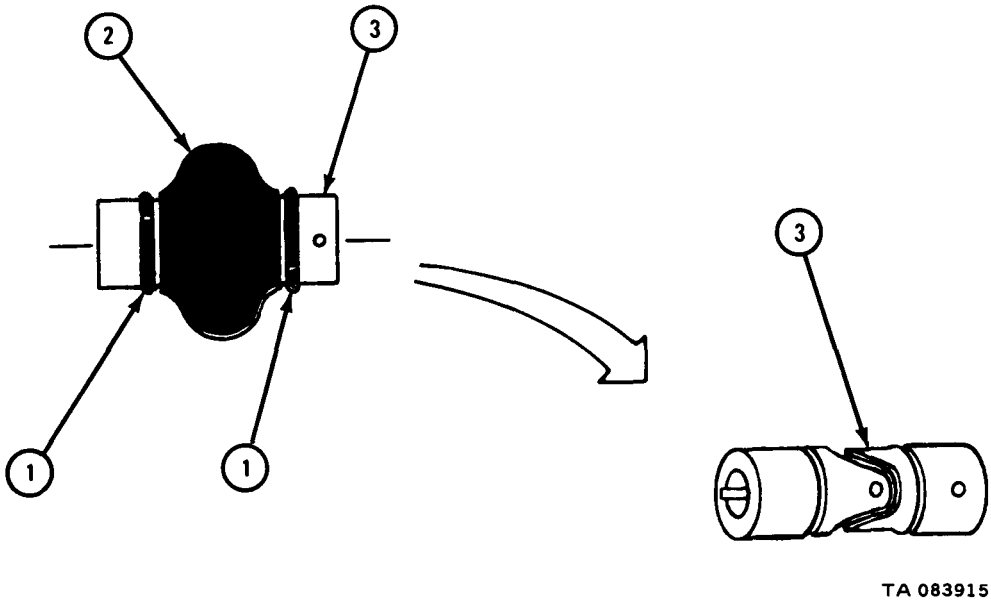
TA 083914

b. Replacement.

FRAME 1

1. Using snapring pliers, take off two snaprings (1). Take off boot (2).
2. Pack universal joint (3) with grease.
3. Put boot (2) onto universal joint (3).
4. Using snapring pliers, put on two snaprings (1).

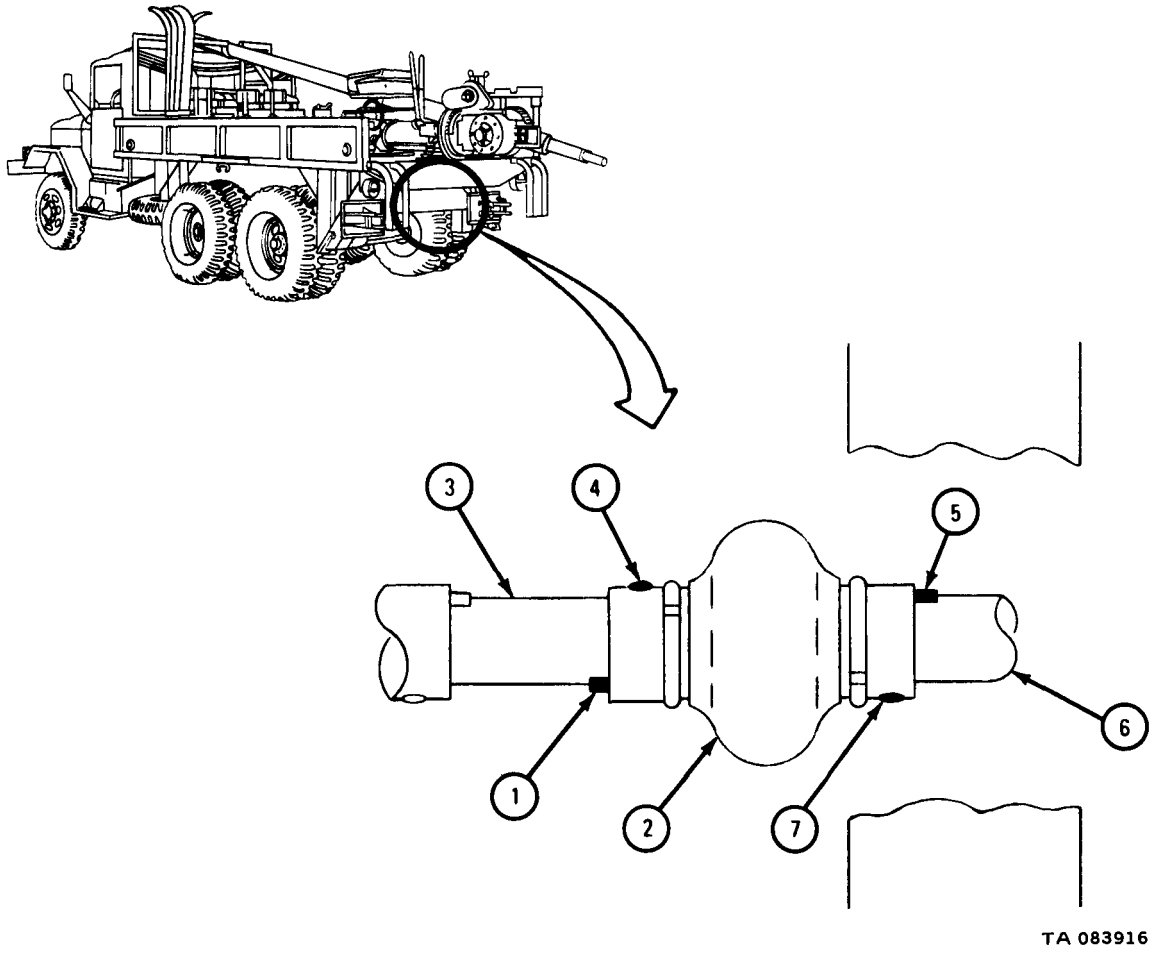
GO TO FRAME 2



FRAME 2

1. Using ballpeen hammer and brass drift, tap key (1) in place. Put universal joint (2) onto shaft (3). Using allen wrench, tighten setscrew (4).
2. Using ballpeen hammer and brass drift, tap key (5) in place. Put shaft (6) into universal joint (2). Using allen wrench, tighten setscrew (7).

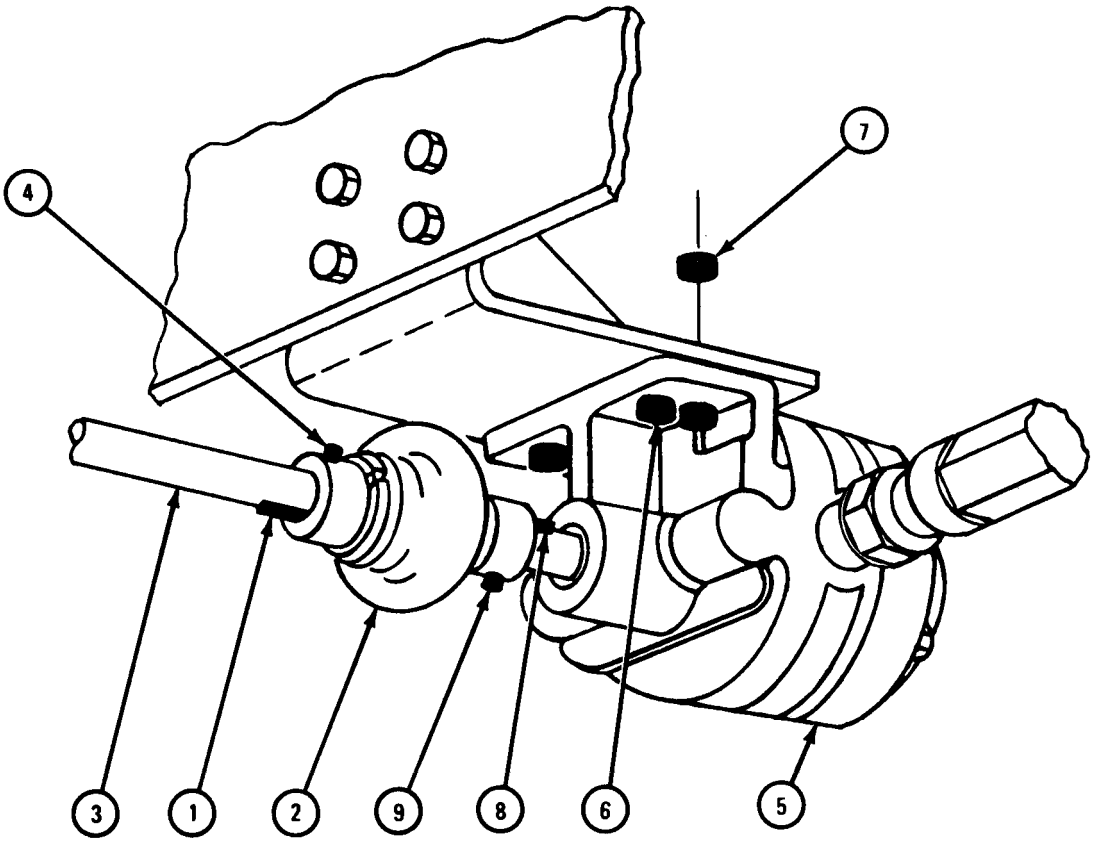
GO TO FRAME 3



FRAME 3

Soldier A	1.	Using ballpeen hammer and brass drift, tap key (1) in place. Put universal joint (2) onto shaft (3). Using allen wrench, tighten setscrew (4).
Soldier B	2.	Hold pump (5) so it will not fall down when soldier A works on it.
Soldier A	3.	Using wrenches, unscrew and take out screw (6) and nut (7).
	4.	Using ballpeen hammer and brass drift, tap in key (8).
Soldier B	5.	Put shaft of pump (5) into universal joint (2). Aline holes for four screws (6).
Soldier A	6.	Using wrenches, screw in and tighten four screws (6) and nuts (7).
	7.	Using allen wrench, tighten setscrew (9).

END OF TASK



TA 083917

19-21. HYDRAULIC HOIST PUMP PROPELLER SHAFT REMOVAL, REPAIR, AND REPLACEMENT (TRUCK M342A2).

TOOLS: 3/8-inch open end wrench
Prybar
6-inch steel ruler

SUPPLIES: None

PERSONNEL: One

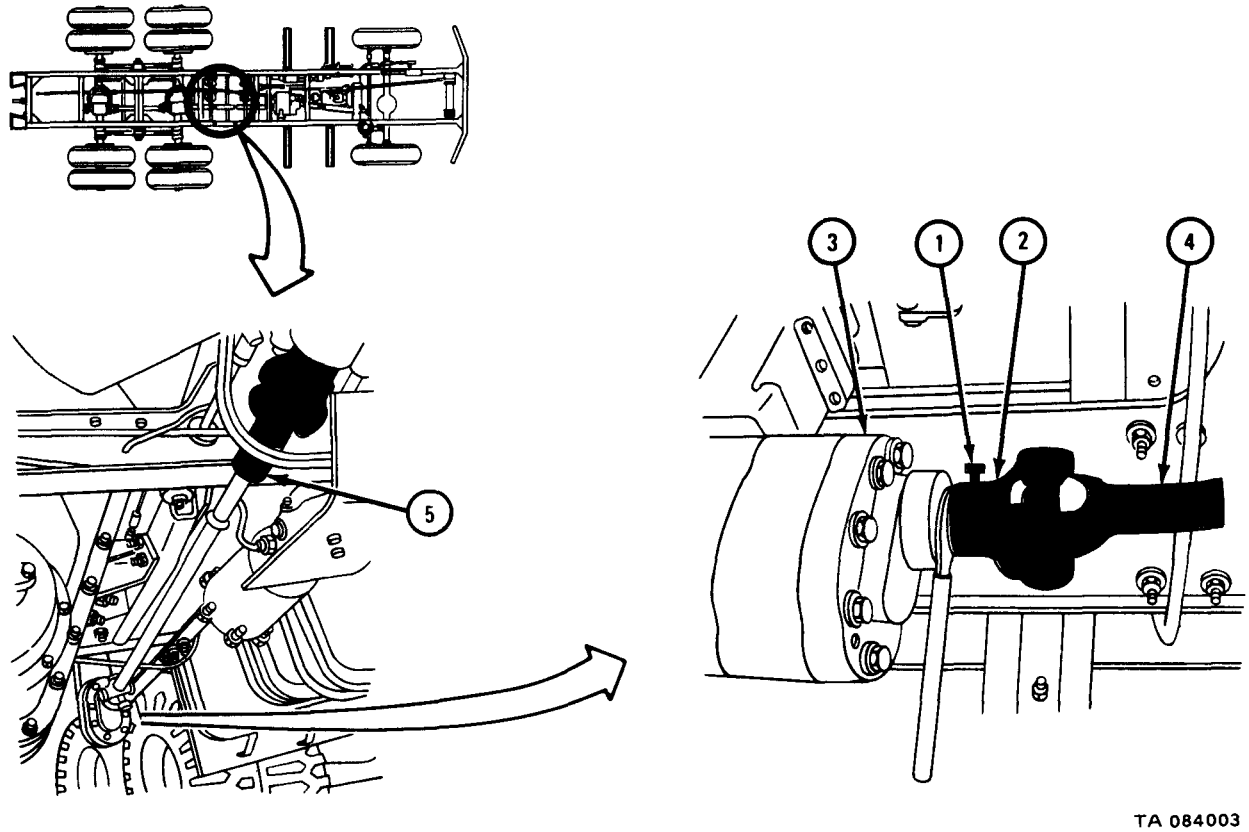
EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Removal.

FRAME 1

1. Using 3/8-inch wrench, unscrew and take out setscrew (1).
2. Put prybar between yoke (2) and hydraulic hoist pump (3) as shown and pry yoke off hydraulic hoist pump. Pull propeller shaft (4) out of universal joint yoke (5).

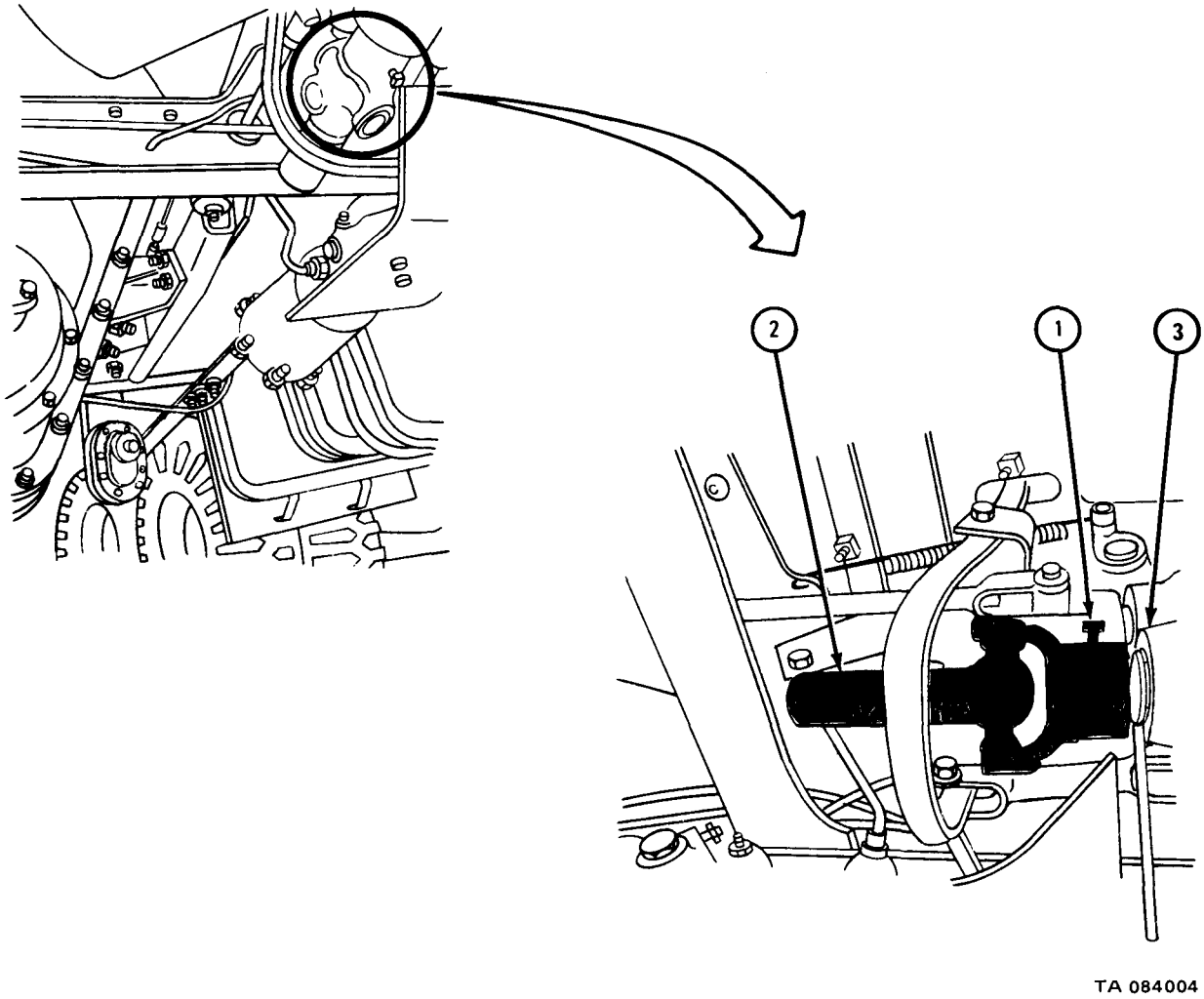
GO TO FRAME 2



FRAME 2

1. Using 3/8-inch wrench, unscrew and take out setscrew (1).
2. Put prybar between universal joint yoke (2) and power takeoff (3) as shown and pry off universal joint yoke. Take universal joint yoke out from under truck.

END OF TASK



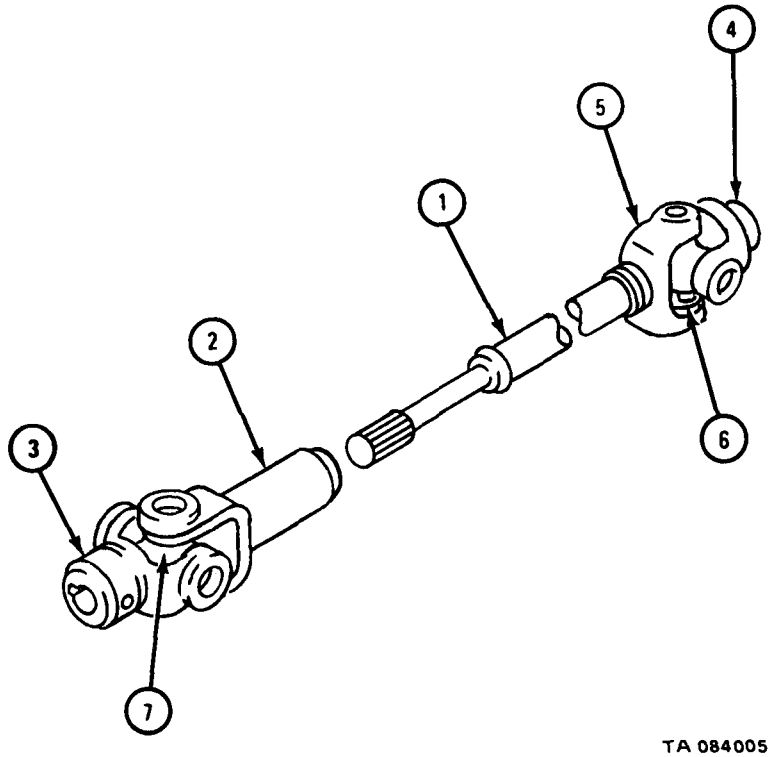
TA 084004

b. Repair

FRAME 1

1. Check that propeller shaft (1) and universal joint yokes (2, 3, 4, and 5) are not bent or cracked. If damaged, get new parts.
2. Check that universal joints (6 and 7) are not rusted, loose or broken. If damaged, do universal joint repair. Refer to Part 1, para 10-5.

END OF TASK

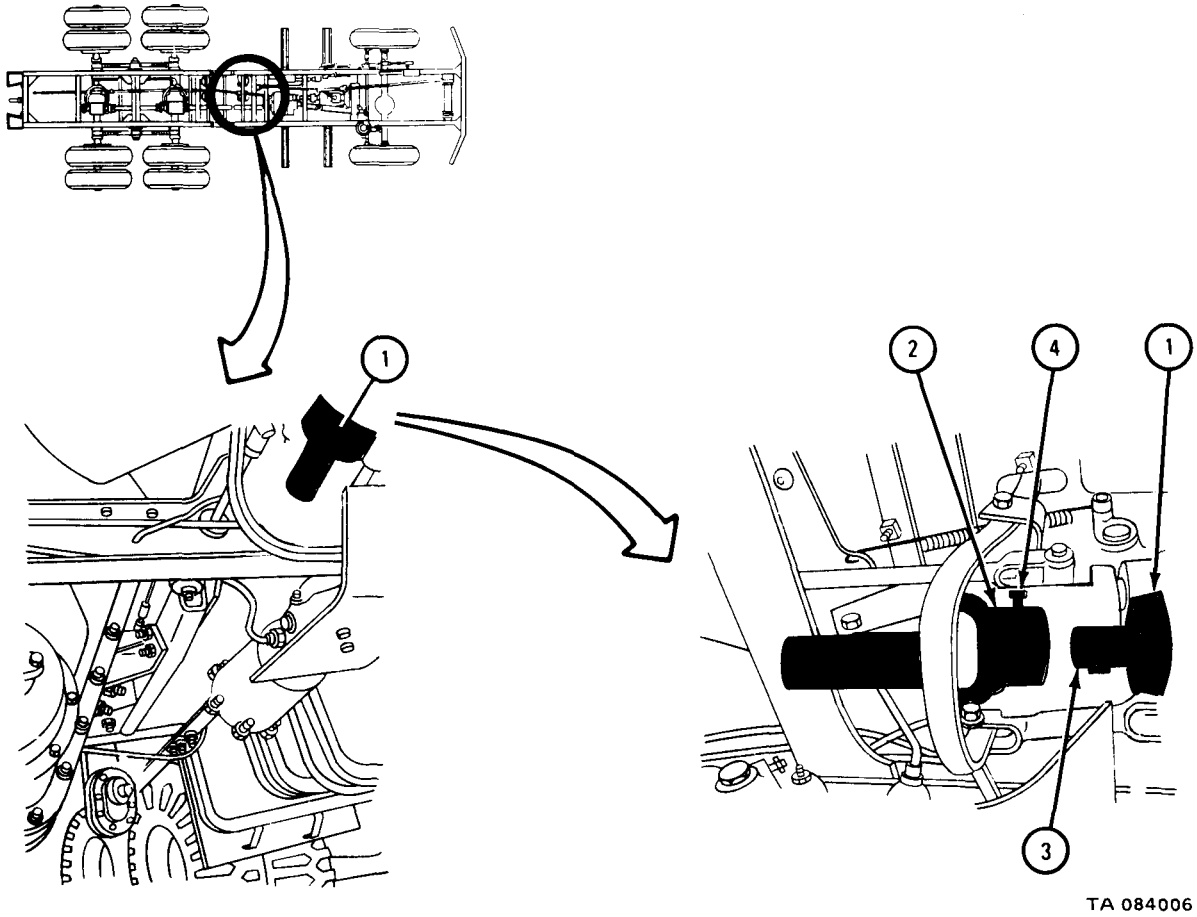


c. Replacement.

FRAME 1

1. Working under truck at power takeoff (1), aline keyway in universal joint yoke (2) with woodruff key on power takeoff shaft (3).
2. Push universal joint yoke (2) on power takeoff shaft (3). Using ruler, leave 1/2 inch space between universal joint yoke and power takeoff (1).
3. Using 3/8-inch wrench, screw in and tighten setscrew (4).

GO TO FRAME 2



FRAME 2

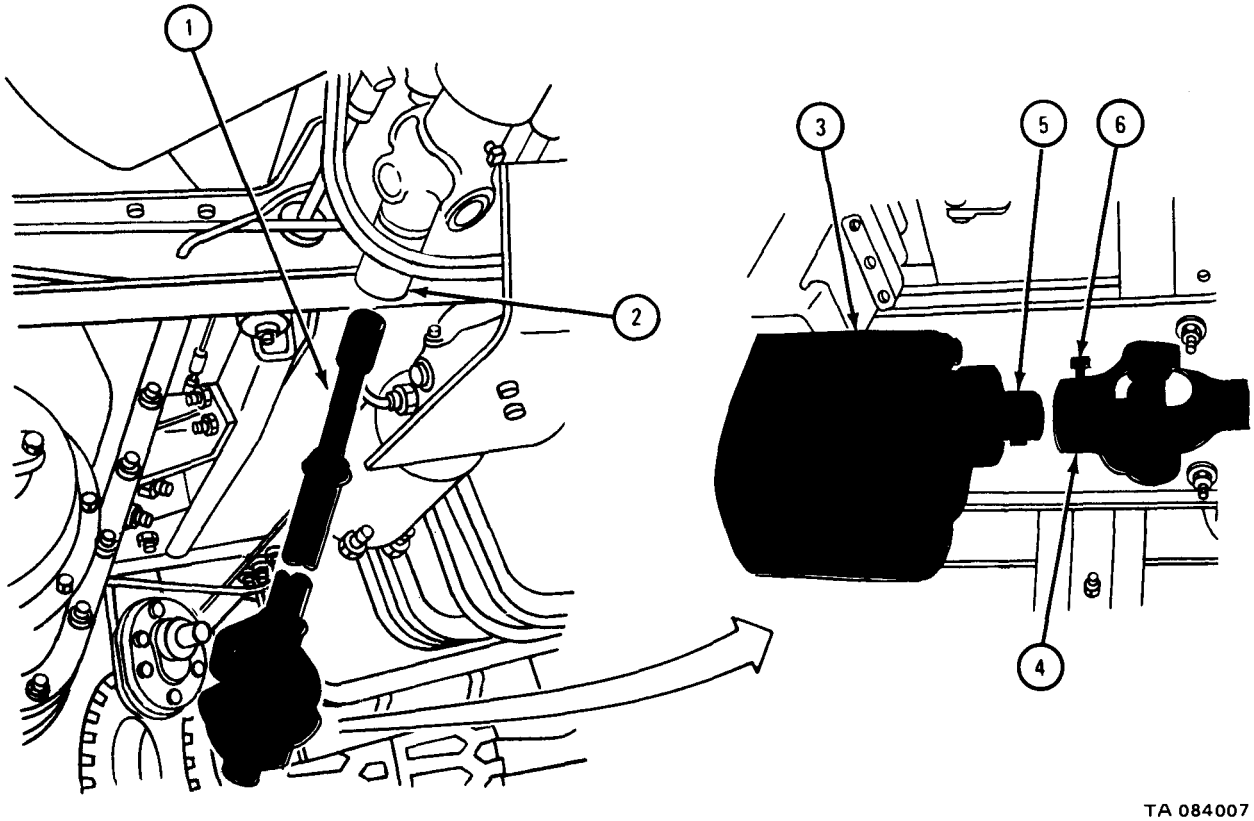
1. Aline splines on driveshaft (1) with splines in universal joint yoke (2). Put propeller shaft into universal joint yoke.
2. Working at hydraulic hoist pump (3), aline keyway in universal joint yoke (4) with woodruff key on hydraulic hoist pump shaft (5).
3. Push universal joint yoke (4) on hydraulic hoist pump shaft (5). Using ruler, leave 1/2 inch space between universal joint yoke and hydraulic hoist pump (3).
4. Using 3/8-inch wrench, screw in and tighten setscrew (6).

NOTE

Follow-on Maintenance Action Required:

If universal joints were replaced, lubricate universal joints. Refer to LO 9-2320-209-12/1.

END OF TASK



19-22. FLEXIBLE HYDRAULIC LINES REMOVAL AND REPLACEMENT (TRUCK M342A2).

TOOLS: 1 1/4-inch open end wrench
1 3/8-inch open end wrench (2)
One-gallon container

SUPPLIES: Tags

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

WARNING

Never work under dump body unless safety braces are in place. Dump body could drop and personnel could be seriously injured.

a. Preliminary Procedure. Raise dump body and set safety braces. Refer to para 19-24.

b. Removal.

NOTE

Tag hydraulic lines and note the way they are routed so they can be put back in the right place.

FRAME 1

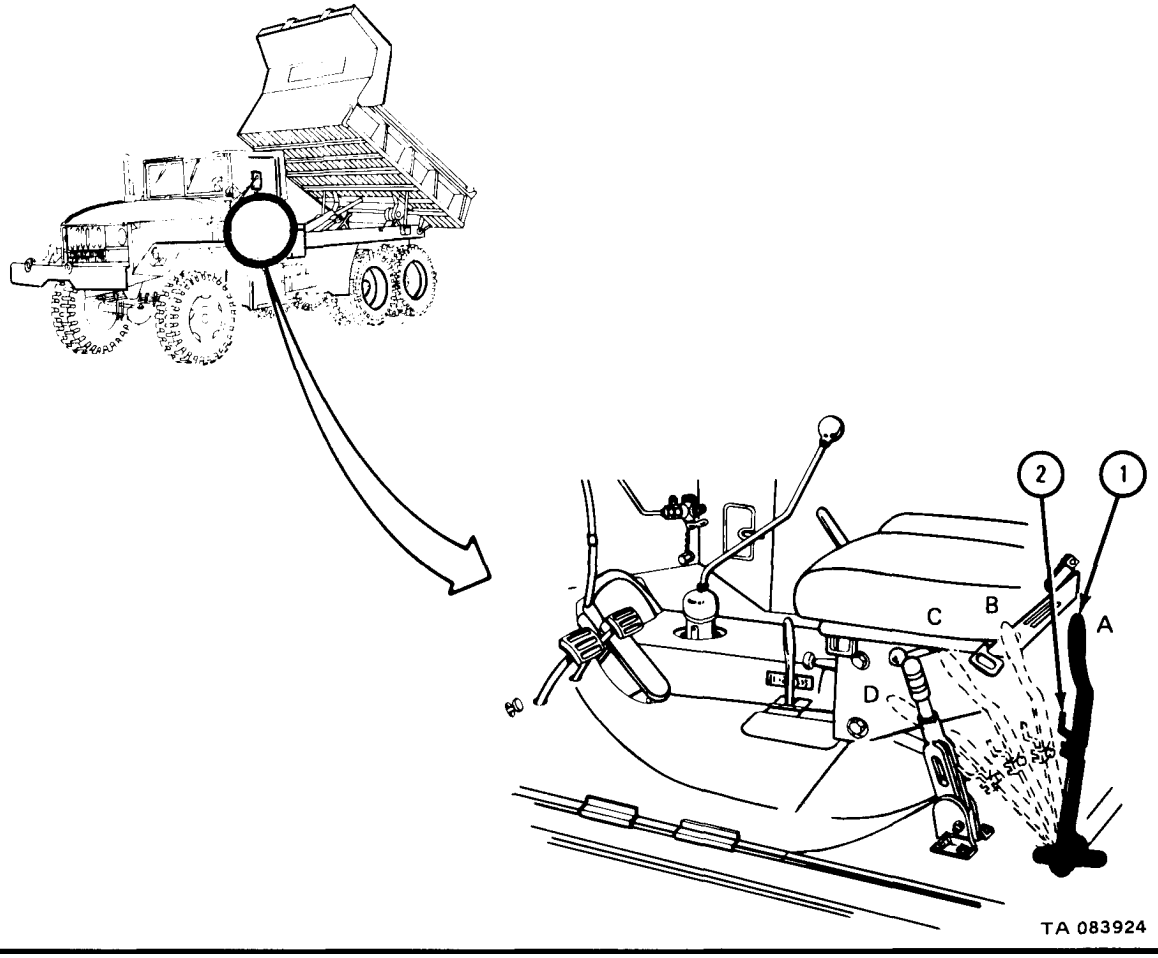
1. Start engine. Refer to TM 9-2320-209-10.

NOTE

When hoist control lever (1) is put into position B, dump body will stay up on safety braces.

2. Put safety lock (2) in OFF position.
3. Put hoist control lever (1) in position B and hold for at least one minute.
4. Put hoist control lever (1) in position A.
5. Stop engine. Refer to TM 9-2320-209-10.

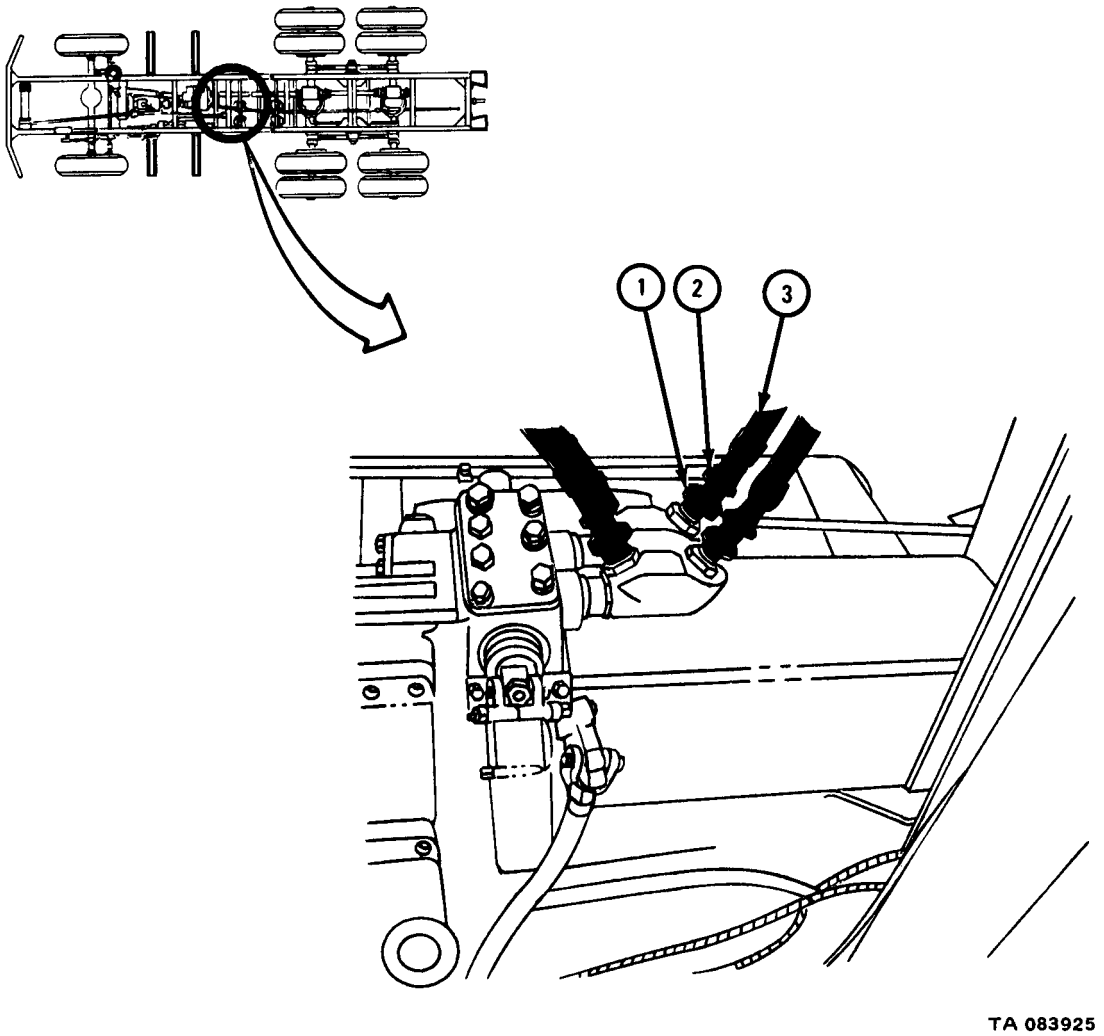
GO TO FRAME 2



FRAME 2

1. Drain hydraulic oil reservoir. Refer to LO 9-2320-209-12/1.
2. Working under truck, put 1-gallon container under hose coupling nut (1).
3. Using 1 3/8-inch wrenches, hold four hose nuts (2). Using 1 1/4-inch wrench, unscrew four coupling nuts (1). Let hydraulic lines (3) drain into container.
4. Put hydraulic fluid in approved disposal area.

GO TO FRAME 3



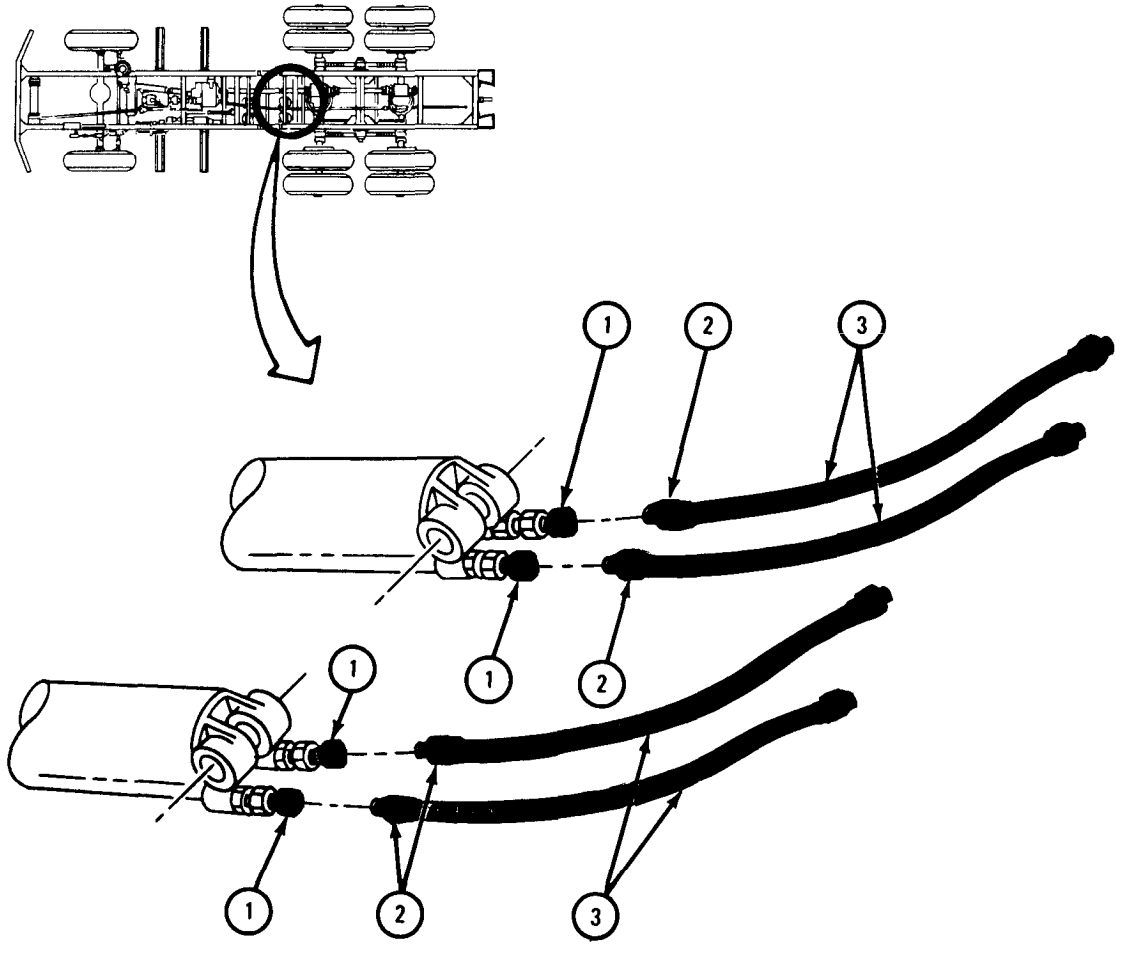
FRAME 3

NOTE

On some trucks there may be bushings instead of coupling nuts (1).

1. Working under truck and using 1 3/8-inch wrench, hold four hose nuts (2). Using 1 1/2-inch wrench, unscrew four coupling nuts (1). If truck has bushings, using 1 3/8-inch wrenches, hold bushings and unscrew four hose nuts.
2. Take off four hydraulic lines (3).

END OF TASK



TA 083926

c. Replacement.

FRAME 1

NOTE

Bushings may be used instead of coupling nuts (1).

1. Screw on and finger tighten four coupling nuts (1) onto four hydraulic line hose nuts (2). If using bushings, finger tighten four hydraulic line hose nuts into bushings.

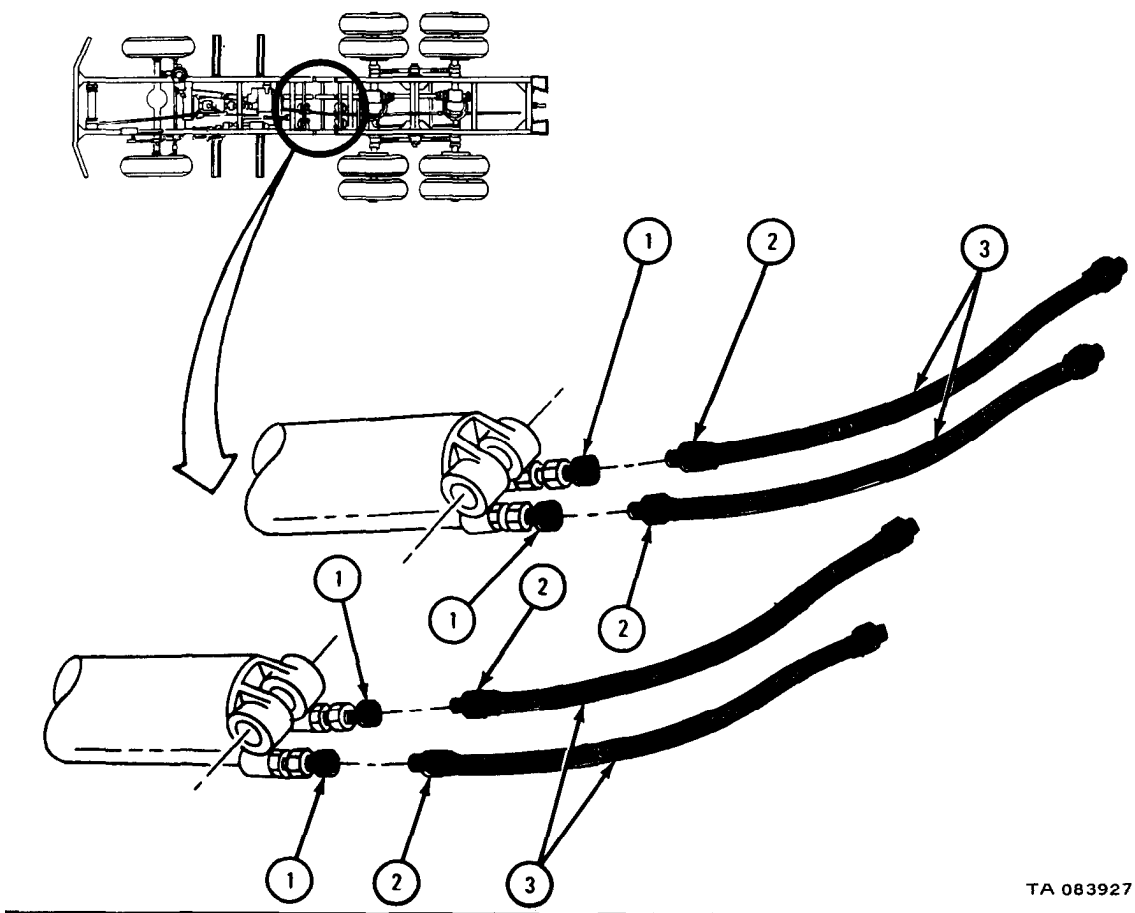
NOTE

If using old hydraulic lines (3), tighten coupling nuts (1) 1/8 turn.

If using new hydraulic lines, do not tighten coupling nuts more than two turns.

2. Using 1 3/8-inch wrenches, hold four hose nuts (2) and tighten four coupling nuts (1). If using bushings, using 1 3/8-inch wrenches, hold bushings and tighten four hose nuts into bushings.

GO TO FRAME 2



FRAME 2

1. Screw on and finger tighten four coupling nuts (1) onto four hydraulic line hose nuts (2) as tagged. Take off tags.

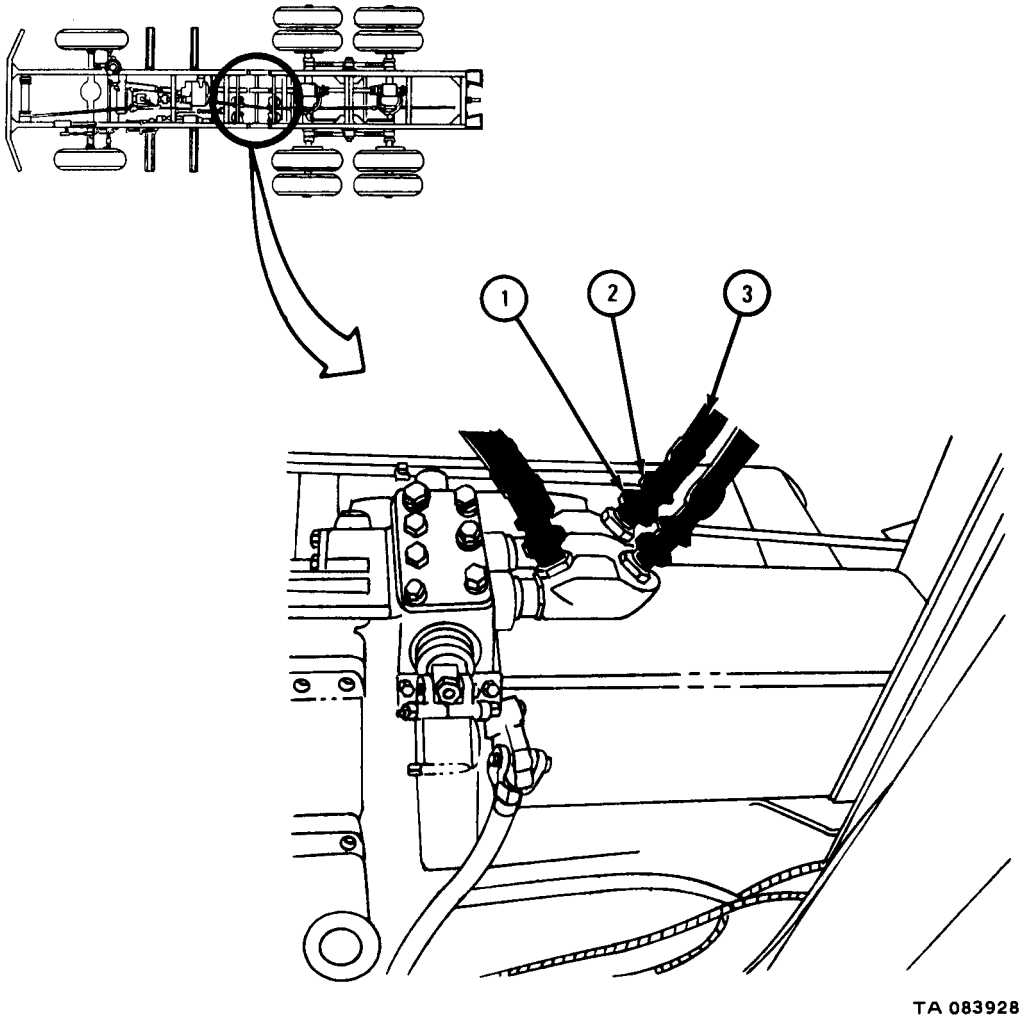
NOTE

If using old hydraulic lines (3), tighten coupling nuts (1) 1/8 turn.

If using new hydraulic lines, do not tighten coupling nuts more than two turns.

2. Using 1 3/8-inch wrenches, hold four hose nuts (2). Using 1 1/4-inch wrench, tighten four coupling nuts (1).

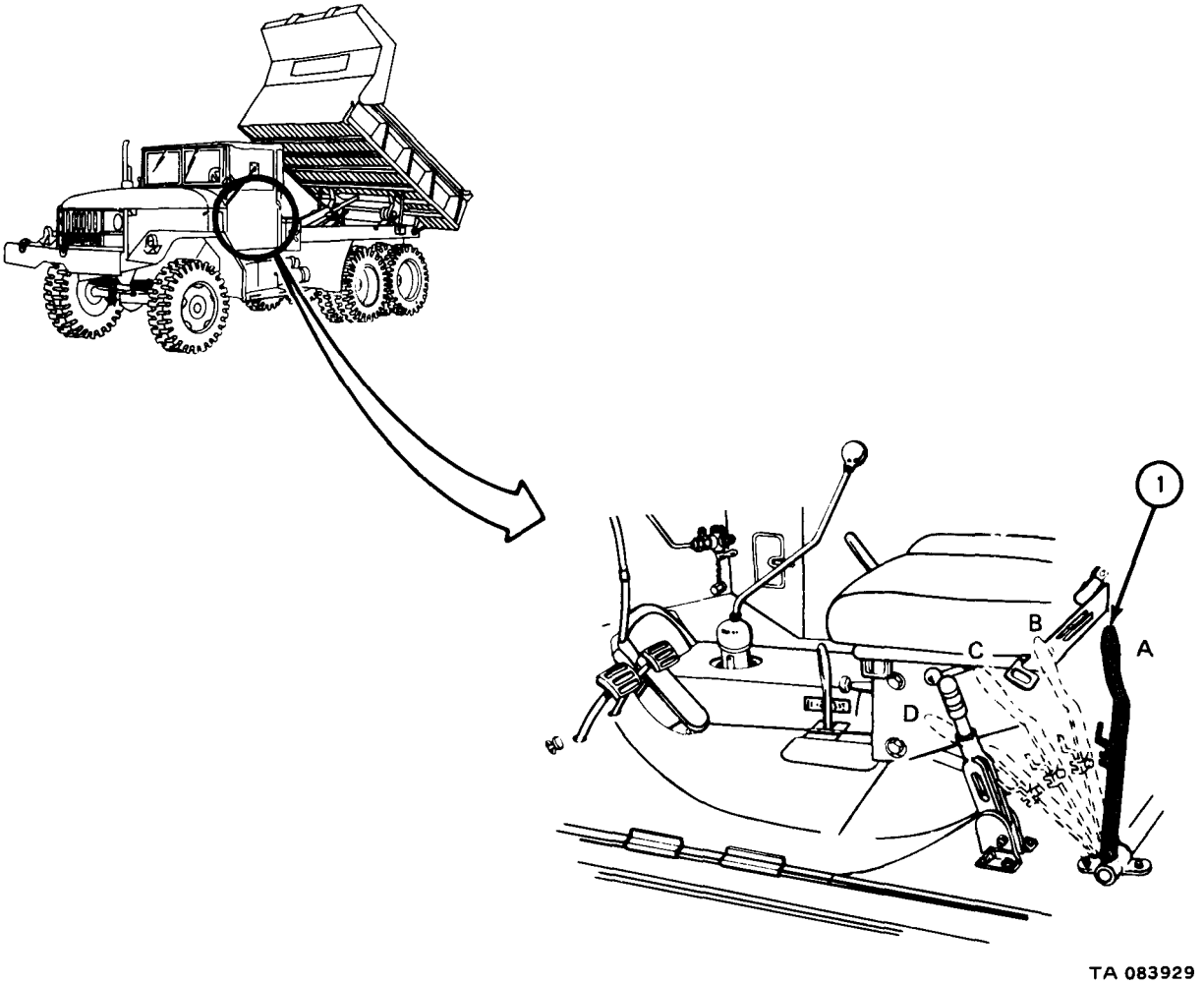
GO TO FRAME 3



FRAME 3

1. Refill hydraulic oil reservoir. Refer to LO 9-2320-209-12/1.
2. Start engine. Refer to TM 9-2320-209-10.
3. Put hoist control lever (1) in position D to raise dump body. Lower safety braces. Refer to para 19-24.
4. Raise and lower dump body several times. Refer to TM 9-2320-209-10.
5. Check hydraulic lines for leaks. If hydraulic lines leak, tighten coupling nuts just enough to stop leaks. Refer to frames 1 and 2.
6. Do steps 4 and 5 again. If hydraulic lines still leak, tell direct support maintenance.

END OF TASK



19-23. HYDRAULIC HOIST CONTROL LINKAGE REMOVAL, REPLACEMENT, AND ADJUSTMENT (TRUCK M342A2).

TOOLS: Pliers
9/16-inch wrench (2)
3/4-inch wrench
Adjustable wrench

SUPPLIES: None

PERSONNEL: Two

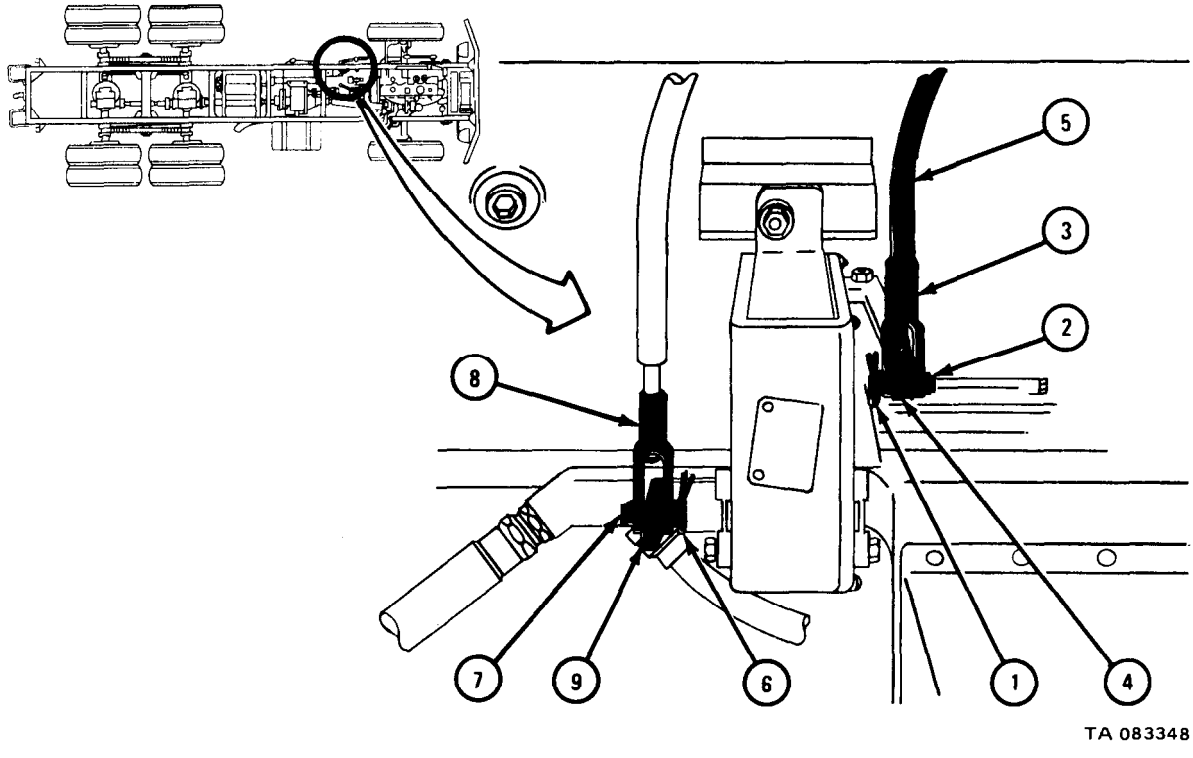
EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Removal.

FRAME 1

1. Working under truck and using pliers, take out and throw away cotter pin (1). Take out clevis pin (2).
2. Take clevis (3) off lever (4). Pull out rod assembly (5).
3. Using pliers, take out cotter pin (6). Take out clevis pin (7).
4. Take clevis (8) off lever (9).

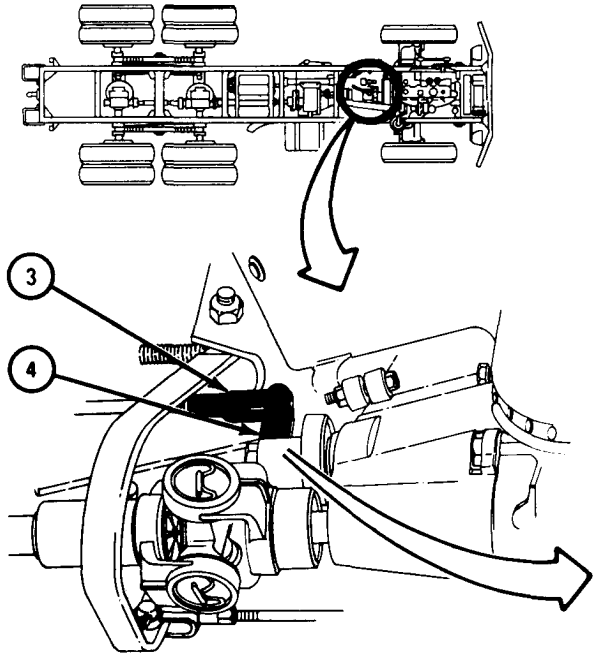
GO TO FRAME 2

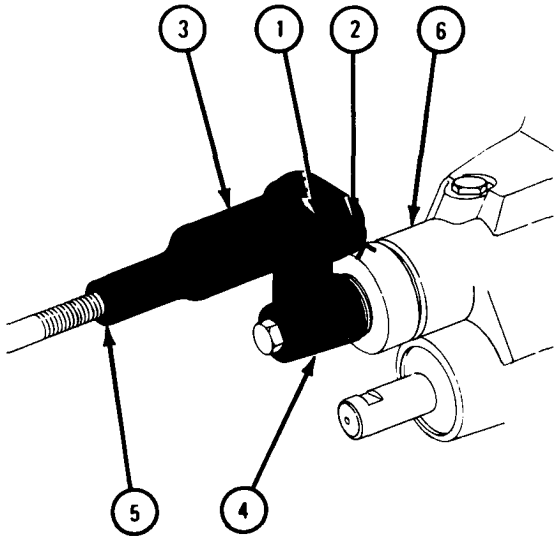


FRAME 2

1. Using pliers, take out and throw away cotter pin (1). Take out clevis pin (2) and take clevis (3) off power takeoff rod arm (4).
2. Using 3/4-inch wrench, loosen nut (5).
3. Using adjustable wrench, unscrew and take off clevis (3).
4. Using 3/4-inch wrench, if needed, unscrew and take off nut (5).

GO TO FRAME 3



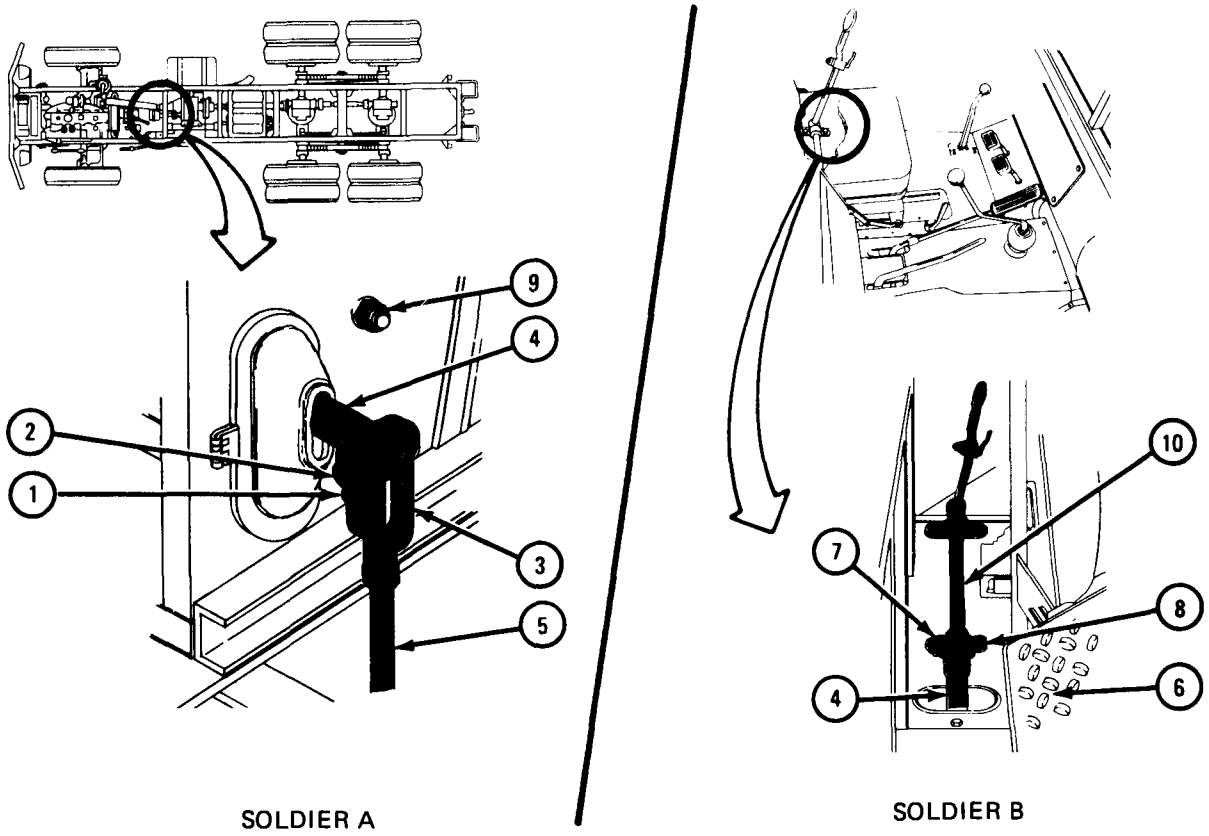


TA 083347

FRAME 3

Soldier A	1.	Working under truck and using pliers, take out and throw away cotter pin (1). Take out clevis pin (2).
	2.	Take clevis pin (3) off lever (4). Take rod (5) with clevis out of truck.
Soldier B	3.	Working in cab, put companion seat back (6) down.
	4.	Using 9/16-inch wrench, hold two screws (7) on each of two bearing brackets (8). Tell soldier A when ready.
Soldier A	5.	Using 9/16-inch wrench, unscrew and take off four nuts (9).
Soldier B	6.	Take out four screws (7). Take out control rod assembly (10) with lever (4) and two bearing brackets (8).

END OF TASK



SOLDIER A

SOLDIER B

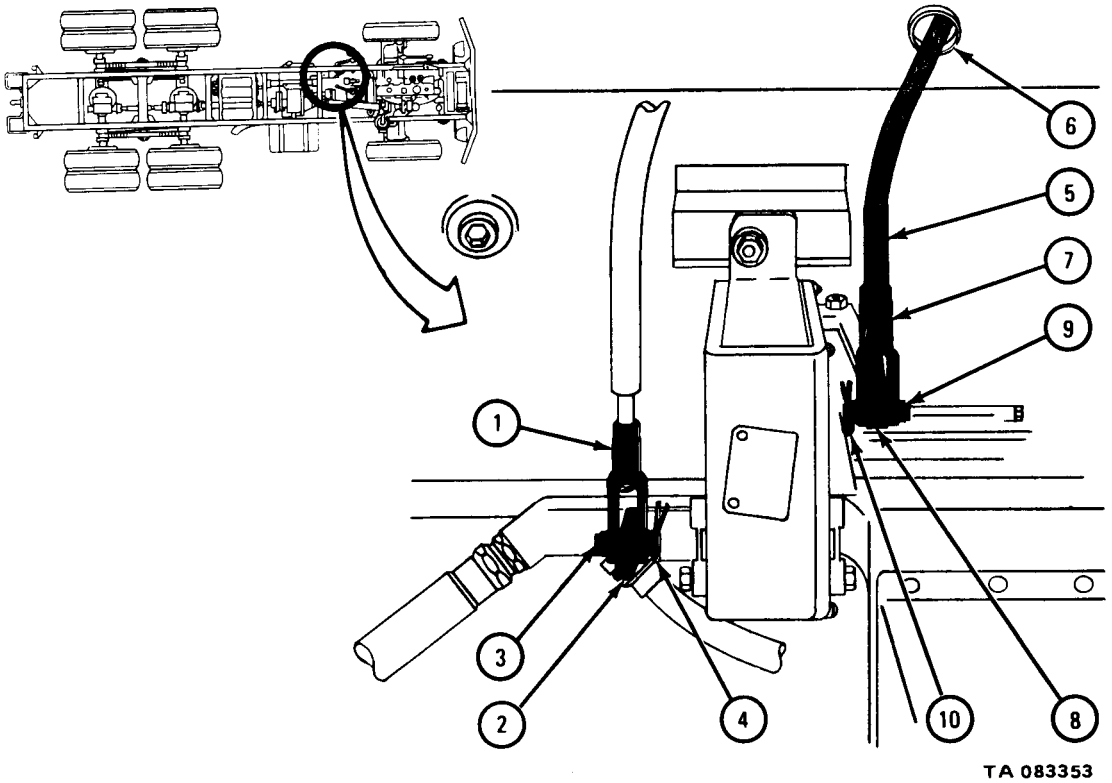
TA 083349

b. Replacement and Adjustment.

FRAME 1

1. Put clevis (1) on lever (2) and put clevis pin (3) through holes in clevis and lever.
2. Put cotter pin (4) through hole in clevis pin (3) and using pliers, bend open ends of cotter pin.
3. Put rod assembly (5) through hole in frame crossmember (6) as shown. Turn rod assembly so it is in position shown and put clevis (7) on lever (8).
4. Put clevis pin (9) through holes in clevis (7) and lever (8).
5. Put cotter pin (10) through hole in clevis pin (9) and using pliers, bend open ends of cotter pin.
6. Push lever (2) as far forward as it will go.

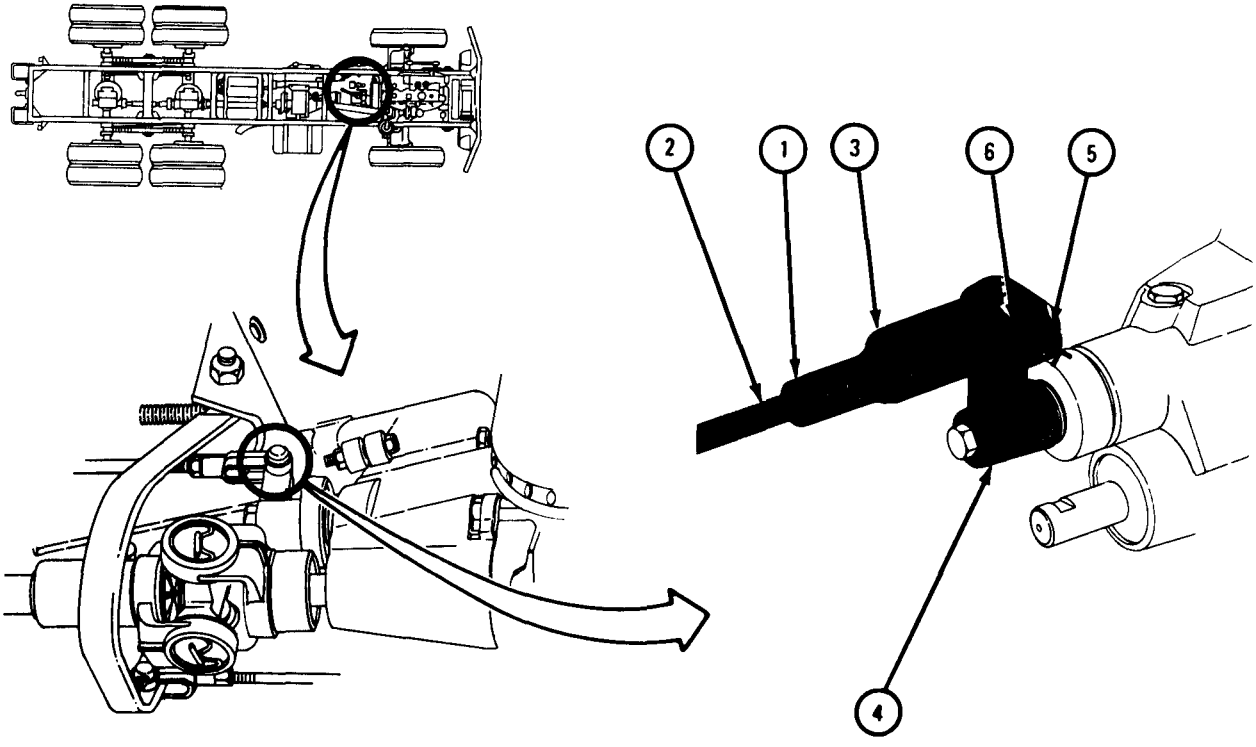
GO TO FRAME 2



FRAME 2

1. Using 3/4-inch wrench, screw on nut (1) onto rod (2).
2. Using adjustable wrench, screw on clevis (3) until holes in clevis aline with holes in arm (4). Using 3/4-inch wrench, tighten nut (1).
3. Put clevis pin (5) throuqh holes in clevis (3) and arm (4). Using pliers, put cotter pin (6) through hole in clevis pin and bend open ends of cotter pin.

GO TO FRAME 3

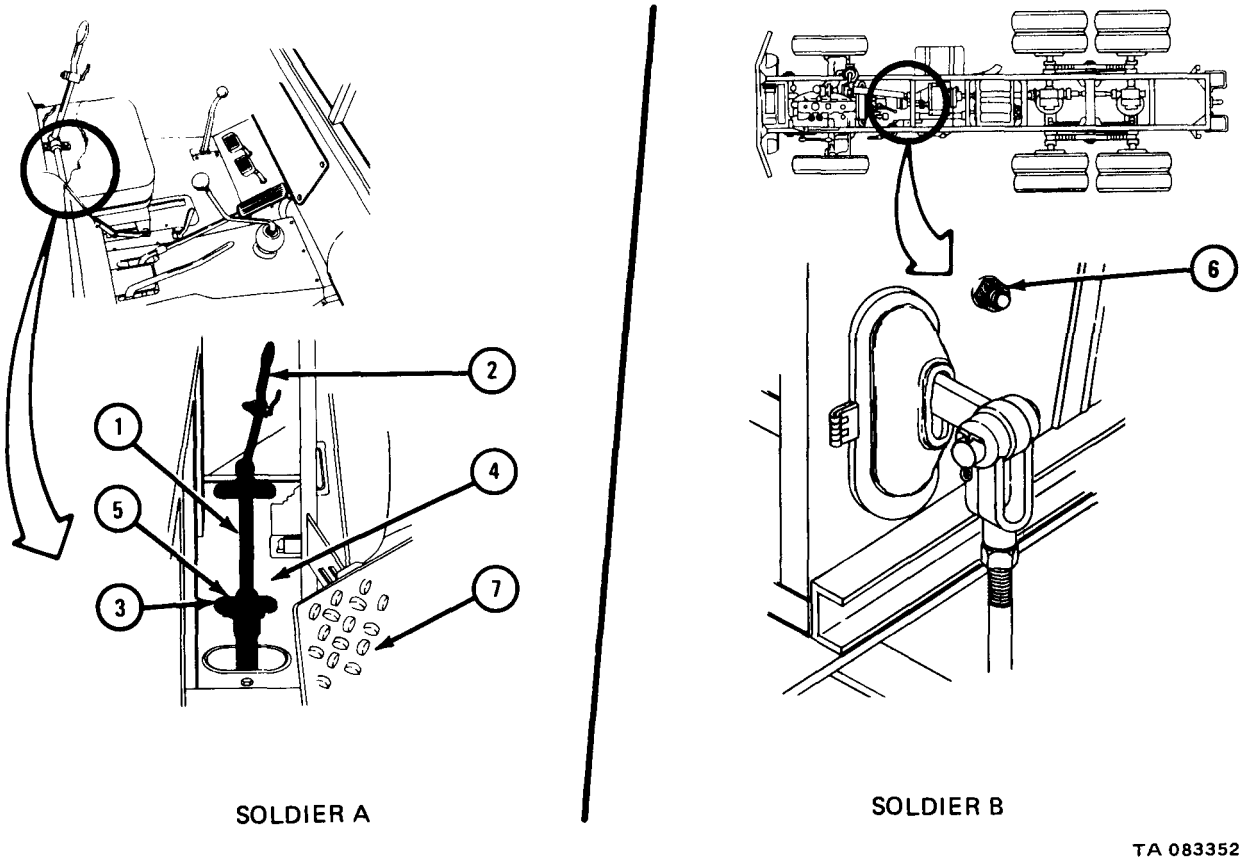


TA 083354

FRAME 4

Soldier A	1.	Put control rod assembly (1) with hoist control lever (2) through hole in cab floor. Put two bearing brackets (3) in place. Aline screw holes in bearing brackets with holes in cab floor (4).
	2.	Put two screws (5) in each of two bearing brackets (3).
	3.	Using 9/ 16-inch wrench, hold four screws (5). Tell soldier B when ready.
Soldier B	4.	Working under truck and using 9/16-inch wrench, screw on and tighten four nuts (6).
Soldier A	5.	Raise back of companion seat (7).
	6.	Lock hoist control lever (2) in off position.

GO TO FRAME 4



SOLDIER A

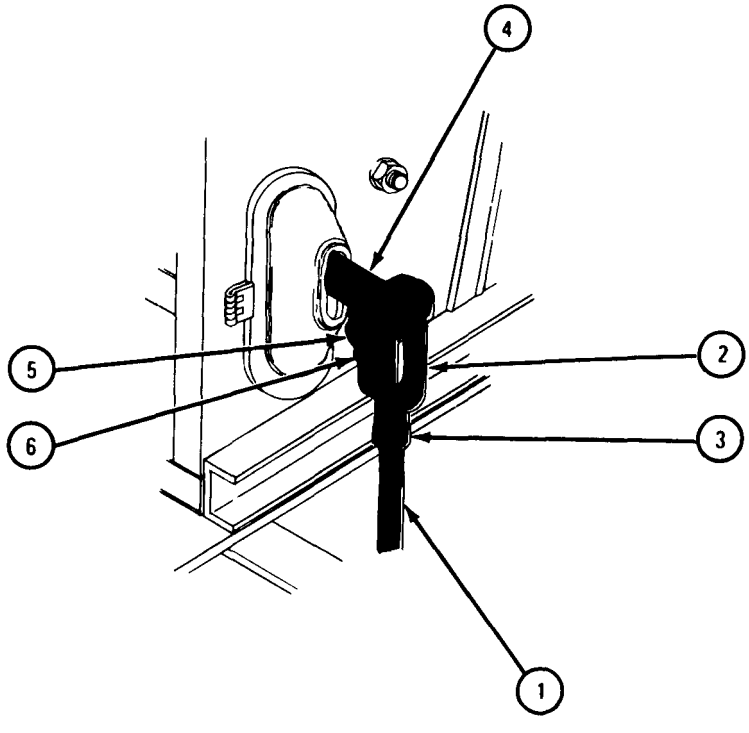
SOLDIER B

TA 083352

FRAME 4

1. Put rod (1) with clevis (2) in place under truck.
2. Using 3/4-inch wrench, loosen nut (3). Turn clevis (2) until holes aline with holes in lever (4). Tighten nut (3).
3. Put clevis pin (5) through holes in clevis (2) and lever (4).
4. Put cotter pin (6) through hole in clevis pin (5) and using pliers, bend open ends of cotter pin.

END OF TASK



TA 083357

19-24. DUMP BODY SAFETY BRACE LOCKING AND UNLOCKING (TRUCK M342A2).

TOOLS: None

SUPPLIES: None

PERSONNEL: One

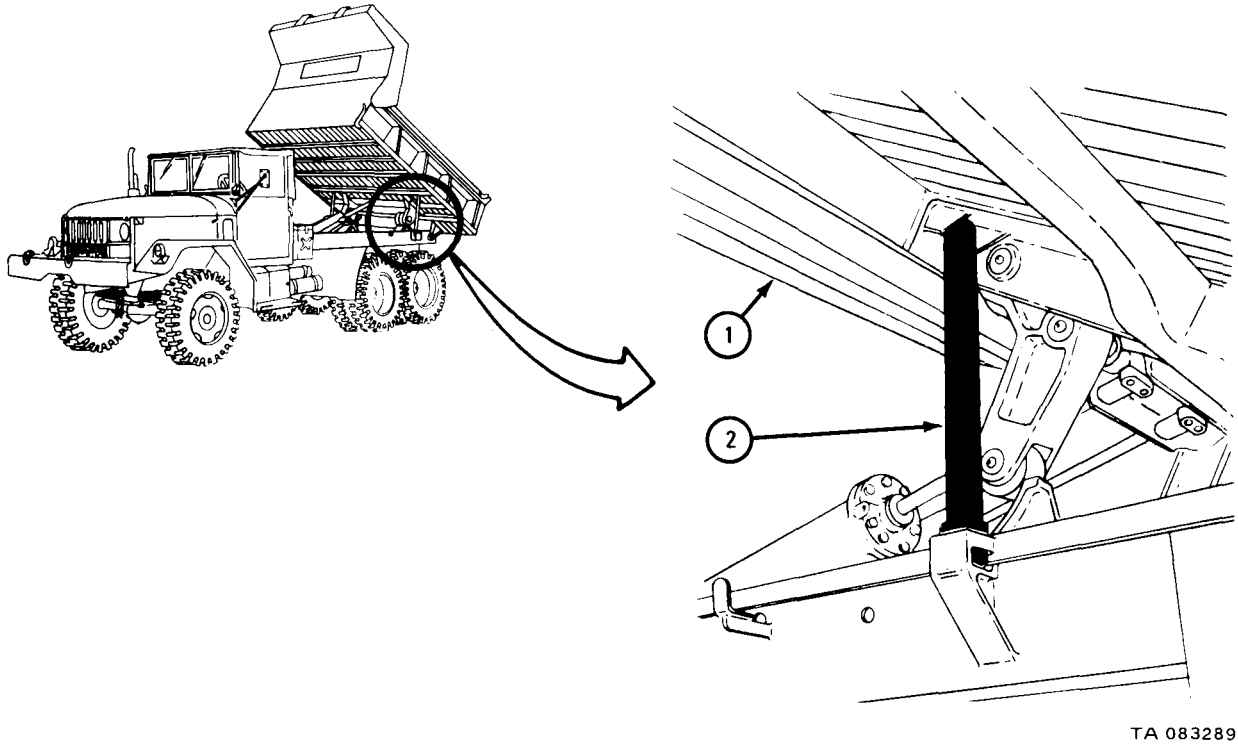
EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Locking.

FRAME 1

1. Start engine and raise dump body (1). Refer to TM 9-2320-209-10.
2. Swing two hoist braces (2), one on each side, into upright position under dump body (1).
3. Lower dump body (1) onto hoist braces (2) and stop engine. Refer to TM 9-2320-209-10.

END OF TASK

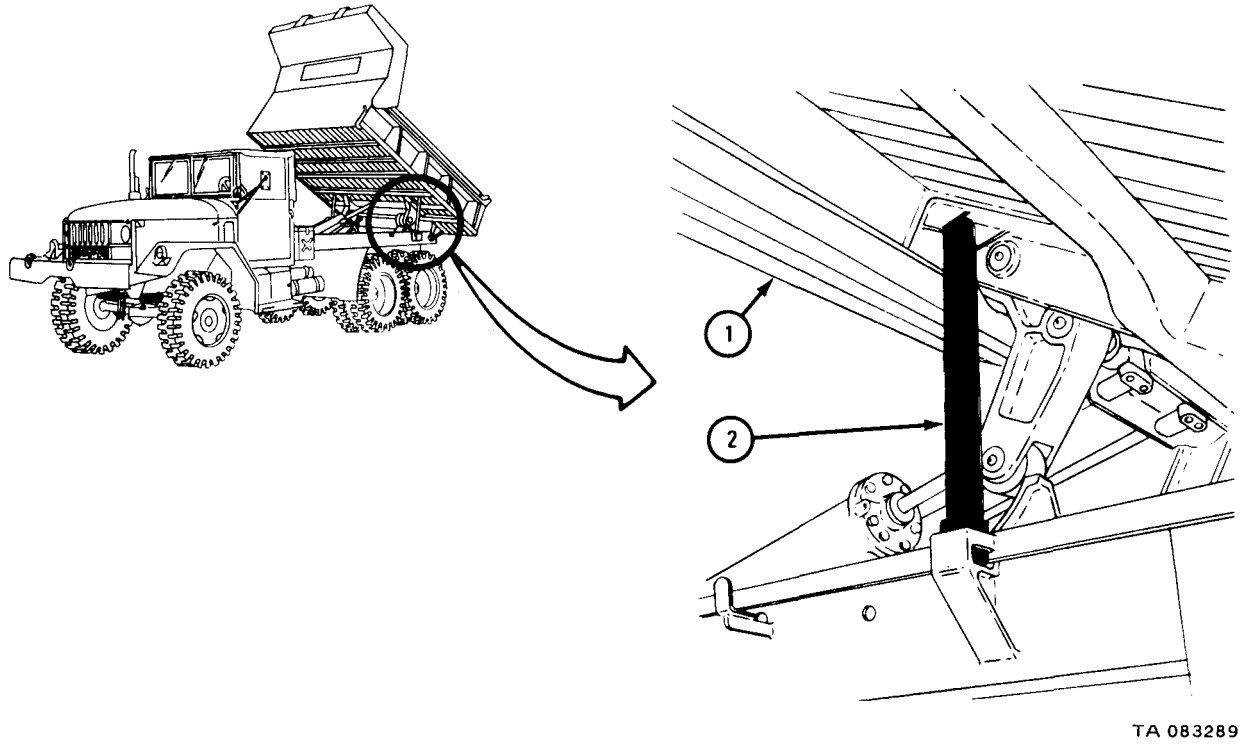


b. Unlocking.

FRAME 1

1. Start engine and raise dump body (1) to free two hoist braces (2). Refer to TM 9-2320-209-10.
2. Swing two hoist braces (2), one on each side, down to stowed position.
3. Lower dump body (1) and stop engine. Refer to TM 9-2320-209-10.

END OF TASK



Section III. POWER TAKEOFF CONTROLS AND LINKAGE

19-25. TRANSMISSION POWER TAKEOFF SHIFT LINKAGE REMOVAL, REPLACEMENT, CHECKOUT AND ADJUSTMENT.

TOOLS: Pliers
5/8-inch wrench
3/4-inch wrench

SUPPLIES: None

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

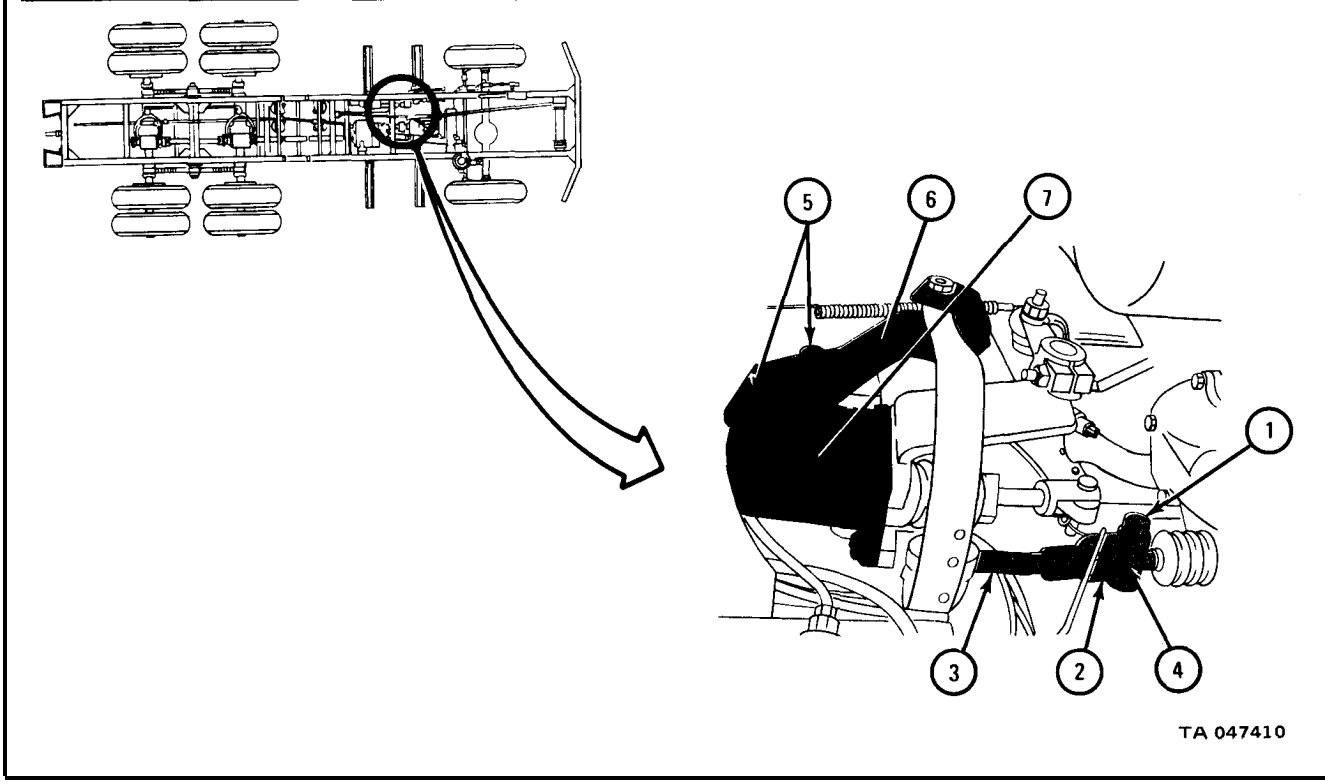
a. Preliminary Procedure. Remove air hydraulic shield. Refer to Part 2, para 13-14.

b. Removal.

FRAME 1

1. Pull and turn poppet (1) on yoke end (2) of clevis (3).
2. Take off yoke end (2) from transmission power takeoff shifter shaft (4).
3. Using 5/8-inch wrench, unscrew and take out two screws and lockwashers (5), holding power takeoff shifting lever support (6) to master cylinder (7).
4. Take off transmission power takeoff shift linkage.

END OF TASK

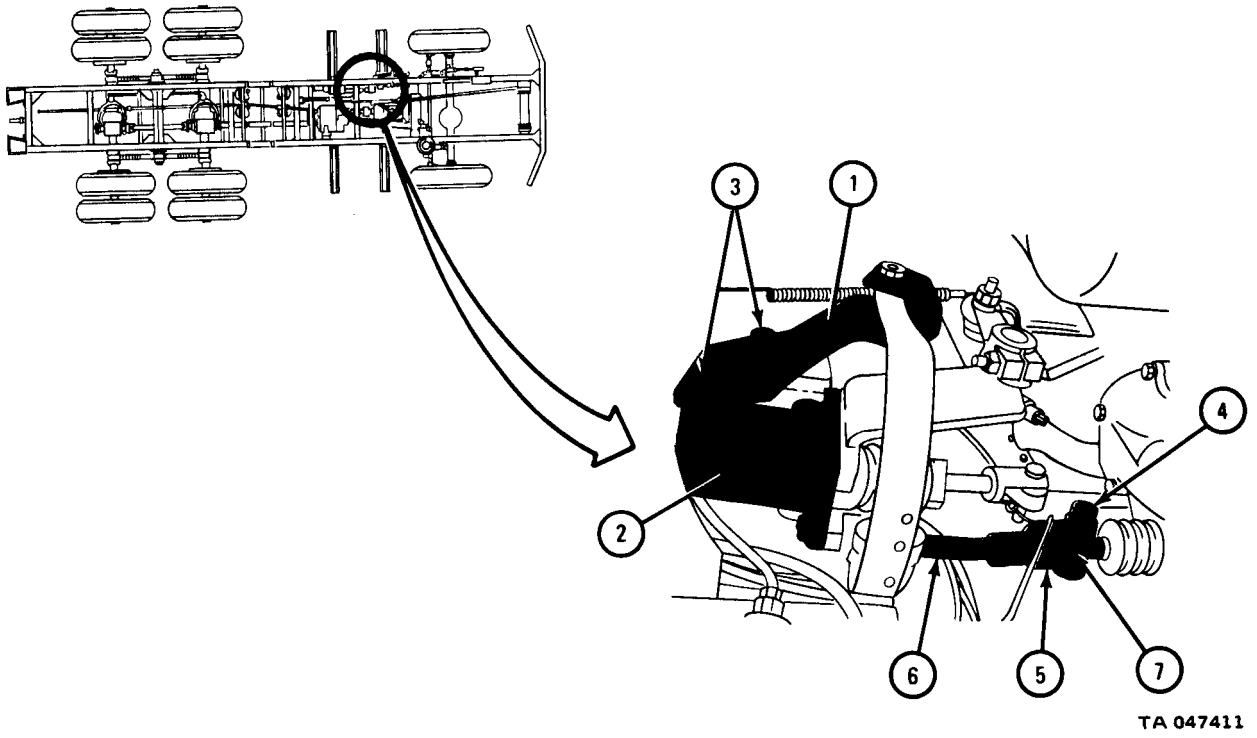


c. Replacement.

FRAME 1

1. Put transmission power takeoff shift linkage in place and aline holes in shifting lever support (1) with holes in master cylinder (2).
2. Put two screws and lockwashers (3) through holes in shifting lever support (1) and in holes in master cylinder (2).
3. Using 5/8-inch wrench, tighten screws (3).
4. Pull out poppet (4) on yoke end (5) of power takeoff shifting lever rod (6).
5. Aline yoke end (5) with hole in power takeoff shifter shaft (7). Turn poppet (4) and let it go in hole in shifter shaft (7).

END OF TASK

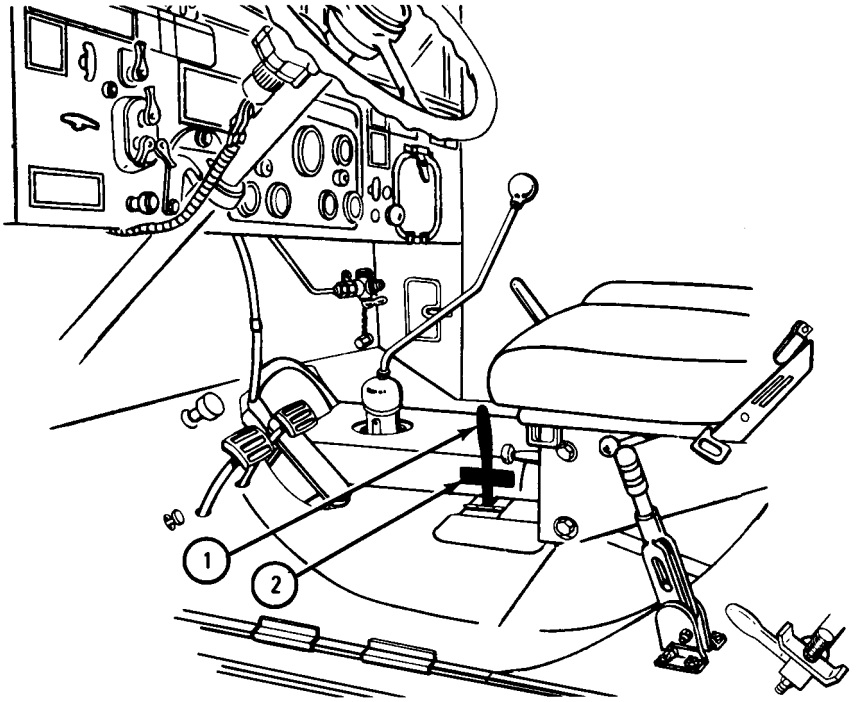


d. Checkout.

FRAME 1

1. Move transmission power takeoff shifting lever (1) to all positions shown on data plate (2).
2. Lever (1) should hold in each position. If it does not hold, adjust linkage. Refer to para 19-25e.

END OF TASK



TA 047412

e. Adjustment.

FRAME 1

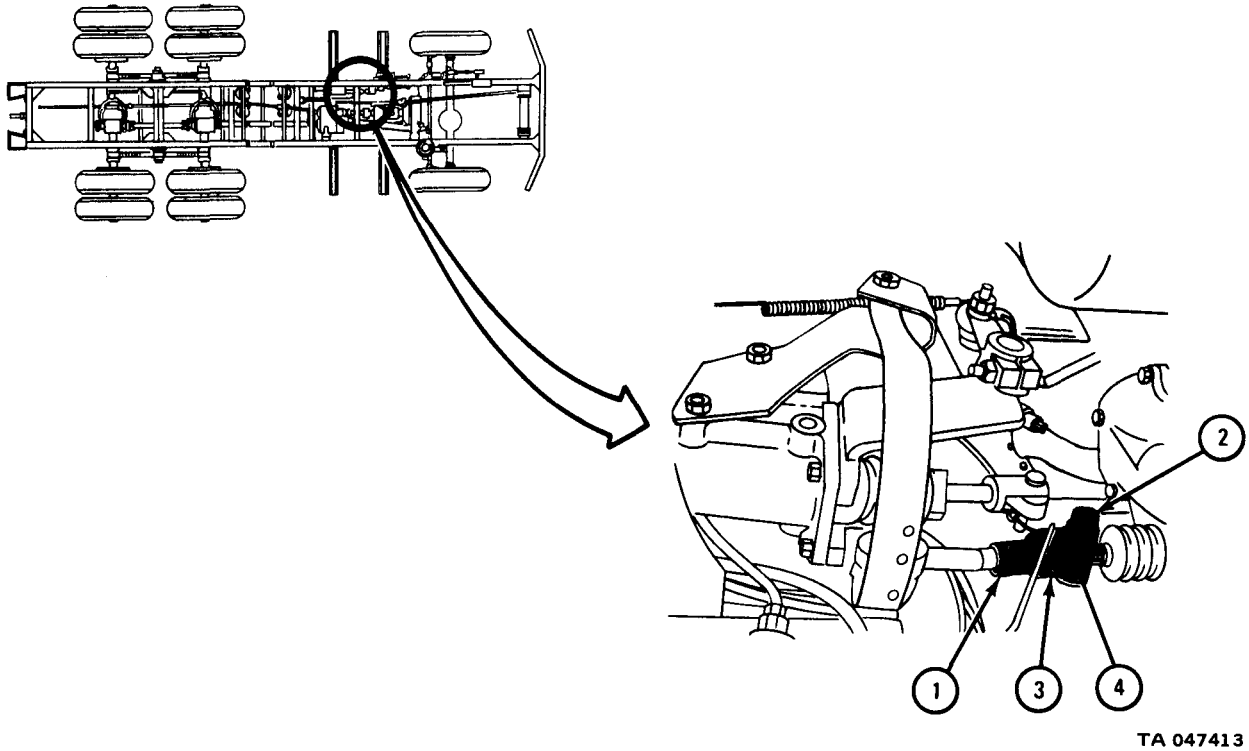
1. Using 3/4-inch wrench, loosen locknut (1).
2. Pull out poppet (2) on yoke end (3).
3. Take off yoke end (3) from shifter shaft (4).
4. Turn yoke end (3) in or out as necessary.
5. Pull poppet (2) out, aline yoke end (3) with shifter shaft (4), and let poppet (2) go into hole in shifter shaft (4).
6. Tighten locknut (1).
7. Check shifting lever alinement. Refer to para 19-25d.

NOTE

Follow-on Maintenance Action Required:

Replace air hydraulic shield. Refer to Part 2, para 13-14.

END OF TASK



19-26. POWER DIVIDER CONTROLS AND LINKAGE REMOVAL, REPLACEMENT, AND ADJUSTMENT (TRUCK M764).

TOOLS: Pliers
5/8-inch wrench
11/16-inch wrench

SUPPLIES: None

PERSONNEL: Two

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

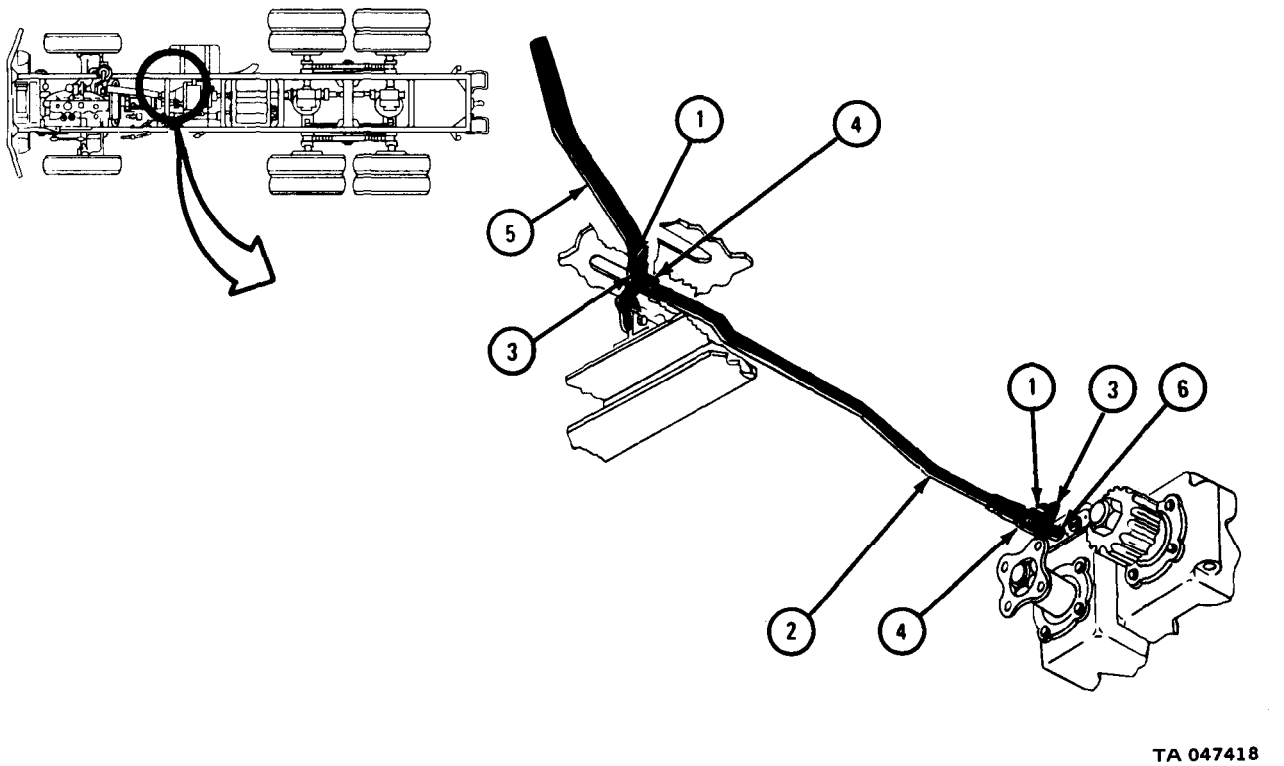
a. Preliminary Procedure. Remove front and rear tunnel. Refer to Part 3, para 18-5.

b. Removal.

FRAME 1

1. Using pliers, pull out cotter pins (1) at both ends of control rod assembly (2).
2. Take pins (3) out of clevis rod ends (4).
3. Take control rod assembly (2) off of power divider control lever (5) and power divider shifter shaft (6).

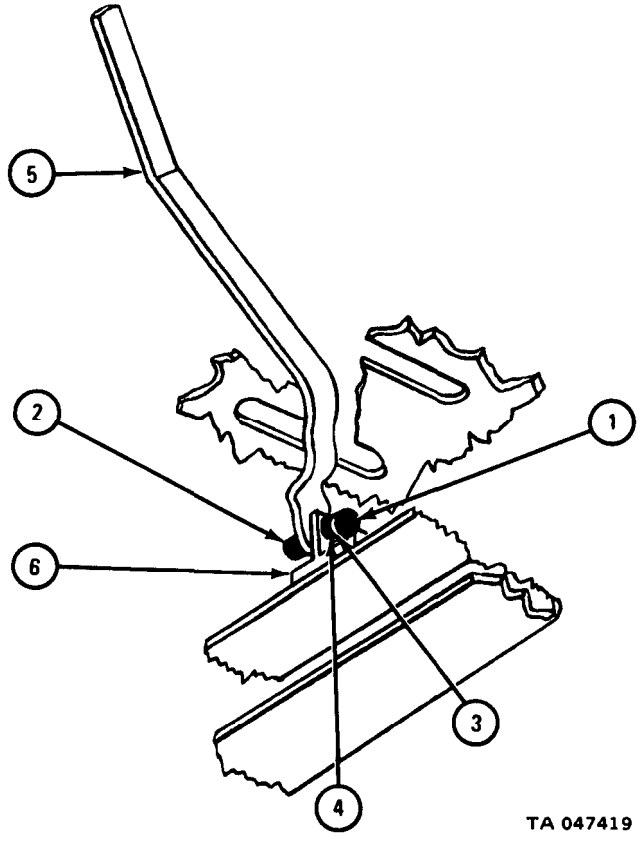
GO TO FRAME 2



FRAME 2

1. Using 5/8-inch and 11/16-inch wrenches, hold screw (1) and unscrew and take off nut (2).
2. Take screw (1), lockwasher (3), and spacer (4) out of power divider control lever (5) and bracket (6).

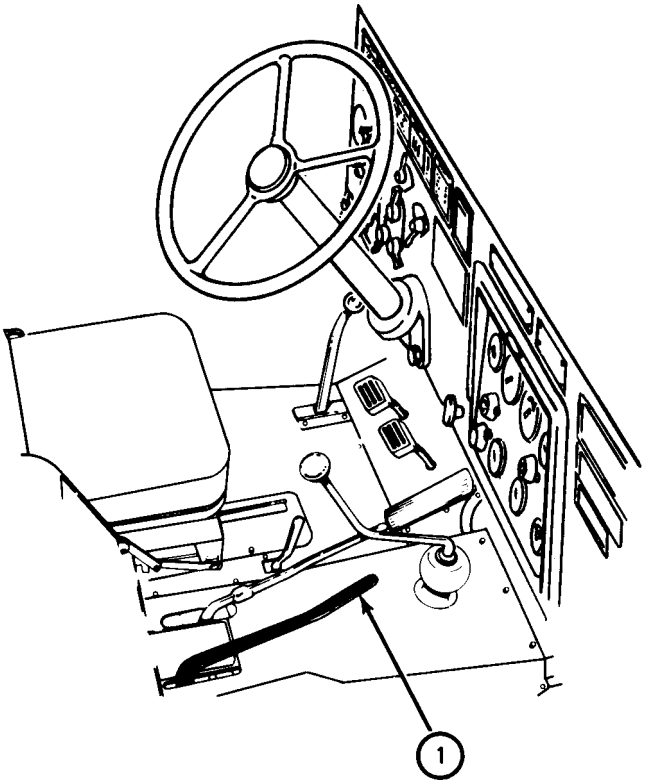
GO TO FRAME 3



FRAME 3

1. From inside of driver's compartment, lift out power divider control lever (1).

END OF TASK



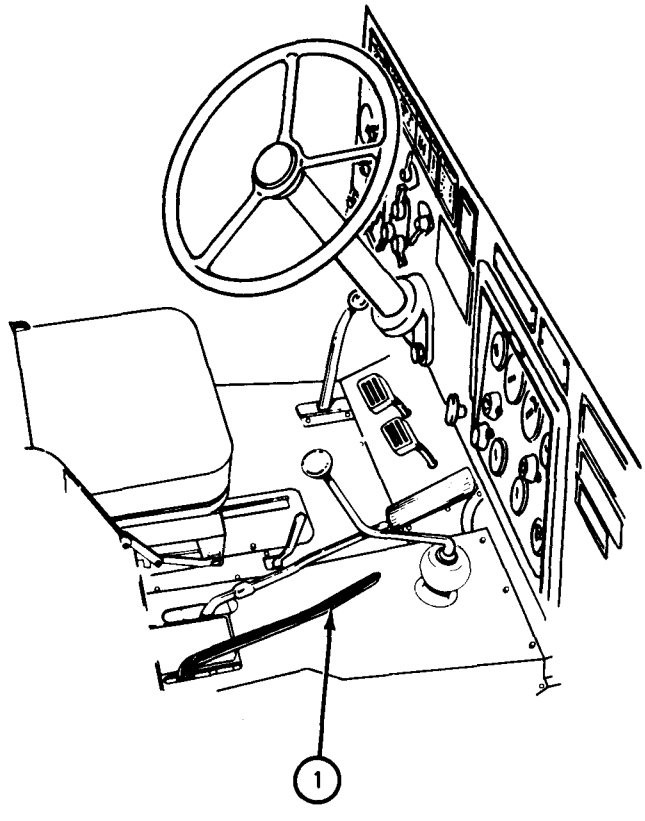
TA 047420

c. Replacement.

FRAME 1

1. Put power divider control lever (1) in place as shown.

GO TO FRAME 2

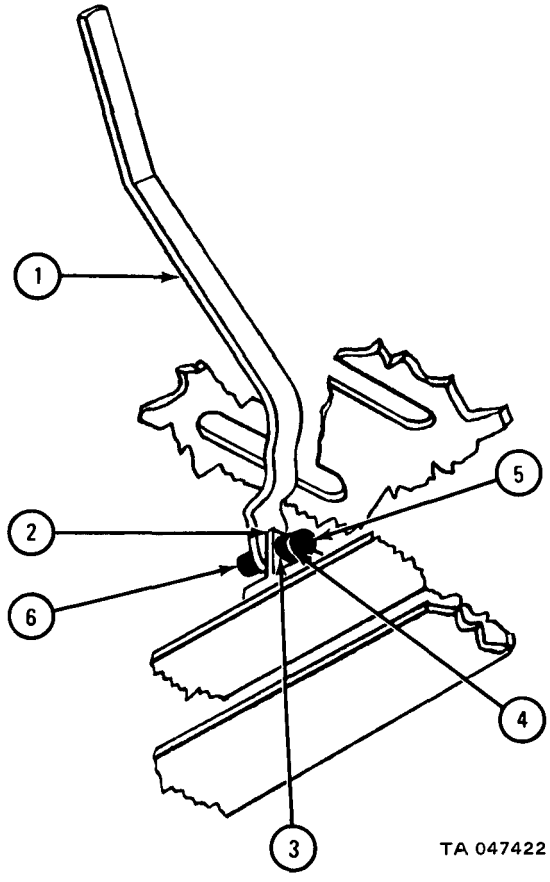


TA 047421

FRAME 2

1. Aline lower hole in power divider control lever (1) with hole in bracket (2).
2. Put spacer (3) into hole in control lever (1).
3. Put lockwasher (4) on screw (5) and put screw (5) through lower hole in control lever (1) and bracket (2).
4. Screw on nut (6).
5. Using 5/8-inch wrench, hold screw (5) and using 11/16-inch wrench, tighten nut (6).

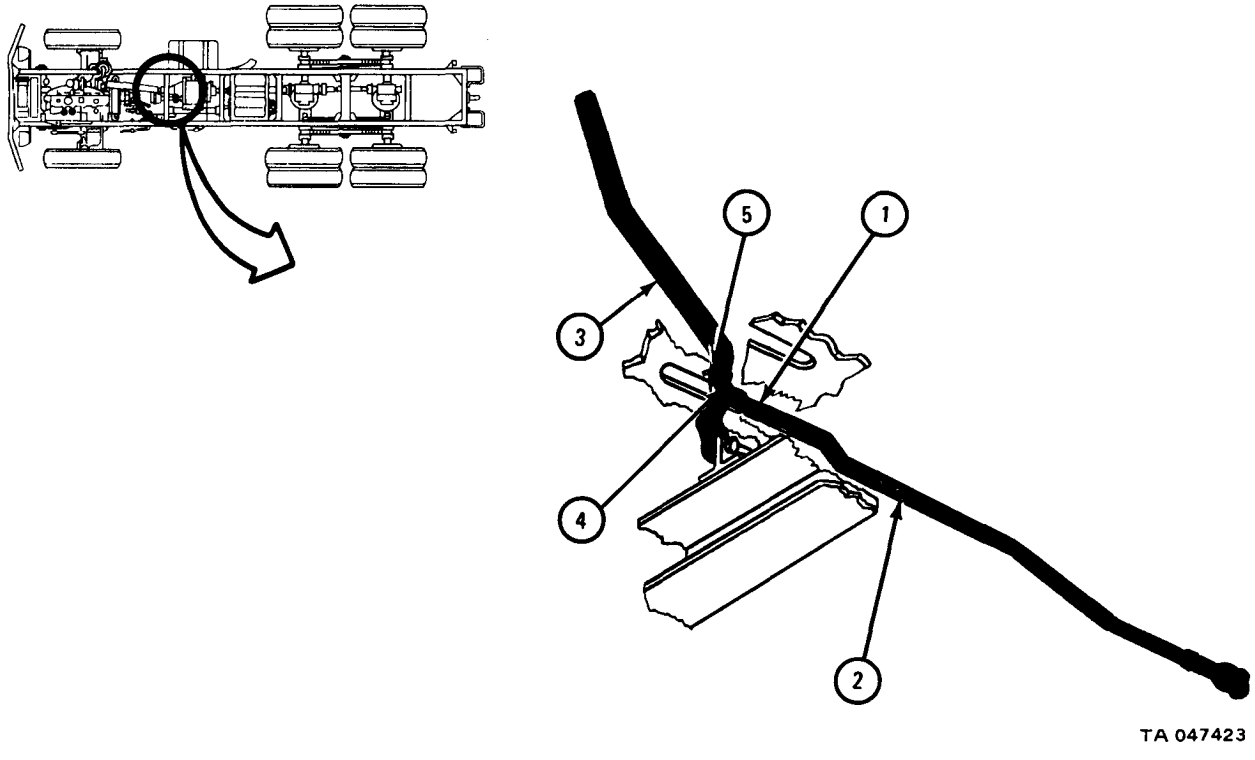
GO TO FRAME 3



FRAME 3

1. Place clevis rod end (1) of control rod assembly (2) on control lever (3).
2. Aline holes on clevis rod end (1) with hole in control lever (3).
3. Put pin (4) through holes in clevis rod end (1) and control lever (3).
4. Put cotter pin (5) in hole at end of pin (4).
5. Using pliers, bend open ends of cotter pin (5).

GO TO FRAME 4



FRAME 4

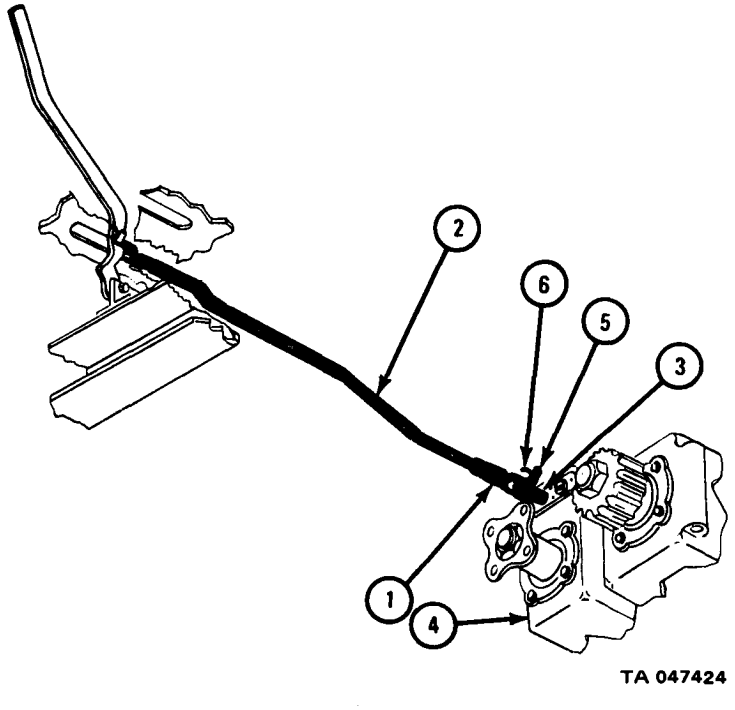
1. Place clevis rod end (1) of control rod assembly (2) on shifter rod (3) coming out of power divider (4).
2. Aline holes in clevis rod end (1) with hole in shifter rod (3).
3. Put pin (5) through holes in clevis rod end (1) and shifter rod (3).
4. Put cotter pin (6) in hole in pin (5).
5. Using pliers, bend open ends of cotter pin (6).

NOTE

Follow-on Maintenance Action Required:

Adjust linkage. Refer to para 19-26d.

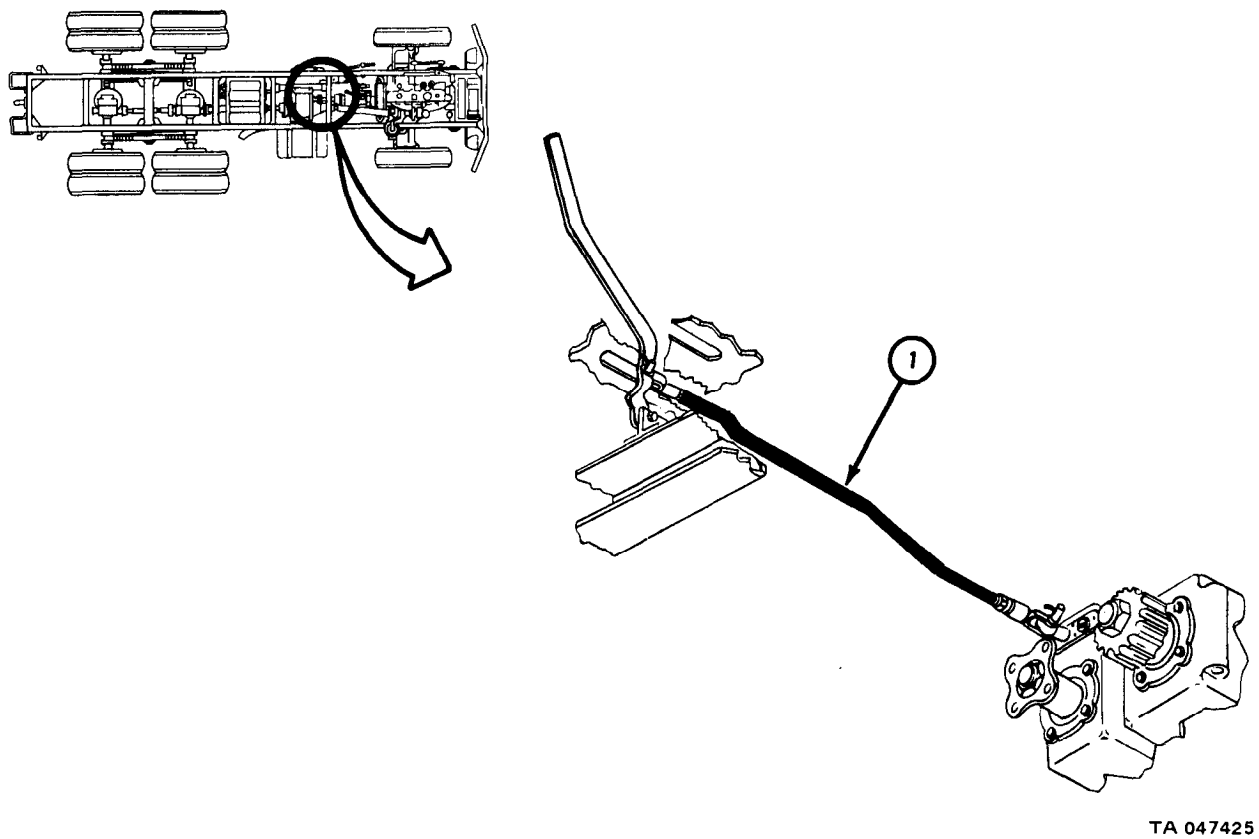
END OF TASK



d. Adjustment.

FRAME 1

Soldier A 1. Standby at power divider linkage control rod (1) under truck.
GO TO FRAME 2

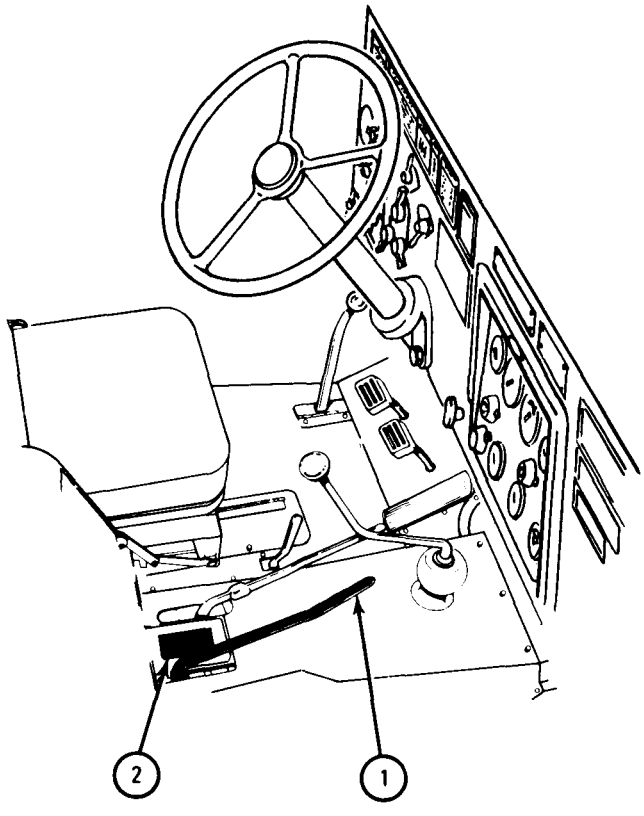


FRAME 2

Soldier B

1. Shift power divider control lever (1) through all four operating positions shown on data plate (2).

GO TO FRAME 3



TA 047426

FRAME 3

Soldier A

1. While soldier B is shifting power divider control lever (1), watch linkage control rod (2).
2. If power divider control lever (1) goes into all four positions and linkage control rod (2) does not touch transfer transmission case (3), no adjustment is needed.
3. If power divider control lever (1) does not go into all four positions or if linkage control rod (2) touches transfer transmission case (3) or flange (4), do steps 4 through 8.
4. Using 5/8-inch wrench, loosen nuts (5) at each end of linkage control rod (2).
5. Take off control rod assembly (2). Refer to para 19-26b.
6. Using 5/8-inch wrench, turn clevis rod ends (6) in or out as needed and tighten nuts (5).
7. Put back control rod assembly (2). Refer to para 19-26c.
8. If needed, do steps 4 through 7 again.

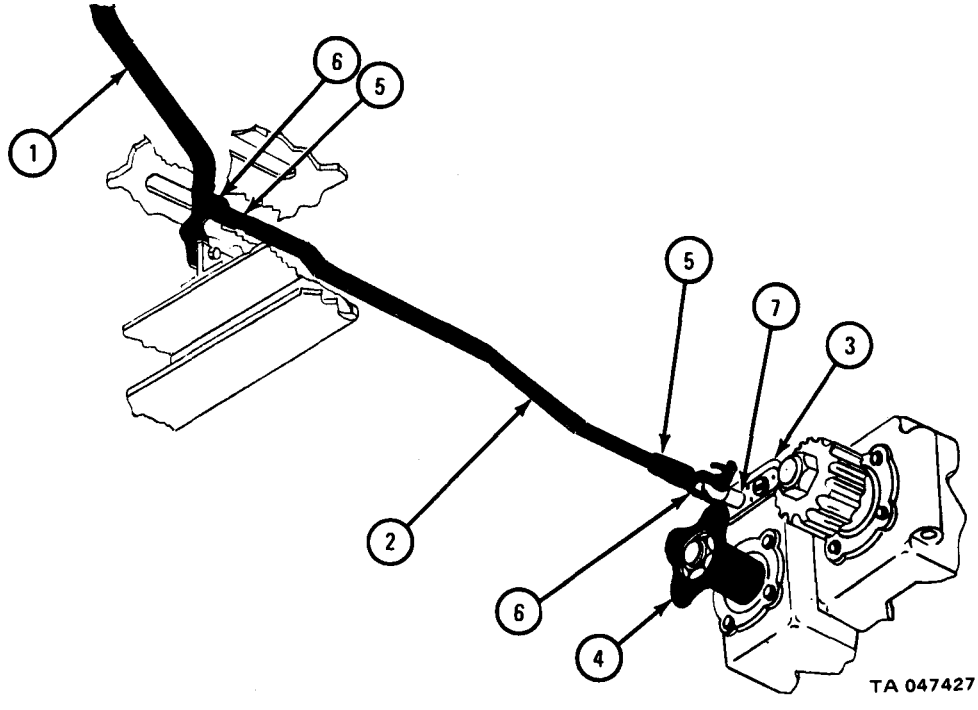
NOTE

If adjustment cannot be made or if power divider shifter shaft (7) requires adjustment, tell direct support maintenance.

Follow-on Maintenance Action Required:

Replace front and rear tunnel. Refer to Part 3, para 18-5.

END OF TASK



19-27. POWER DIVIDER PROPELLER SHAFT ASSEMBLY REMOVAL AND REPLACEMENT (TRUCK M764).

TOOLS: Prybar
9/16-inch wrench (2)
Torque wrench, 150 pound-feet capacity

SUPPLIES: None

PERSONNEL: One

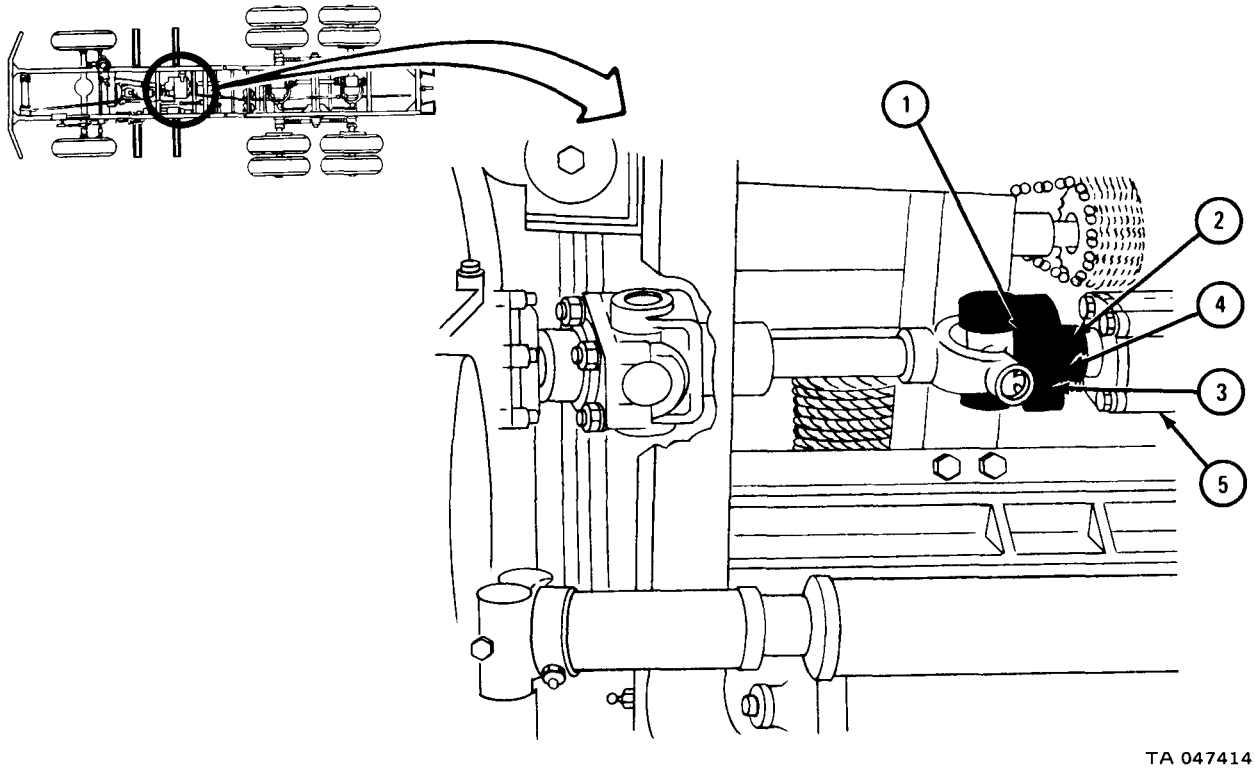
EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Removal.

FRAME 1

1. Using 9/16-inch wrench, hold four cap screws (1).
2. Using 9/16-inch wrench, unscrew and take off four self-locking nuts and lockwashers (2).
3. Take out four cap screws (1) holding flange yoke (3) to companion flange (4) on power divider (5).

GO TO FRAME 2



FRAME 2

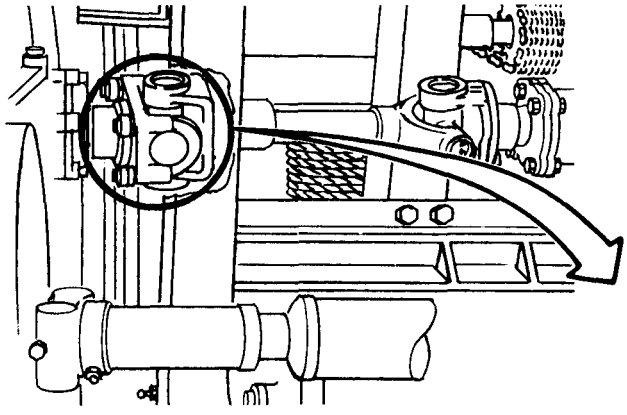
1. Use prybar to keep propeller shaft assembly (1) from turning.
2. Using 9/16-inch wrench, unscrew and take off four nuts (2) and lockwashers (3) from two U-bolts (4).

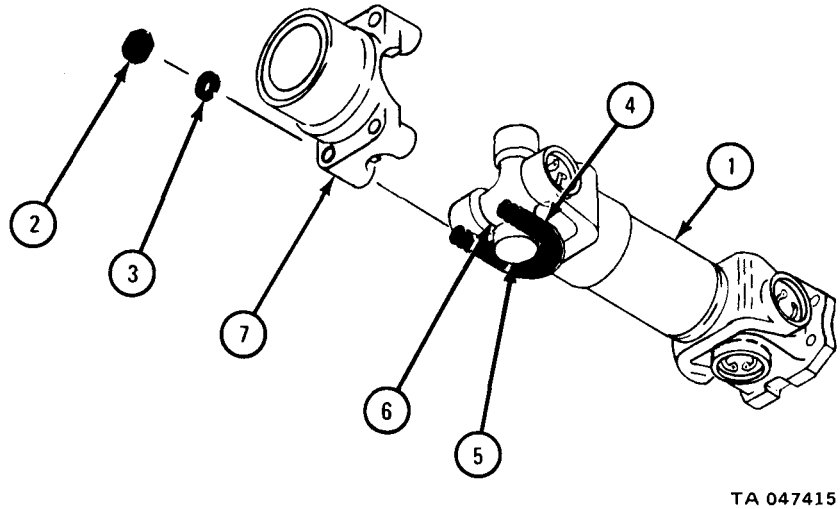
NOTE

Be careful not to let bearing caps (5) slip off journal (6).

3. Take two U-bolts (4) out of end yoke (7) and off bearings (5).
4. Shorten propeller shaft assembly (1) by pushing ends together and take propeller shaft assembly out from under truck.

END OF TASK





TA 047415

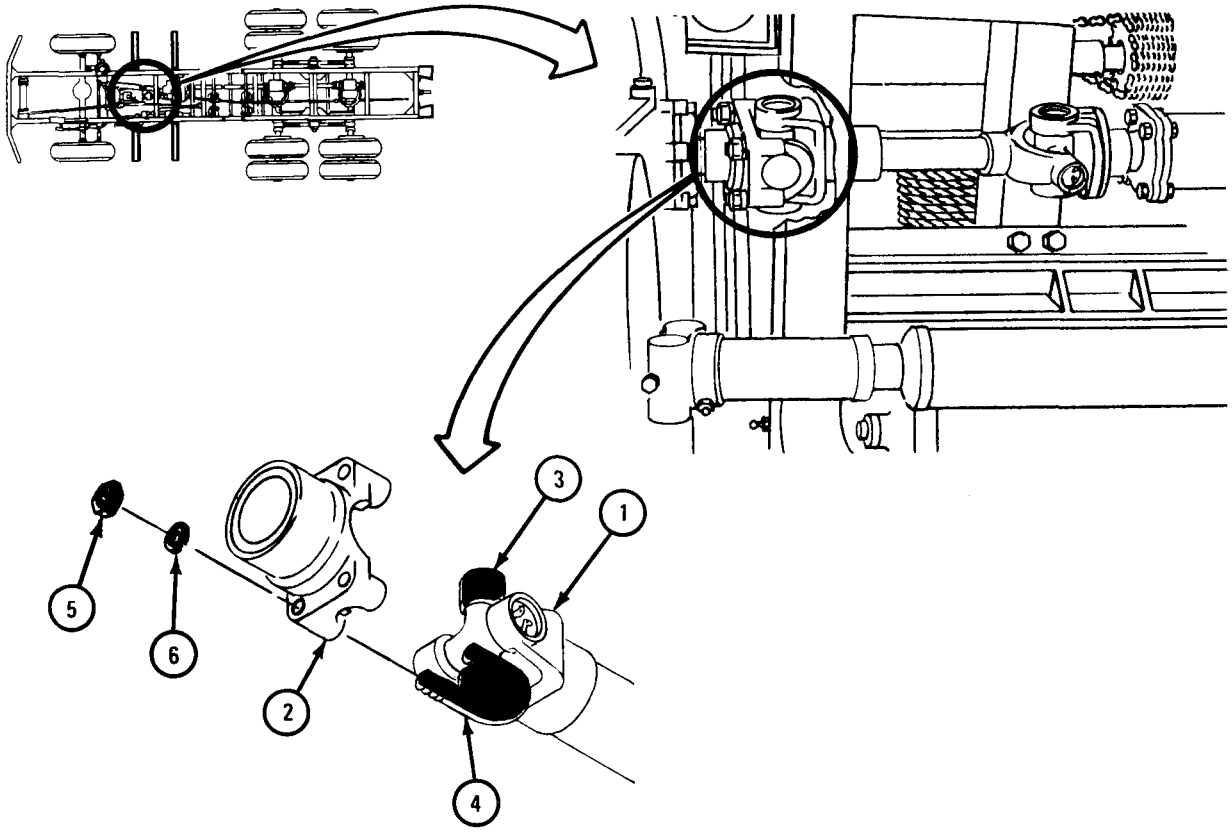
b. Repair. Repair is limited to removal and replacement of universal joints. Refer to Part 3, para 10-5.

c. Replacement.

FRAME 1

1. Put sleeve yoke end of propeller shaft (1) in place at power takeoff yoke end (2). Be careful not to let bearing caps (3) slip off.
2. Put two U-bolts (4) over bearing caps (3) and into yoke end (2).
3. Screw on and hand tighten four nuts (5) and lockwashers (6) onto U-bolts (4).

GO TO FRAME 2

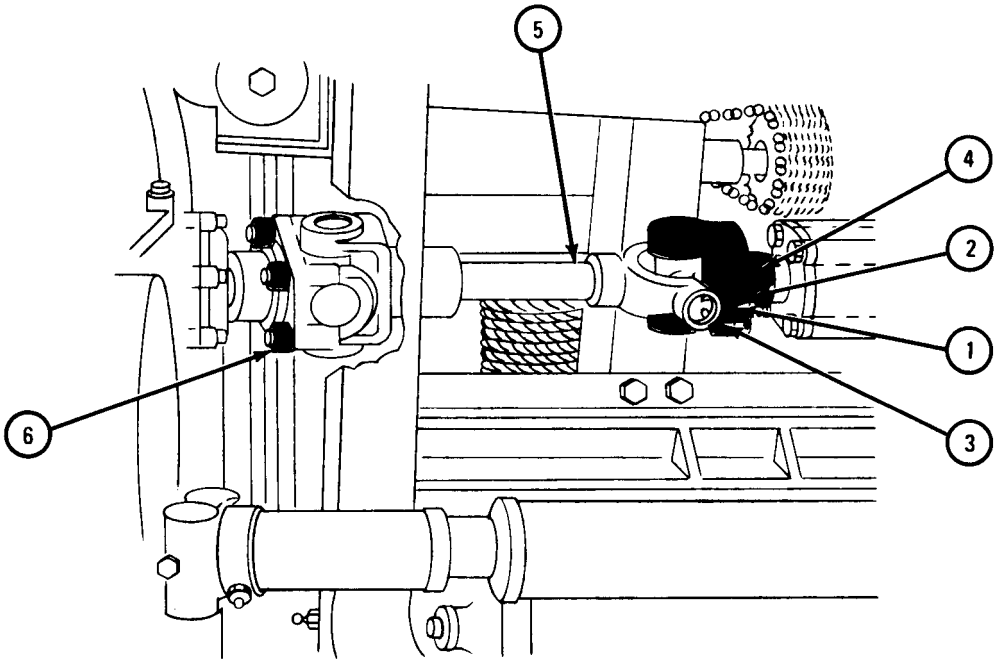


TA 047416

FRAME 2

1. Aline holes in flange yoke (1) with holes in companion yoke (2) and put in four capscrews (3).
2. Using 9/16-inch wrenches, screw on and tighten four capscrews (3) and four nuts and lockwashers (4).
3. Use prybar to keep propeller shaft assembly (5) from turning.
4. Using torque wrench, tighten locknuts (6) to 25 to 29 pound-feet.

END OF TASK



TA 047417

CHAPTER 20

BUMPER GUARDS GROUP MAINTENANCE

Section I. SCOPE

20-1. EQUIPMENT ITEMS COVERED. This chapter gives equipment maintenance procedures for bumper brackets, guards, and protective devices for which there are authorized corrective maintenance tasks at the organizational maintenance level.

20-2. EQUIPMENT ITEMS NOT COVERED . All equipment items for which corrective maintenance is authorized at the organizational maintenance level are covered in this chapter.

Section II. BUMPER BRACKETS , GUARDS, AND PROTECTIVE DEVICES

20-3. HEADLIGHT GUARD REMOVAL AND REPLACEMENT .

NOTE

This task is the same for the right and left headlight guards, This task is shown for the left headlight guard. On some trucks, the headlight is on the bottom and on other trucks the headlight is on the top. This task is the same for both.

TOOLS : 9/16-inch wrench (2)
3/4-inch wrench (2)

SUPPLIES : None

PERSONNEL : One

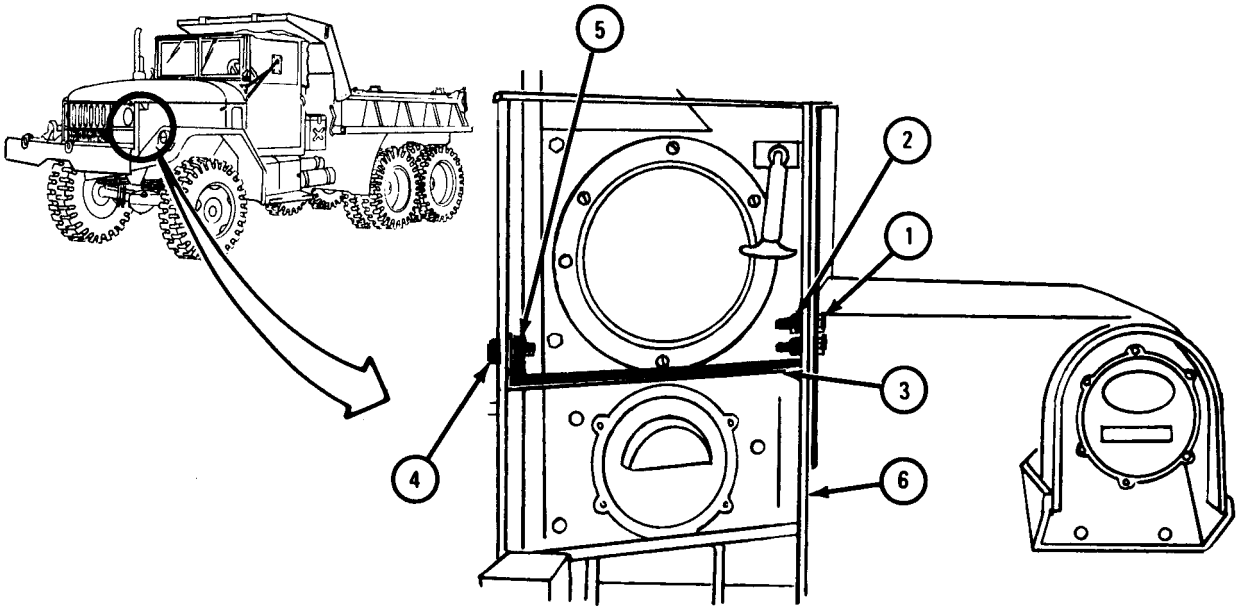
EQUIPMENT CONDITION : Truck parked, engine off, handbrake set.

a. Removal.

FRAME 1

1. Using 9/16-inch wrenches, hold two screws (1) and unscrew and take off two nuts (2). Take screws out of headlight guard (3).
2. Using 3/4-inch wrenches, hold screw (4) and unscrew and take off nut (5).
3. Take screw (4) out of headlight guard (3).
4. Take headlight guard (3) off screw (4) and out of brush guard (6).

END OF TASK



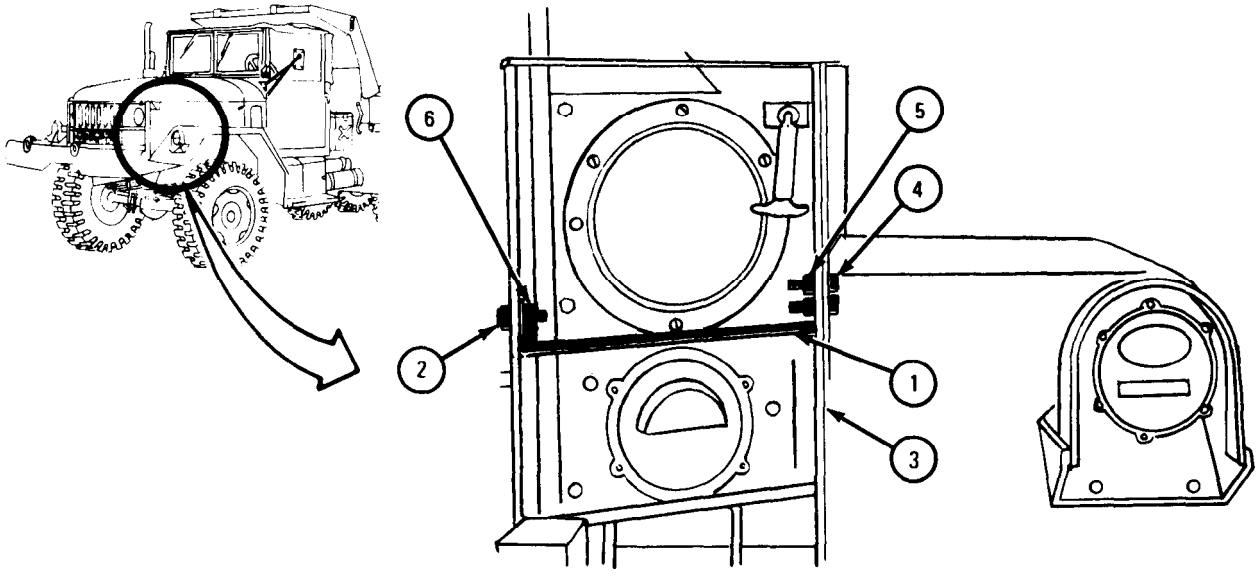
TA 047430

b. Replacement.

FRAME 1

1. Slide headlight guard (1) on screw (2).
2. Put headlight guard (1) in place in brush guard (3).
3. Aline holes in headlight guard (1) with holes in brush guard (3).
4. Put two screws (4) through holes in headlight guard (1) and brush guard (3)
5. Using 9/16-inch wrench, screw on two nuts (5).
6. Using 9/16-inch wrenches, hold two screws (4) and tighten two nuts (5).
7. Using 3/4-inch wrenches, hold screws (2) and screw on and tighten nut (6).

END OF TASK



TA 047431

CHAPTER 21

BODY ACCESSORY ITEMS GROUP MAINTENANCE

Section I. SCOPE

21-1. EQUIPMENT ITEMS COVERED . This chapter gives equipment maintenance procedures for canvas and cab accessory items and data plates for which there are authorized corrective maintenance tasks at the organizational maintenance level.

21-2. EQUIPMENT ITEMS NOT COVERED . All equipment items for which corrective maintenance is authorized at the organizational maintenance level are covered in this chapter.

Section II. CANVAS ACCESSORY ITEMS

21-3. BOW ASSEMBLY REPAIR.

TOOLS : Cross-tip screwdriver (Phillips type)

SUPPLIES : Solvent, dry cleaning, type II (SD-2), Fed. Spec P-D-680
Rags

PERSONNEL: One

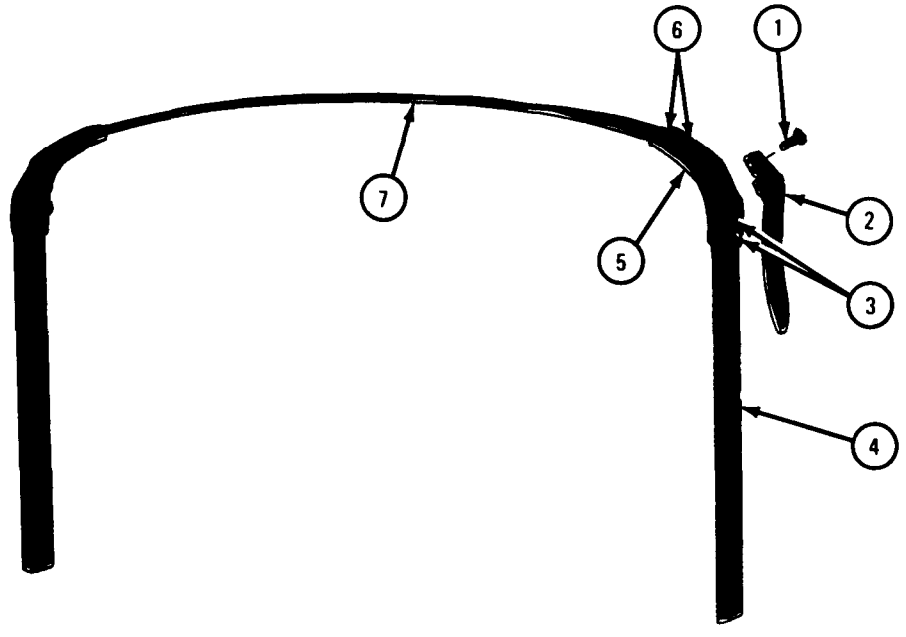
EQUIPMENT CONDITION : Bow assembly on workbench.

a. Disassembly.

FRAME 1

1. Using screwdriver, unscrew and take out screw (l). Take off strap (2).
2. Using screwdriver, unscrew and take out two screws (3). Pull bow stake (4) out of bow corner (5).
3. Using screwdriver, unscrew and take out two screws (6). Pull bow corner (5) out of bow top (7).
4. Do steps 1 through 3 again on other side of bow assembly.

END OF TASK



WARNING

Dry cleaning solvent is flammable. Do not use near an open flame. Keep a fire extinguisher nearby when solvent is used. Use only in well-ventilated places. Failure to do this may result in injury to personnel and damage to equipment.

b. Cleaning. Using solvent, clean all metal parts.

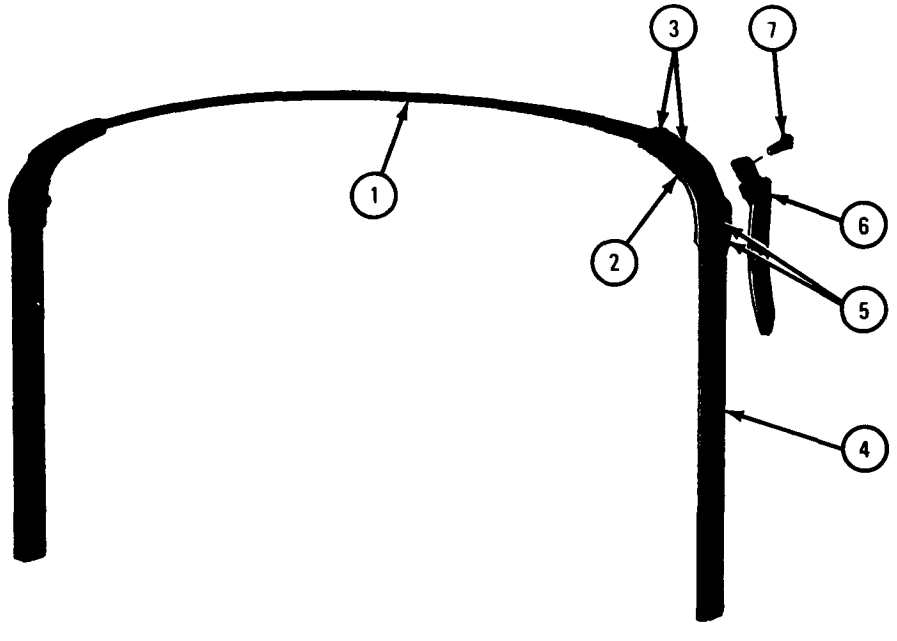
c. Inspection and Repair. Check all parts for damage. Throw away any bent, broken or damaged parts. Get new parts in their place.

d. Assembly.

FRAME 1

1. Push bow top (1) into bow corner (2) and aline holes.
2. Using screwdriver, screw in and tighten two screws (3).
3. Push bow stake (4) into bow corner (2) and aline holes.
4. Using screwdriver, screw in and tighten two screws (5).
5. Put strap (6) against bow corner (2) as shown. Aline holes and hold it in place.
6. Using screwdriver, screw in and tighten screw (7).
7. Do steps 1 through 6 again on other side of bow top (1).

END OF TASK



TA 048988

Section III. CAB ACCESSORY ITEMS

21-4. WINDSHIELD WIPER MOTOR REMOVAL AND REPLACEMENT.

NOTE

This task is the same for both windshield wiper motors.

TOOLS : Cross-tip screwdriver (Phillips type)
Hose clamp pliers
3/8-inch open end wrench

SUPPLIES: None

PERSONNEL: One

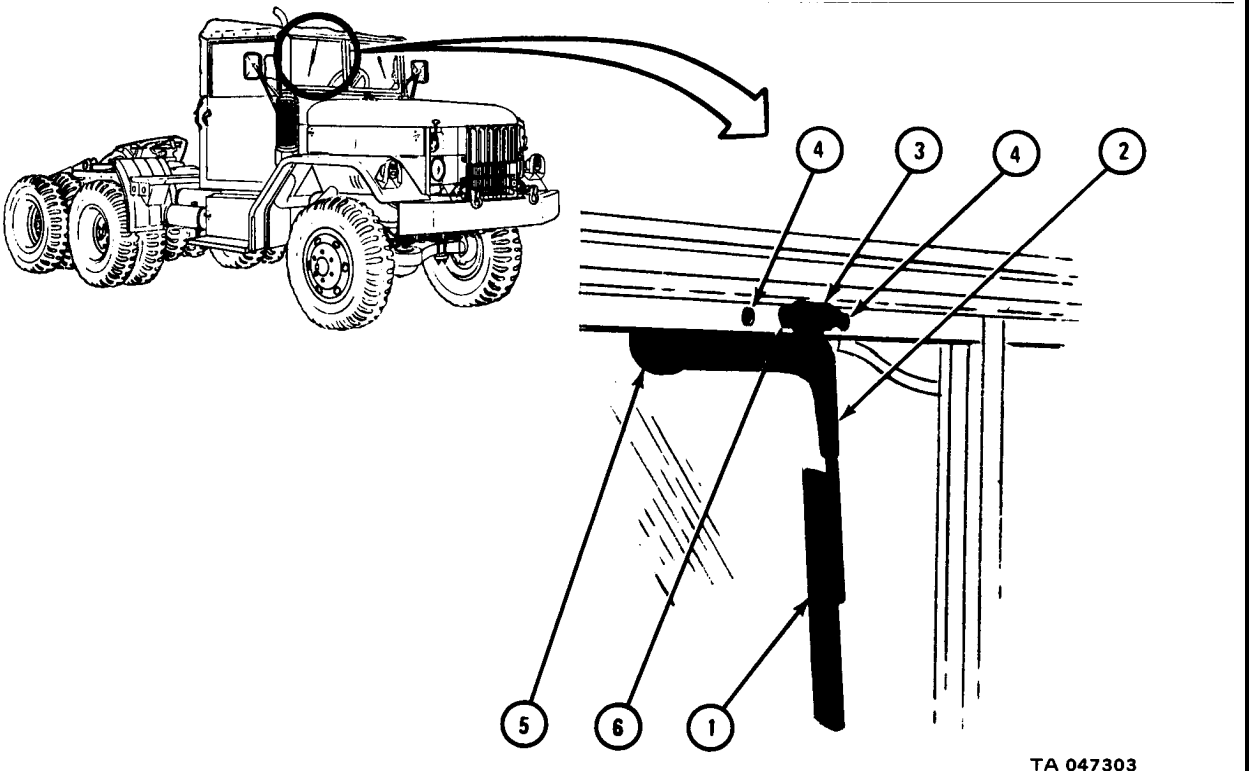
EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a . Removal.

FRAME 1

1. Unclip wiper blade (1) from wiper arm (2) and takeoff blade.
2. Using 3/8-inch wrench, unscrew cap nut (3) and take off arm (2).
3. Using phillips screwdriver, unscrew two screws (4) letting wiper motor (5) hang on shaft (6).

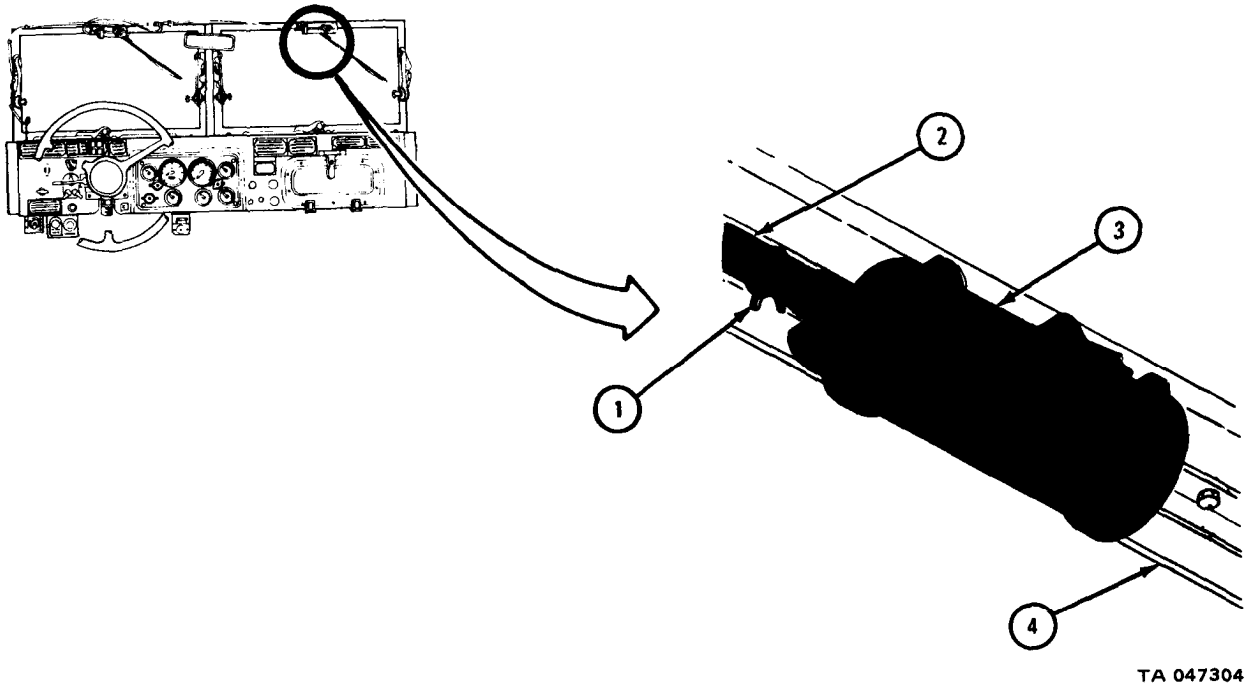
GO TO FRAME 2



FRAME 2

1. Using pliers, spread hose clamp (1) and slide clamp back on hose (2).
2. Pull hose (2) off wiper motor (3) and lift wiper motor clear of windshield frame (4).

END OF TASK



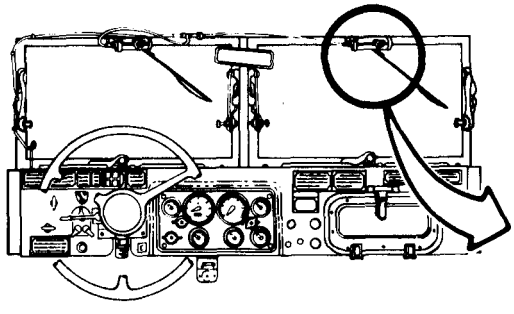
TA 047304

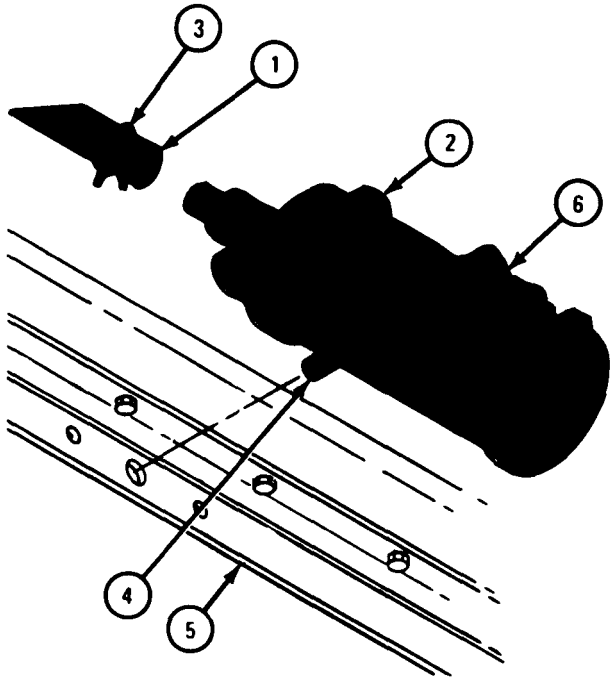
b. Replacement.

FRAME 1

1. Put end of hose (1) on wiper motor (2). Using pliers, spread hose clamp (3) and slide clamp down hose to wiper motor.
2. Put wiper motor shaft (4) through hole in windshield frame (5) as shown, and aline two mounting holes.
3. Turn manual control lever (6) to full right position.

GO TO FRAME 2





TA 047305

FRAME 2

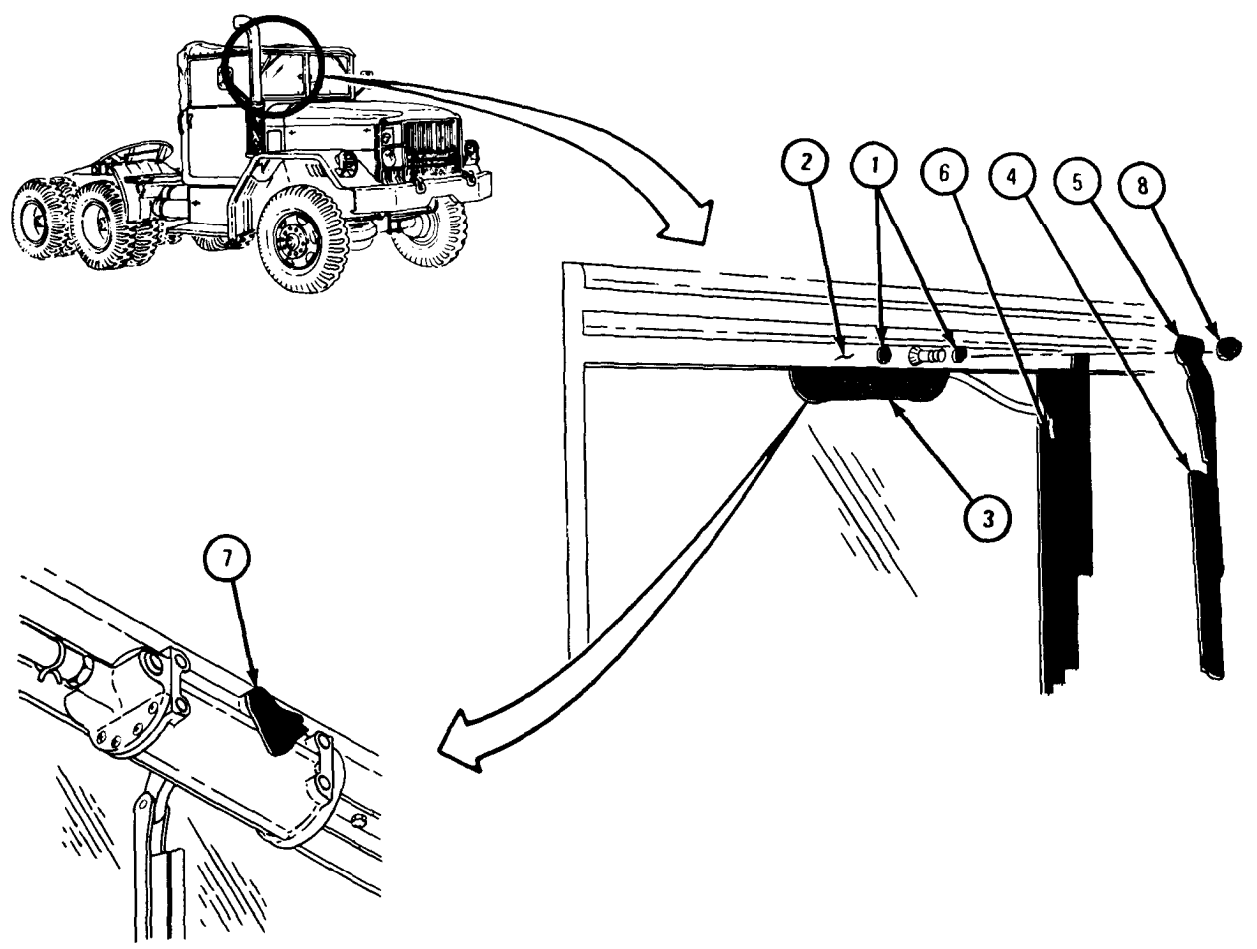
1. Using phillips screwdriver, screw two screws (1) through windshield frame (2) into wiper motor (3). Tighten screws.
2. Clip wiper blade (4) to wiper arm (5).
3. Put wiper arm (5) on serrated shaft of wiper motor (3). Set arm so that blade clears windshield center post (6) and windshield frame (2) by turning manual control lever (7) to the right and left.
4. Using 3/8-inch wrench, screw on and tighten cap nut (8).

NOTE

Follow-on Maintenance Action Required:

Start engine and turn on windshield wiper control valve to check operation of wiper motor. Refer to TM 9-2320-209-10.

END OF TASK



21-5. WINDSHIELD WASHER REPAIR.

TOOLS : 7/16-inch wrench (2)
9/16-inch wrench (2)
6-foot tape measure

SUPPLIES: None

PERSONNEL: Two

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

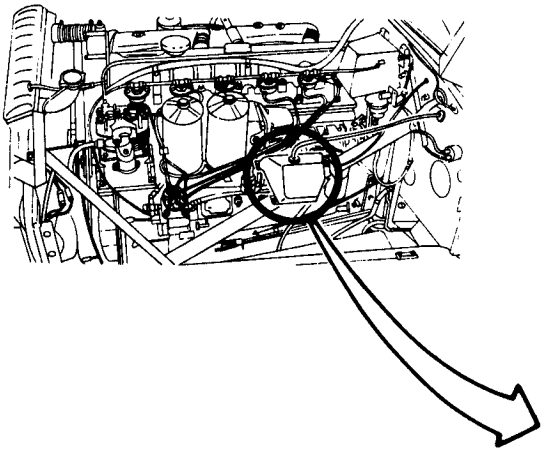
Preliminary Procedure. Open hood and left side panel. Refer to TM 9-2320-209-10.

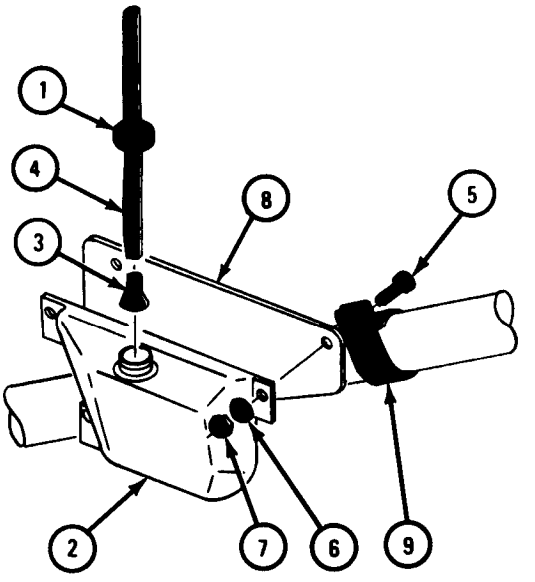
b. Removal.

FRAME 1

1. Take cap (1) off reservoir (2).
2. Take strainer (3) off hose (4) and pull hose out of cap (1).
3. Using 7/16-inch wrenches, unscrew and take off three capscrews (5), washers (6), and nuts (7). Takeoff reservoir (2) and plate (8).
4. Spread open and take off two clamps (9).

GO TO FRAME 2



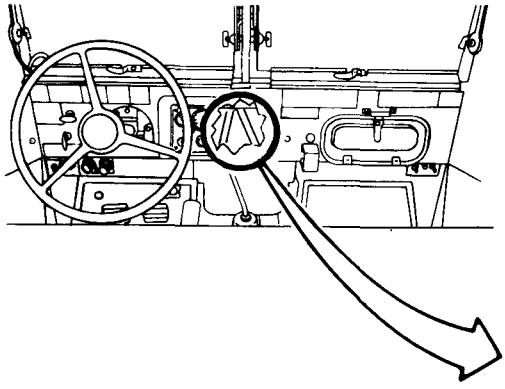


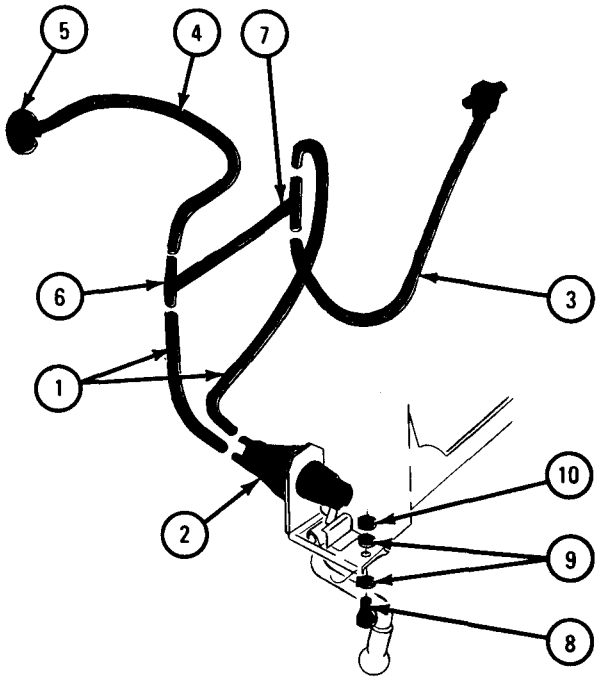
TA 084049

FRAME 2

1. Working behind instrument panel, pull two hoses (1) off pump (2) and pull hose (3).
2. Pull hose (4) through grommet (5) and take hoses (1, 3, and 4) out of truck.
3. Pull hoses (1, 3, and 4) off tee fitting (6) and valve (2).
4. Using 7/16-inch wrenches, unscrew and take off capscrew (8), two washers (9), and nut (10). Take off pump (2).

GO TO FRAME 3





TA 084050

FRAME 3

Soldier A 1. Using 9/16-inch wrench, hold jet washer (1). Tell soldier B when ready.

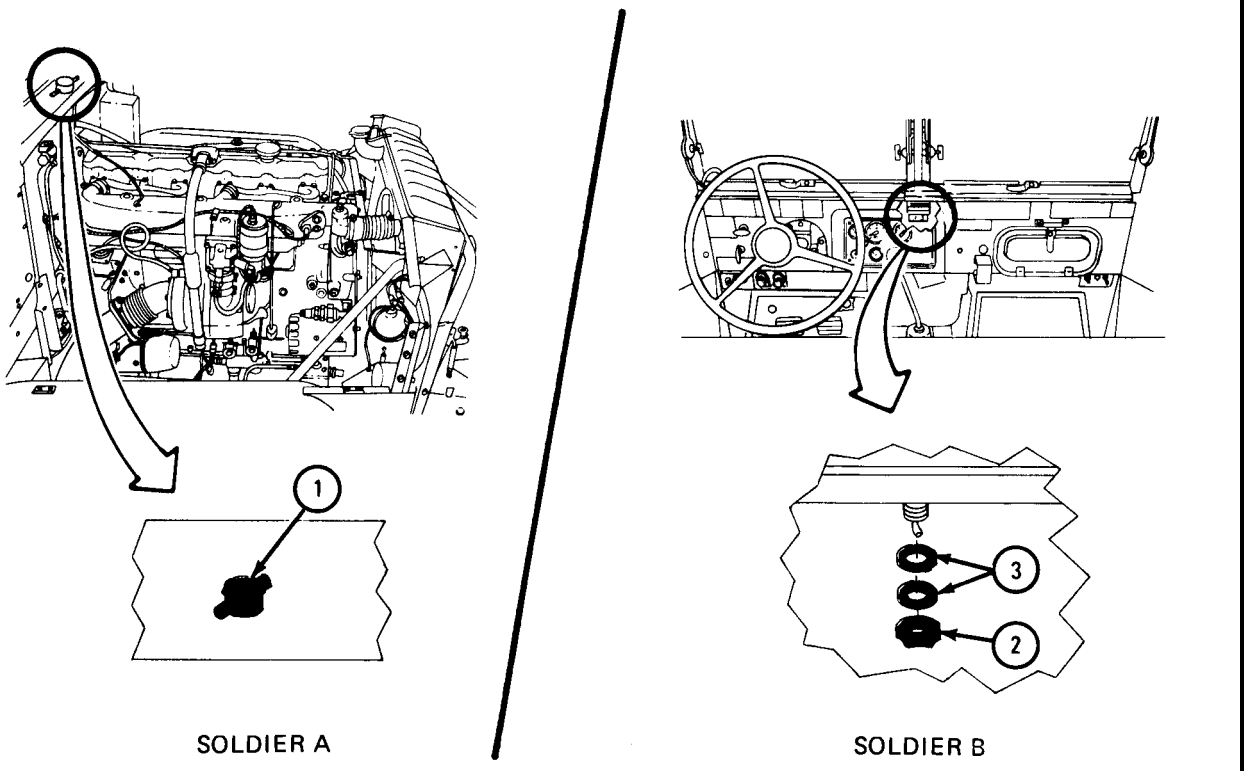
Soldier B 2. Using 7/16-inch wrench, unscrew and take off nut (2) and two rubber washers (3).

NOTE

Note the way jet washer (1) is facing so it will be put back the same way.

Soldier A 3. Take jet washer (1) off truck.

END OF TASK



c. Repair. Check that all parts are not clogged, cracked or broken. If parts are damaged, get new ones.

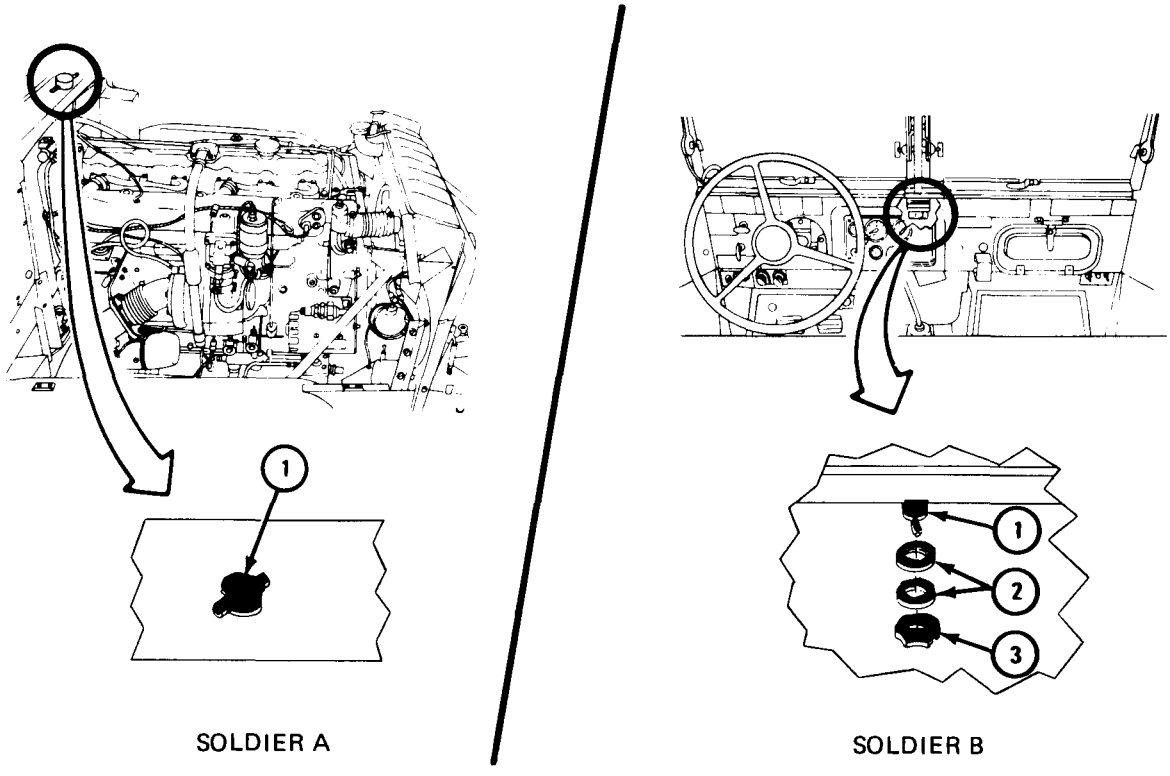
d. Replacement.

FRAME 1

Soldier A 1. Put jet washer (1) on cowl of truck as shown. Using 9/16-inch wrench, hold jet washer and face it as noted. Tell soldier B when ready.

Soldier B 2. Put two rubber washers (2) and nut (3) on jet washer (1). Using 7/16-inch wrench, tighten nut (3).

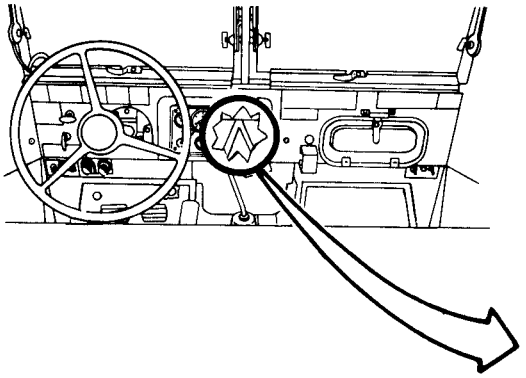
GO TO FRAME 2

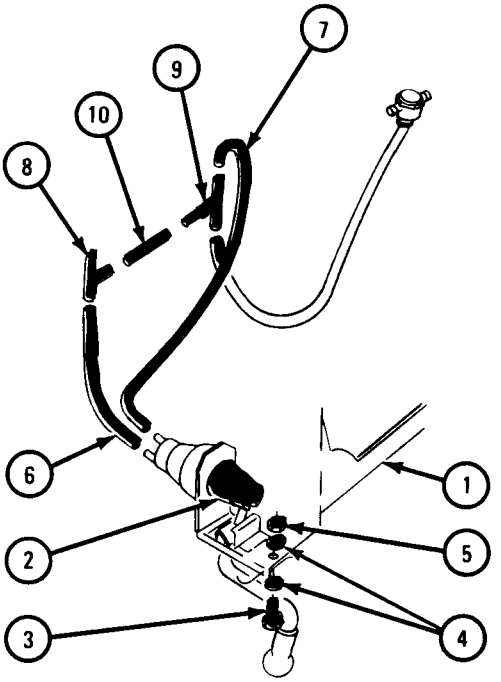


FRAME 2

1. Working behind instrument panel (1), put pump (2) in place under instrument panel. Using 7/16-inch wrenches, screw in and tighten capscrew (3), two washers (4), and nut (5).
2. Put 7-inch hose (6) and 9-inch hose (7) on pump (2).
3. Put tee fitting (8) on hose (6) and valve (9) on hose (7) as shown.
4. Put 3-inch hose (10) between tee fitting (8) and valve (9).

GO TO FRAME 3



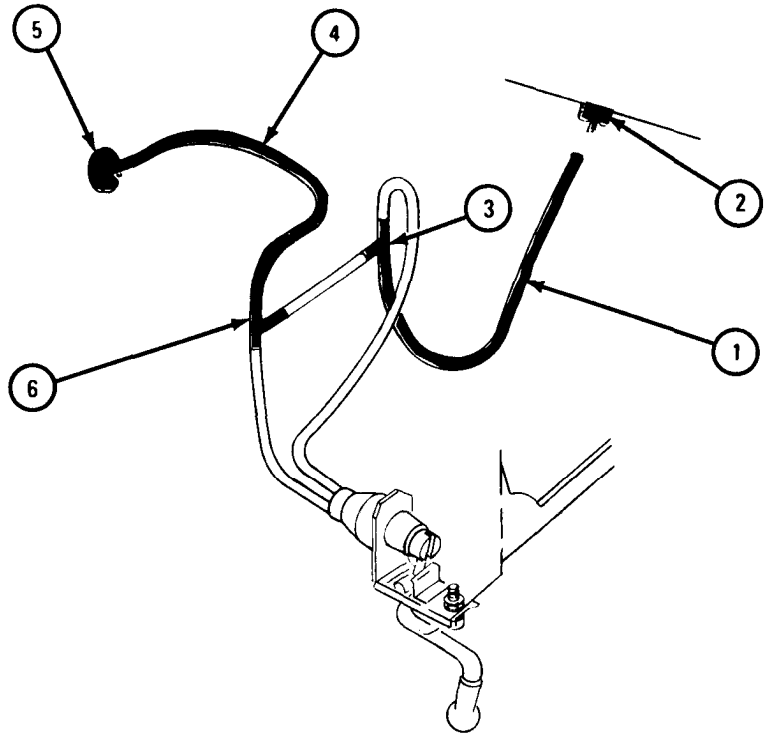


TA 084053

FRAME 3

1. Put one end of 11-inch hose (1) on jet washer (2) and other end of hose on valve (3).
2. Put 39-inch hose (4) through grommet (5) and put end of hose on tee fitting (6).

GO TO FRAME 4



TA 084054

FRAME 4

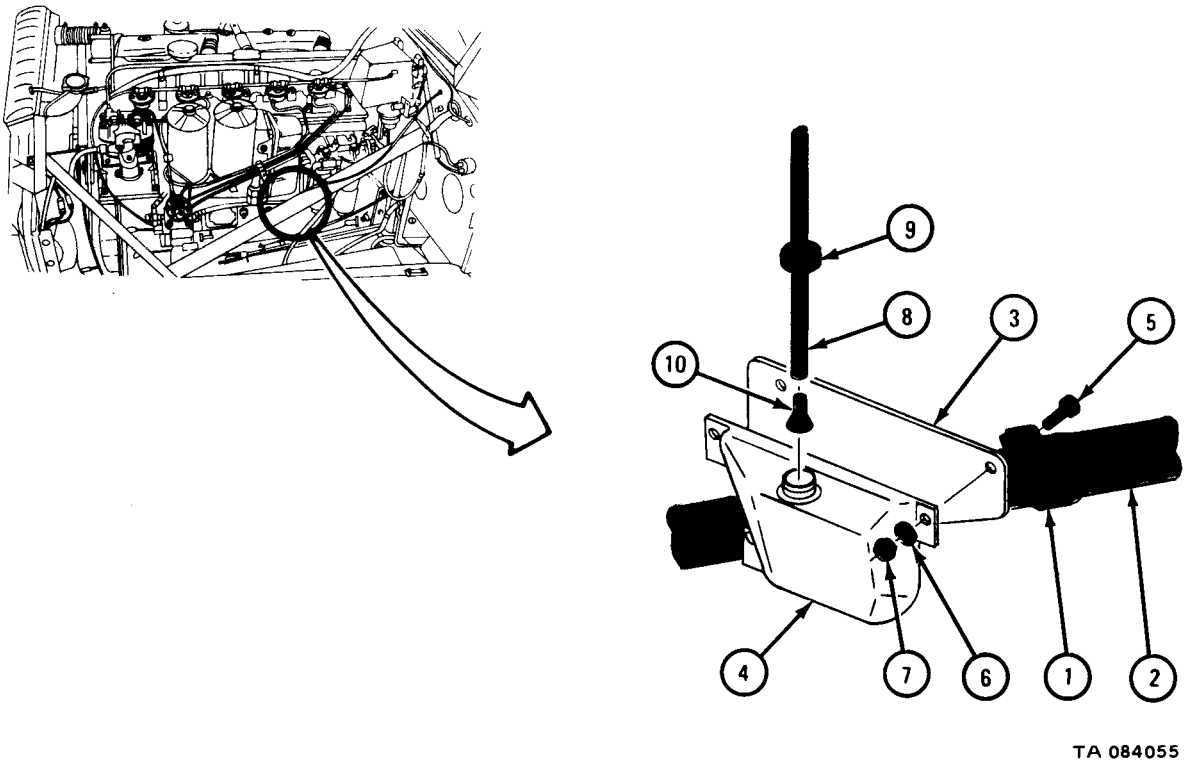
1. Put two clamps (1) on steering column (2). Aline screw holes in plate (3) and reservoir (4) with screw holes in two clamps (1) and put through three capscrews (5).
2. Using 7/16-inch wrenches, hold three capscrews (5) and screw on and tighten three washers (6) and nuts (7).
3. Put 39-inch hose (8) on cap (9) and put strainer (10) into hose. Put cap on reservoir (4).

NOTE

Follow-on Maintenance Action Required:

Close hood and left side panel. Refer to TM 9-2320-209-10.

END OF TASK



21-6. MIRROR AND BRACKET ASSEMBLY REMOVAL, REPAIR, AND REPLACEMENT.

NOTE

Procedure is the same for right mirror and bracket assembly.

TOOLS : 9/16-inch open end wrench
7/16-inch open end wrench
7/8-inch open end wrench
1/2-inch socket wrench

SUPPLIES : None

PERSONNEL: One

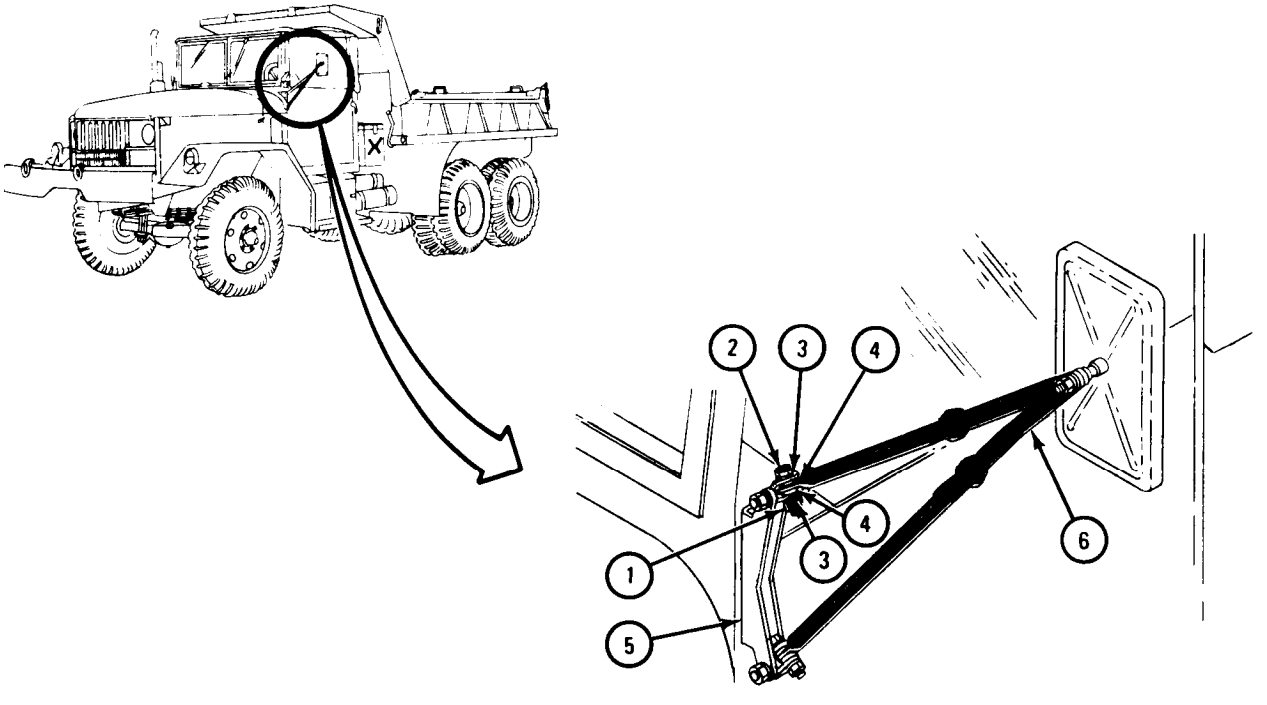
EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Removal.

FRAME 1

1. Using 9/16-inch wrench, unscrew nut (1) from bolt (2).
2. Take out bolt (2), two lockwashers (3), and two flat washers (4).
3. Do steps 1 and 2 again at lower end of bracket (5) and take off mirror and arm assembly (6).

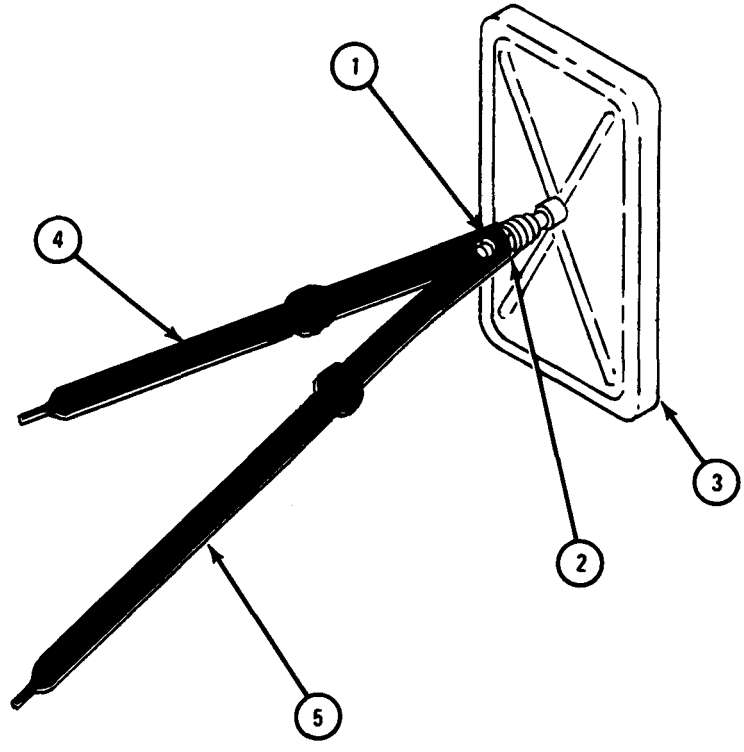
GO TO FRAME 2



FRAME 2

1. Using 7/16-inch wrench, unscrew and take off nut (1) and lockwasher (2).
2. Pull mirror (3) out of upper arm (4) and lower arm (5).

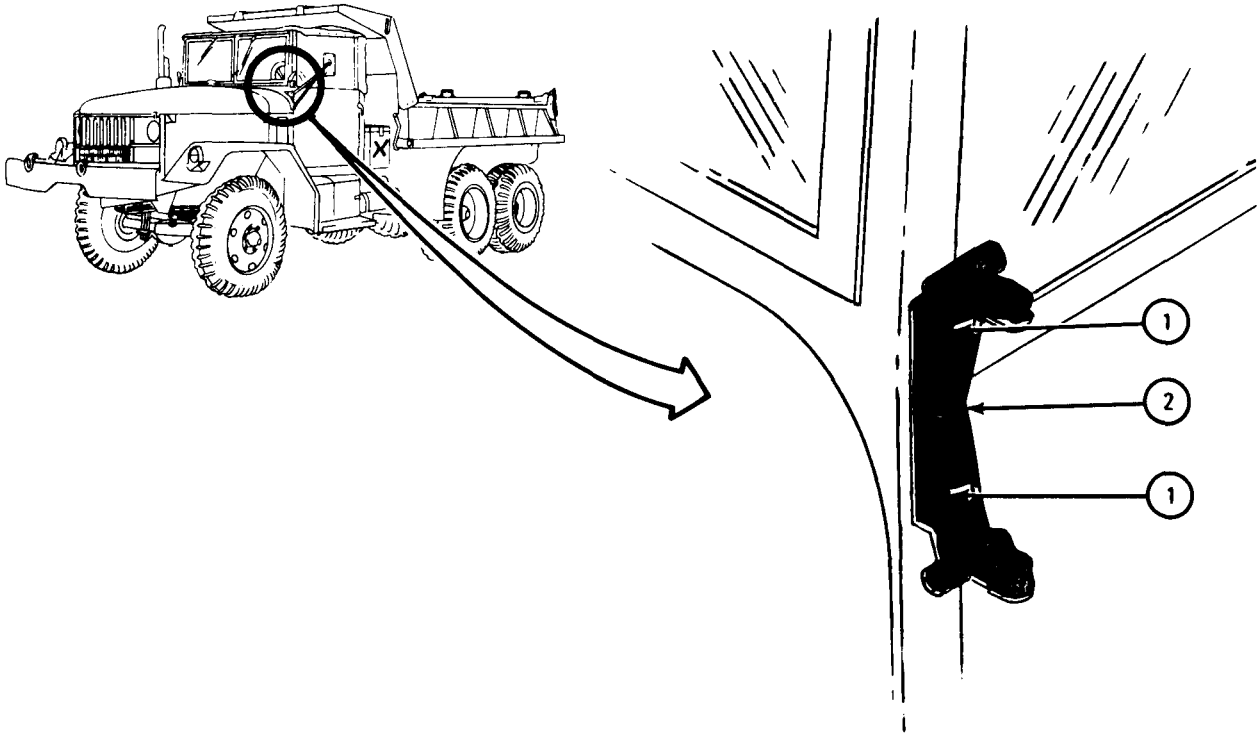
GO TO FRAME 3



FRAME 3

1. Using 1/2-inch socket wrench, unscrew two lockwasher bolts (1) and take off bracket (2).

GO TO FRAME 4

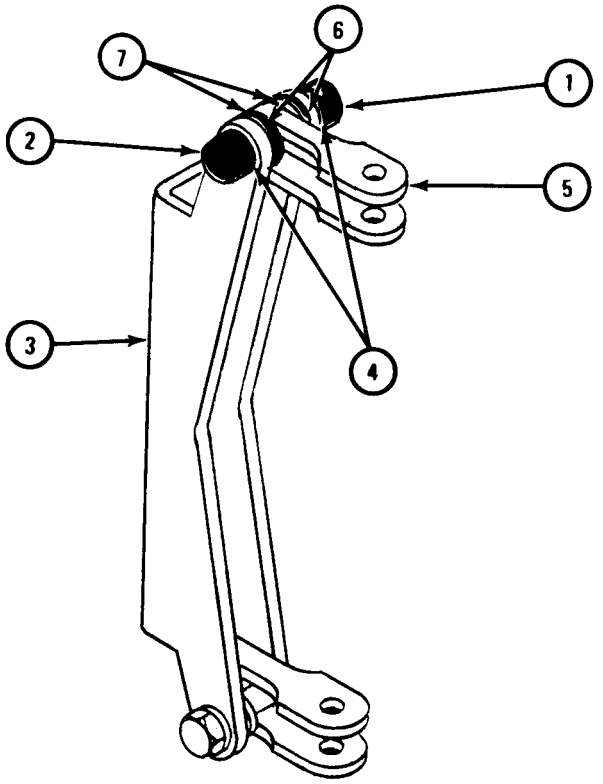


TA 047296

FRAME 4

1. Using 9/16-inch wrench, unscrew nut (1) from bolt (2). Take bolt out of bracket (3) and off two lockwashers (4).
2. Pull loop clamp (5) out of bracket (3) taking off two fiber washers (6) and two flat washers (7).
3. Do steps 1 and 2 again at bottom of bracket (5).

END OF TASK



TA 047297

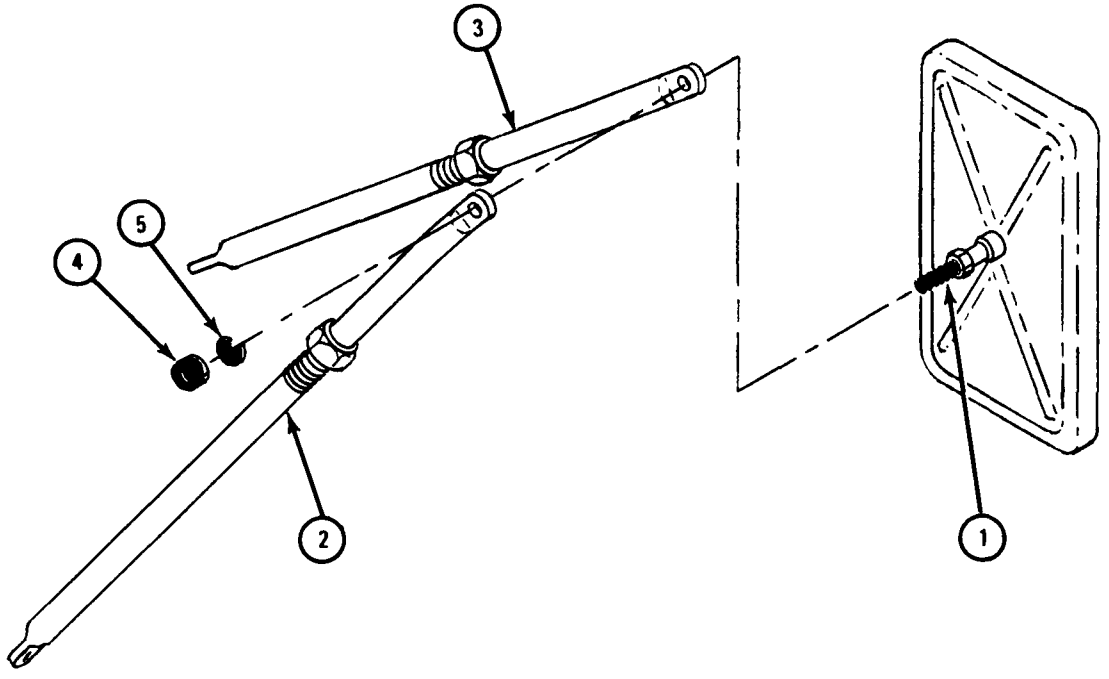
b. Repair. Repair mirror and bracket assembly by replacing damaged parts.

c. Replacement.

FRAME 1

1. Put threaded stud (1) through arms (2 and 3) as shown.
2. Screw on nut (4) with lockwasher (5). Snug up nut, but do not tighten at this time.

GO TO FRAME 2

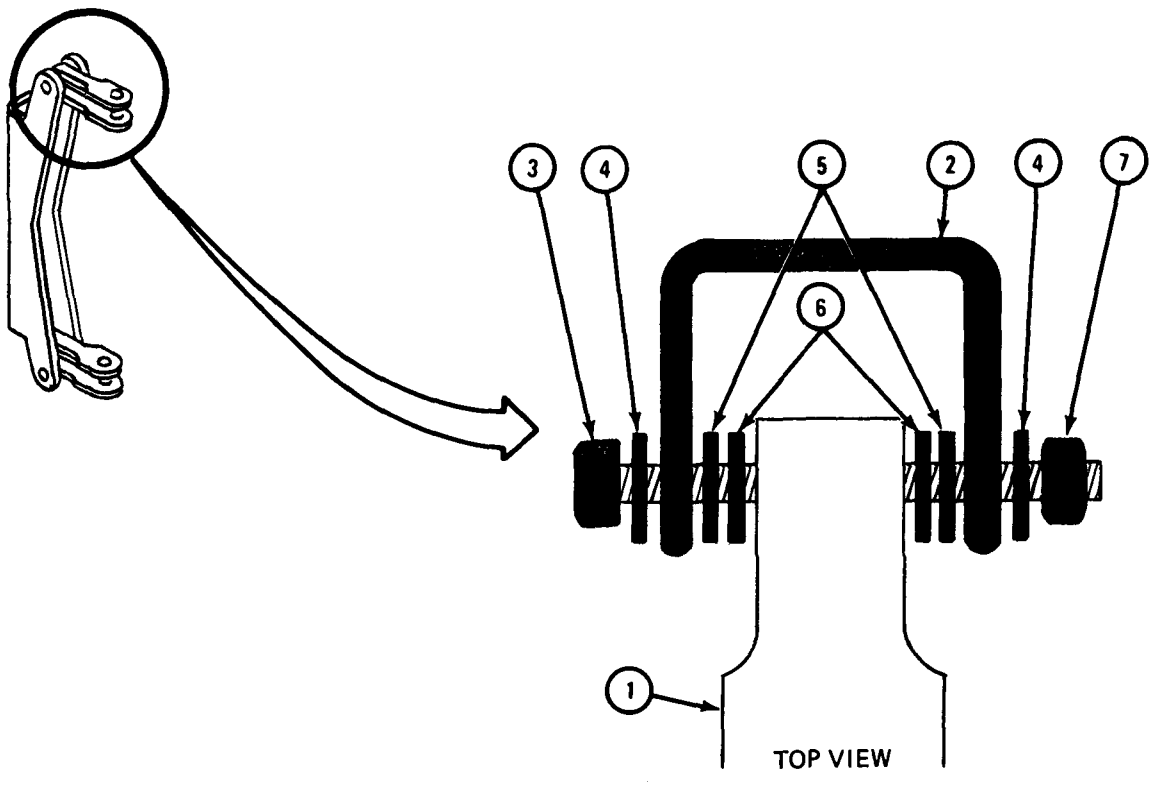


TA 047298

FRAME 2

1. Join loop clamp (1) to bracket (2) as shown.
2. Use bolt (3), two lockwashers (4), two fiber washers (5), two flat washers (6), and nut (7). Put parts together as shown.
3. Using 9/16-inch wrench, snug up nut (7), but do not tighten at this time.
4. Do steps 2 and 3 again to join loop clamp at other end of bracket (2).

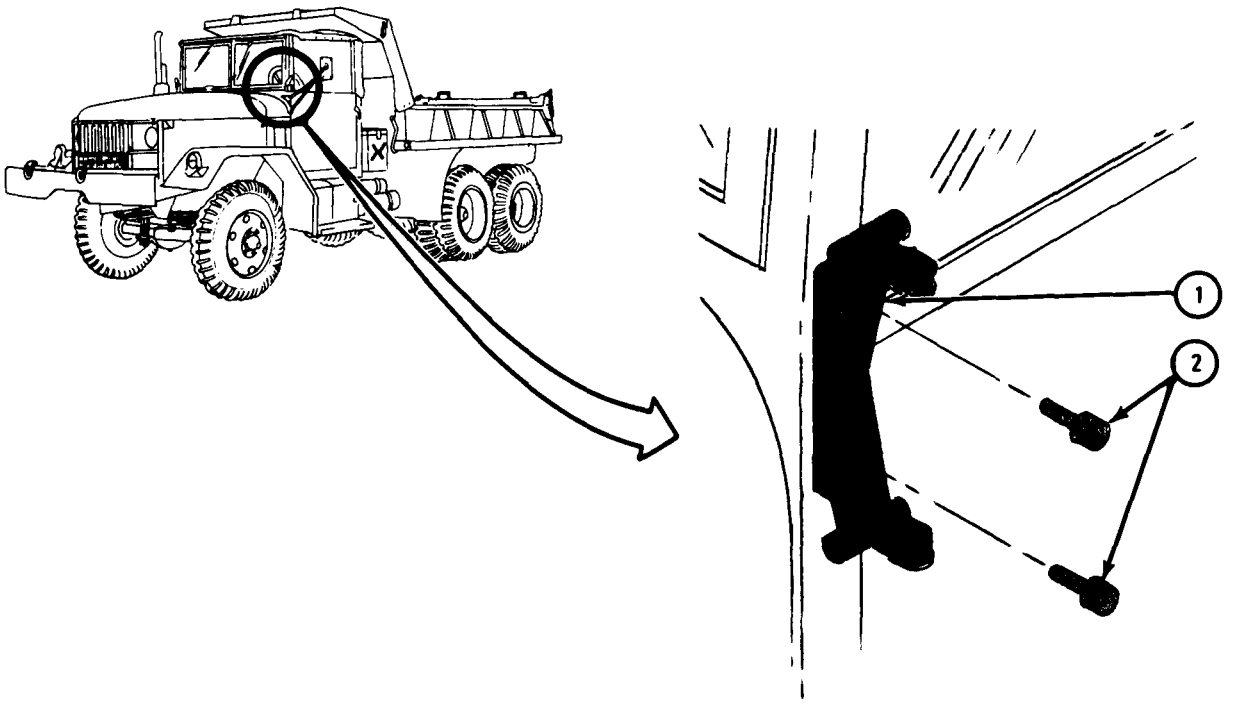
GO TO FRAME 3



FRAME 3

1. Place bracket (1) so bracket holes aline with two mounting holes in truck as shown.
2. Screw in two lockwasher bolts (2) as shown and tighten using 1/2-inch socket wrench.

GO TO FRAME 4

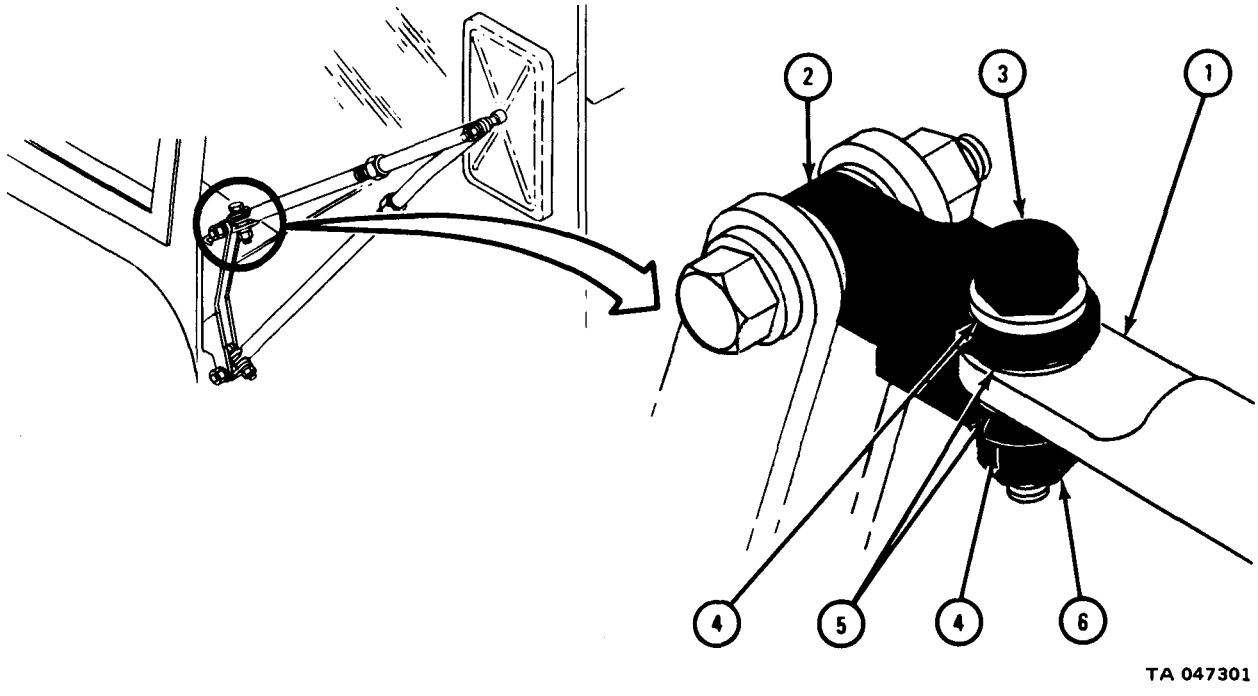


TA 047300

FRAME 4

1. Join upper arm (1) to loop clamp (2) as shown.
2. Put bolt (3), two lockwashers (4), two flat washers (5), and nut (6) together as shown.
3. Using 9/16-inch wrench, snug up nut (6), but do not tighten at this time.
4. Do steps 1 through 3 again to join lower arm to other loop clamp.

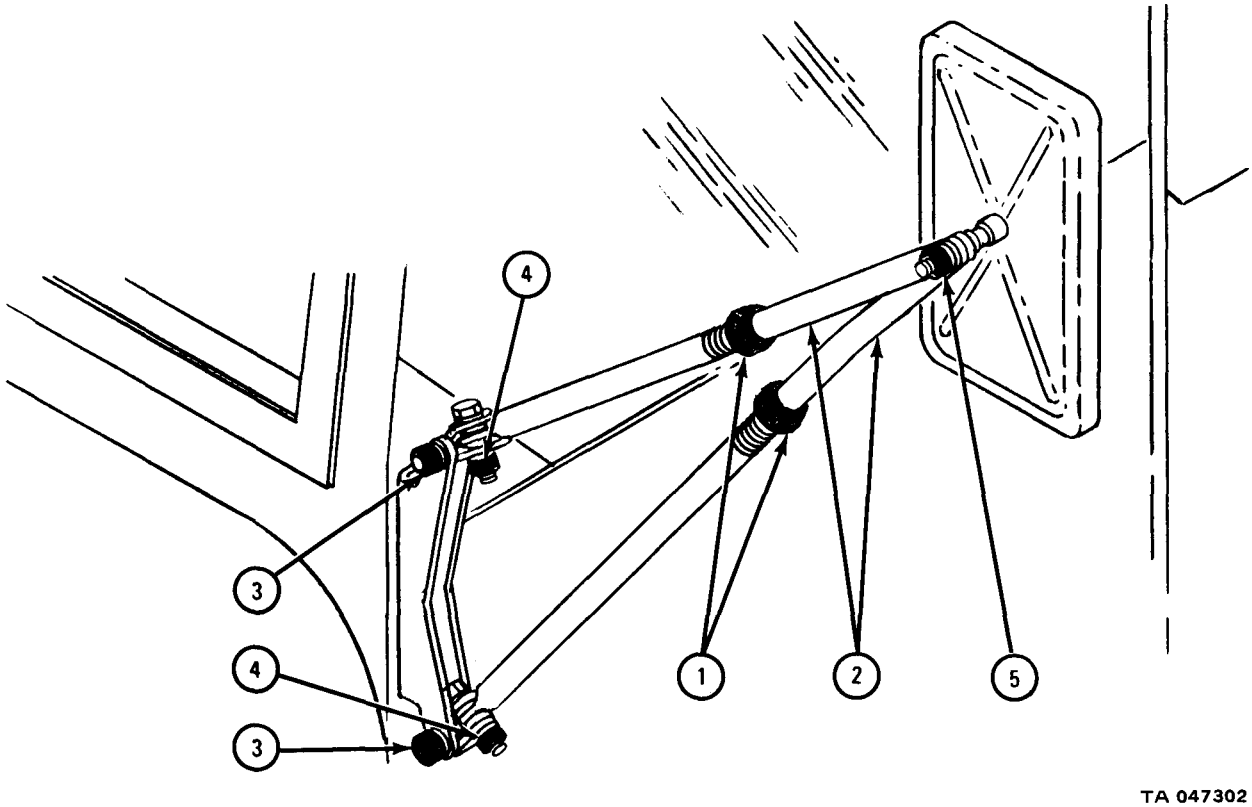
GO TO FRAME 5



FRAME 5

1. Using 7/8-inch wrench, loosen two adjustment nuts (1) on arms (2). Set arm length for right mirror height and tighten nuts.
2. Using 7/16-inch wrench, tighten two nuts (3).
3. From driver's position, swing mirror assembly toward front or rear of truck. When rear view is right, tighten two nuts (4) using 9/16-inch wrench.
4. Using 7/16-inch wrench, tighten mirror nut (5).

END OF TASK



TA 047302

Section IV. DATA PLATES

21-7. DATA PLATES REMOVAL AND REPLACEMENT.

TOOLS : l/2-inch cold cut chisel (data plates held with rivets or drive screws)
8-ounce hammer (data plates held with rivets or drive screws)
l/8-inch punch (data plates held with rivets or drive screws)
Blind hand riveter (data plates held with rivets)
Cross-tip screwdriver (Phillips type) (data plates held with screws)
Scraper (data plates held with adhesive)
6-inch pliers (data plates held with adhesive)

SUPPLIES : None

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Removal.

NOTE

Note which plates are taken off so they are put back in the same place.

(1) Riveted data plates.

FRAME 1

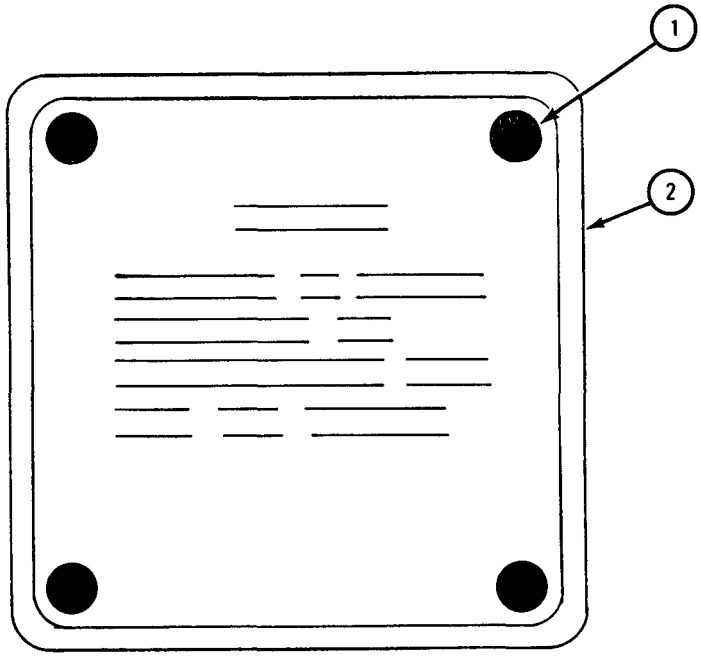
1. Using hammer and chisel, cut heads off each rivet (1) holding data plate (2) in place.

CAUTION

Before punching rivet ends through an item, make sure rivets (1) go through to other side. Do not punch rivets held in deep solid block or hollow bottomless assemblies. Damage to equipment could result.

2. Using hammer and punch, tap out the rest of each rivet (1) and take off data plate (2).

END OF TASK



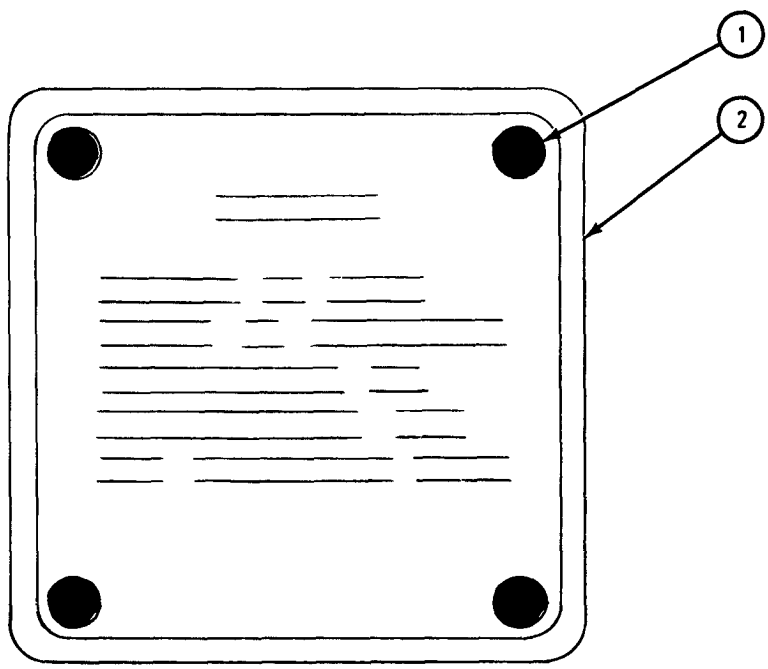
TA 080846

(2) Data plates held with screws.

FRAME 1

1. Using screwdriver, unscrew and take out screws (1) while holding data plate (2).
2. Take off data plate.

END OF TASK



TA 080848

(3) Data plates held with drive screws.

FRAME 1

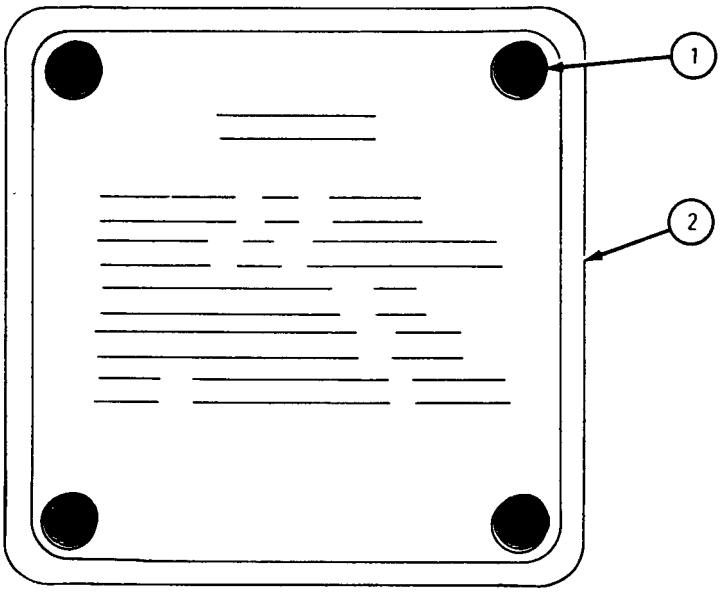
1. Using hammer and chisel, cut off head of each drive screw (1) holding data plate (2) in place.
2. Using hammer and center punch, center punch each drive screw (1).

CAUTION

Before punching drive screw ends through an item, make sure drive screws (1) go through to other side. Do not punch screws held in deep solid block or hollow bottomless assemblies. Damage to equipment could result.

3. Using 1/8-inch punch and hammer, drive out rest of drive screws (1) and take off data plate (2).

END OF TASK



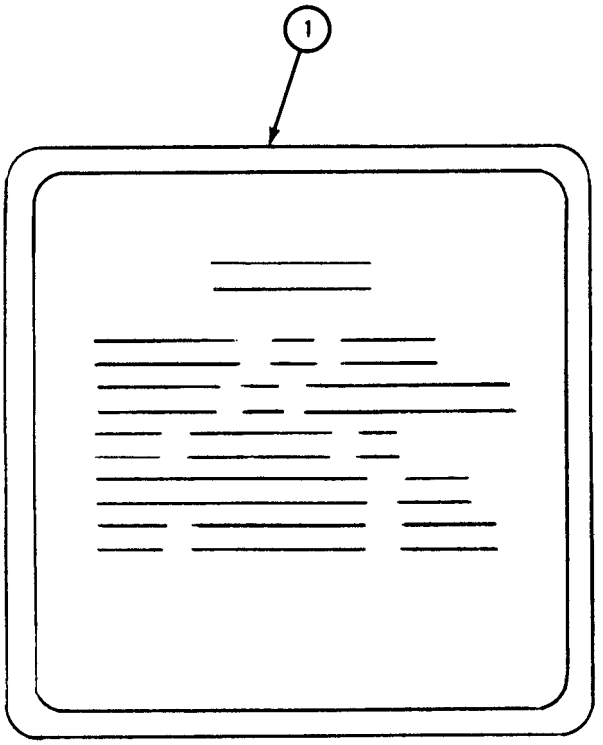
TA 080850

(4) Data plates held with adhesive.

FRAME 1

1. Using scraper, lift up one corner of data plate (1).
2. Using pliers, take off data plate (1).
3. Using scraper, takeoff adhesive from surface data plate (1) was held to.

END OF TASK



TA 080852

b. Replacement.

NOTE

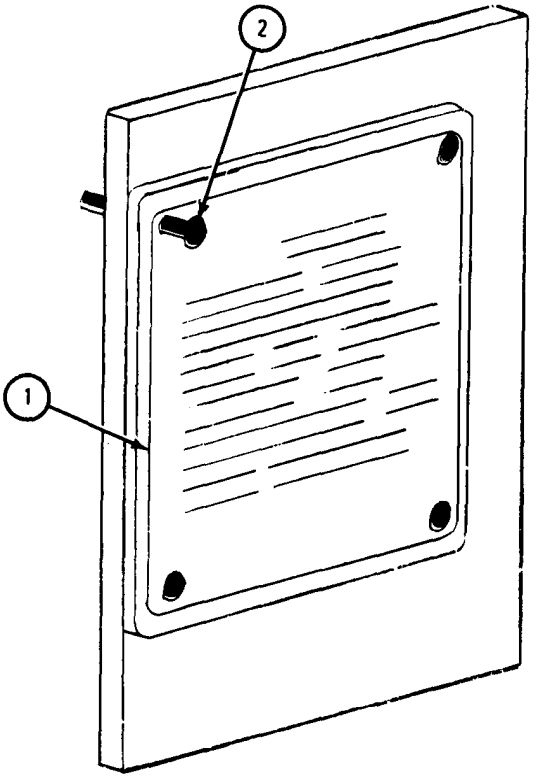
Put back data plates as noted.

(1) Riveted data plates.

FRAME 1

1. Put data plate (1) in place and aline rivet holes.
2. Put rivets (2) in blind riveter and through data plate (1) and part data plate is being riveted to.
3. Using blind riveter, rivet data plate (1) tightly in place.

END OF TASK



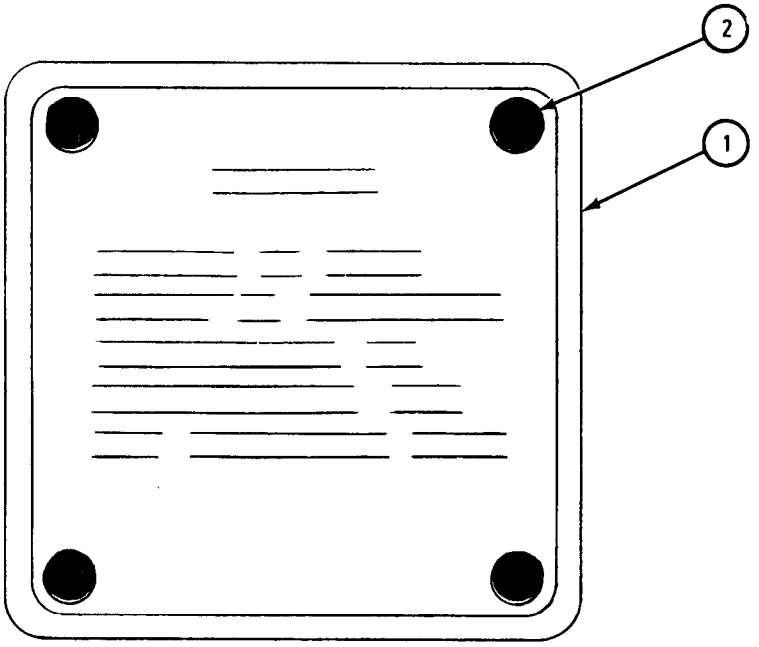
TA 080847

(2) Data plates held with screws.

FRAME 1

1. Put data plate (1) in place and aline holes.
2. Using screwdriver, screw in and tighten screws (2).

END OF TASK



TA 080849

(3) Data plates held with drive screws.

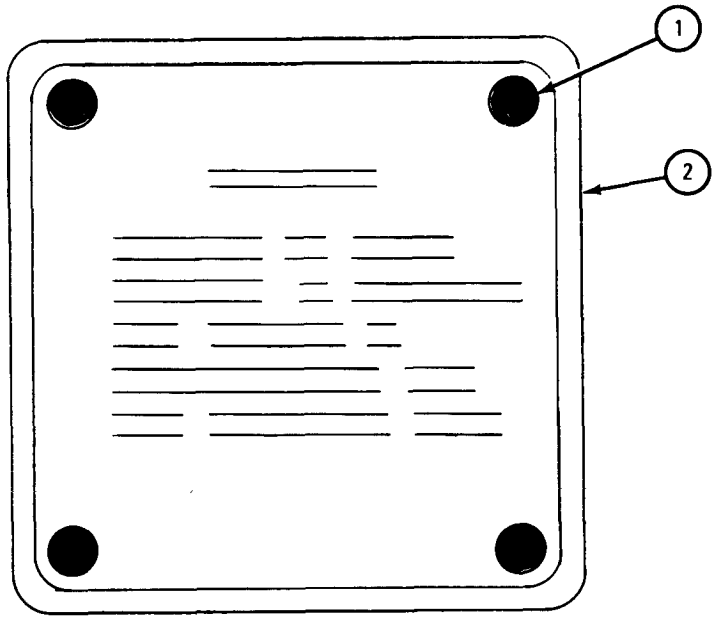
FRAME 1

NOTE

Drive screws (1) used to put back data plate (2) must have a larger diameter than drive screw which were drilled out.

1. Put data plate (2) in place and aline holes.
2. Using hammer, tap in drive screws (1) until data plate (2) is tightly held in place.

END OF TASK



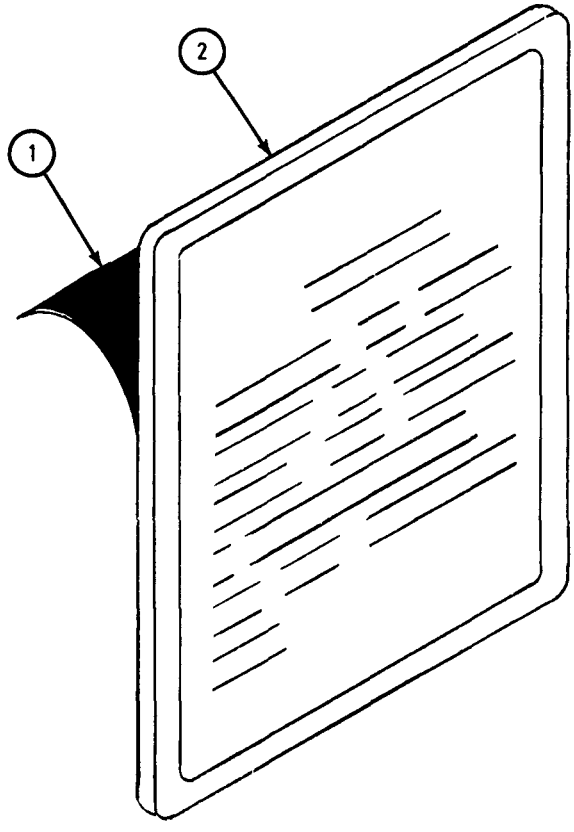
TA 080851

(4) Data plates held with adhesive.

FRAME 1

1. Peel off backing paper (1) from back of data plate (2).
2. Press data plate (2) in place. Rub data plate firmly to make sure it stays in place.

END OF TASK



TA080853

CHAPTER 22

NONELECTRICAL GAGES GROUP MAINTENANCE

Section I. SCOPE

22-1. EQUIPMENT ITEMS COVERED. This chapter gives equipment maintenance procedures for nonelectrical gages for which there are authorized corrective maintenance tasks at the organizational maintenance level.

22-2. EQUIPMENT ITEMS NOT COVERED. All equipment items for which corrective maintenance is authorized at the organizational maintenance level are covered in this chapter.

Section II. NONELECTRICAL GAGES

22-3. TACHOMETER ASSEMBLY REMOVAL, REPAIR , AND REPLACEMENT.

TOOLS : Flat tip screwdriver; 3/4-inch open end wrench; 7 /16-inch open end wrench; 7/16-inch open end wrench; l-inch open end wrench; 3/8-inch open end wrench; Slip joint pliers

SUPPLIES : Tachometer drive plug gasket; Tachometer drive adapter gasket; Rubber grommet

PERSONNEL : One

EQUIPMENT CONDITION : Truck parked, engine off, handbrake set.

a. Preliminary Procedures.

(1) Disconnect battery ground cable. Refer to Part 1, para 7-58.

(2) Open hood and left side panel. Refer to TM 9-2320-20%10.

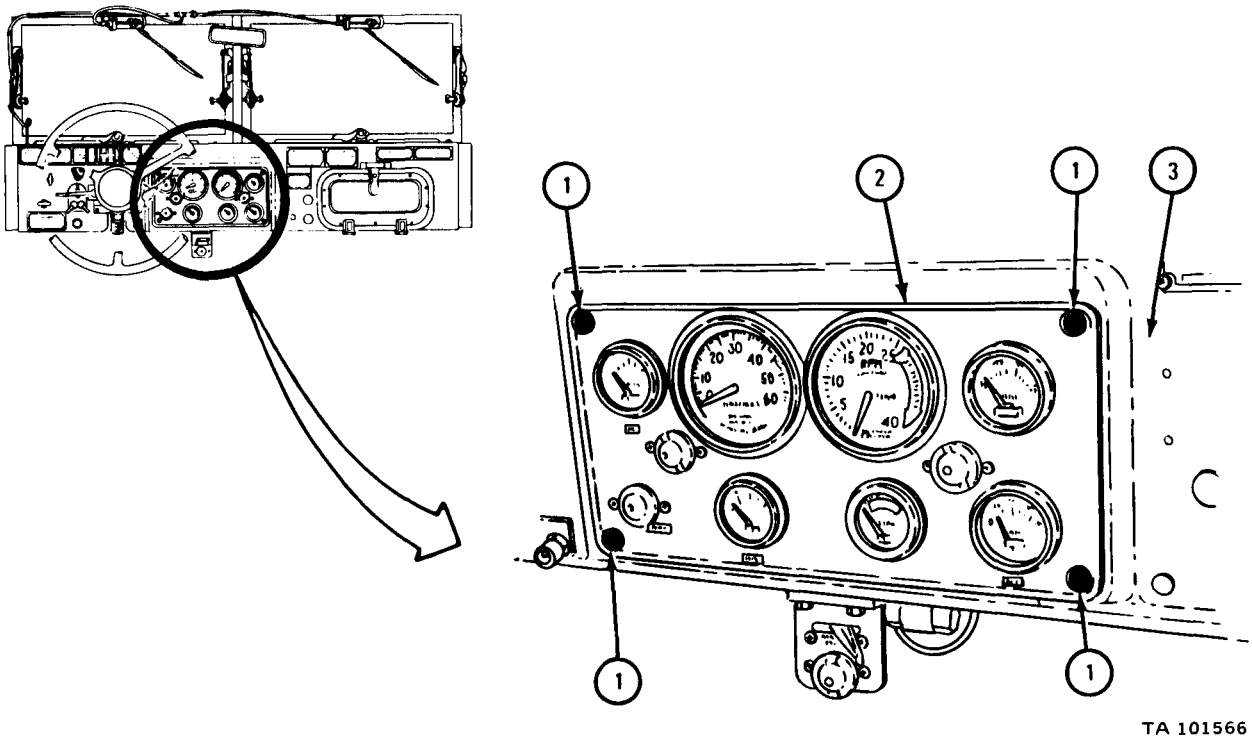
(3) Take off air compressor belt. Refer to Part 2, para 13-34.

b. Removal of Tachometer.

FRAME 1

1. Using screwdriver, turn mounting studs (1) one quarter turn to the left.
2. Pull instrument cluster (2) away from instrument panel (3).

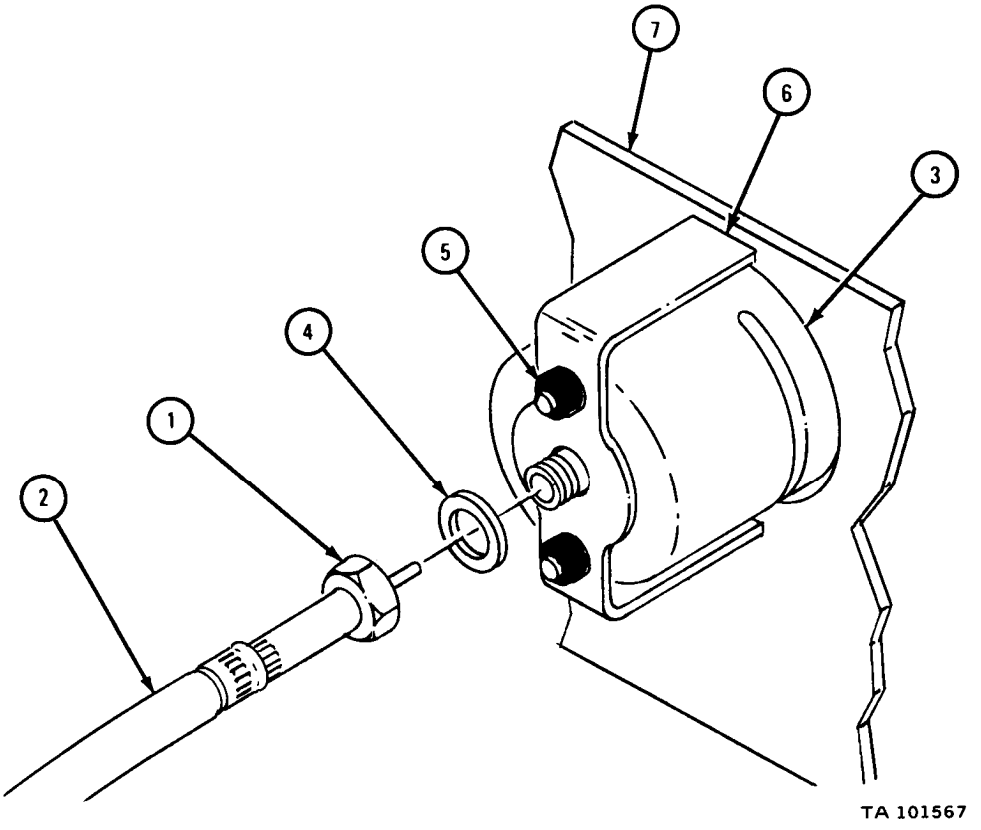
GO TO FRAME 2



FRAME 2

1. Using 3/4-inch wrench, unscrew nut (1) and pull flexible shaft assembly (2) away from tachometer (3). Take off gasket (4).
2. Using 3/8-inch wrench, unscrew and take off two nuts and lockwashers (5). Pull clamp (6) off tachometer (3) and take tachometer out from front of panel (7).
3. Enter hours of operation, shown on tachometer (3), in vehicle equipment log if another tachometer is to be put in.

END OF TASK

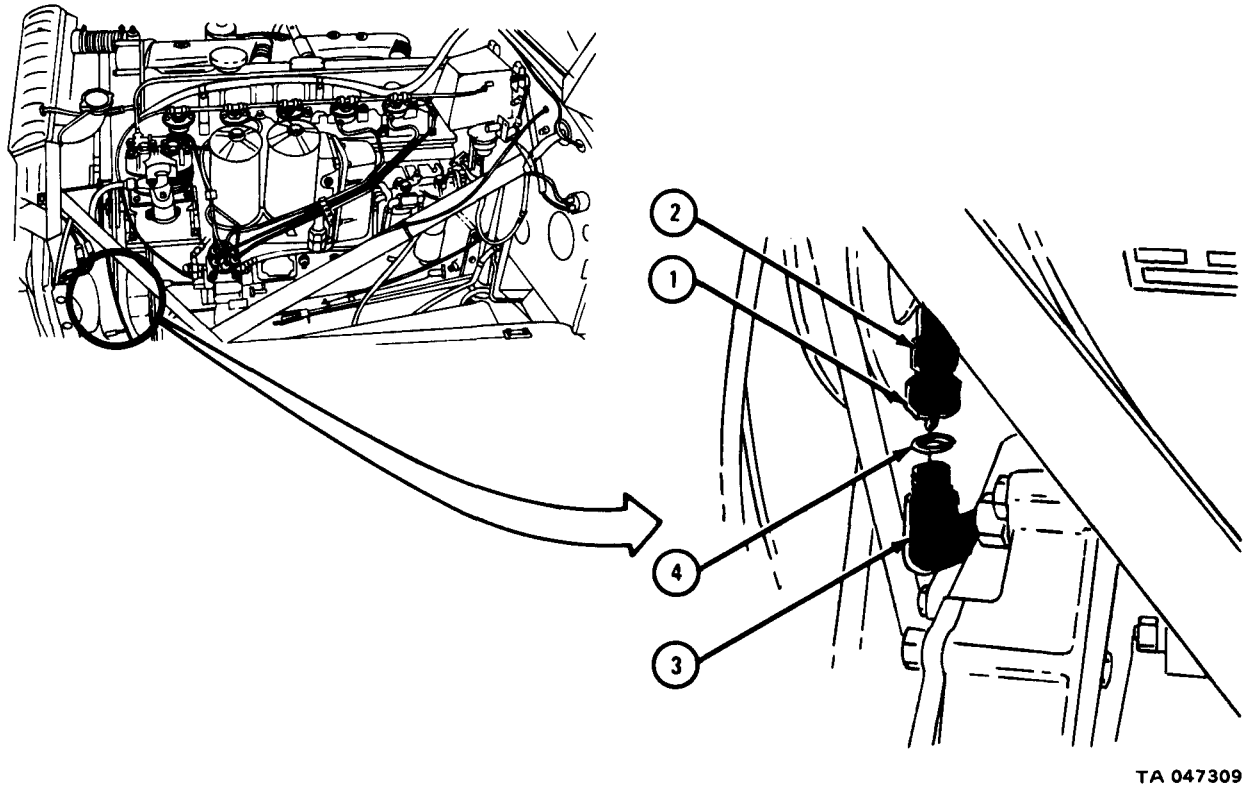


c. Removal of Flexible Shaft Assembly.

FRAME 1

1. Using l-inch wrench, unscrew nut (1). Pull flexible shaft assembly (2) away from right angle adapter (3).
2. Take off gasket (4). Throw away gasket.

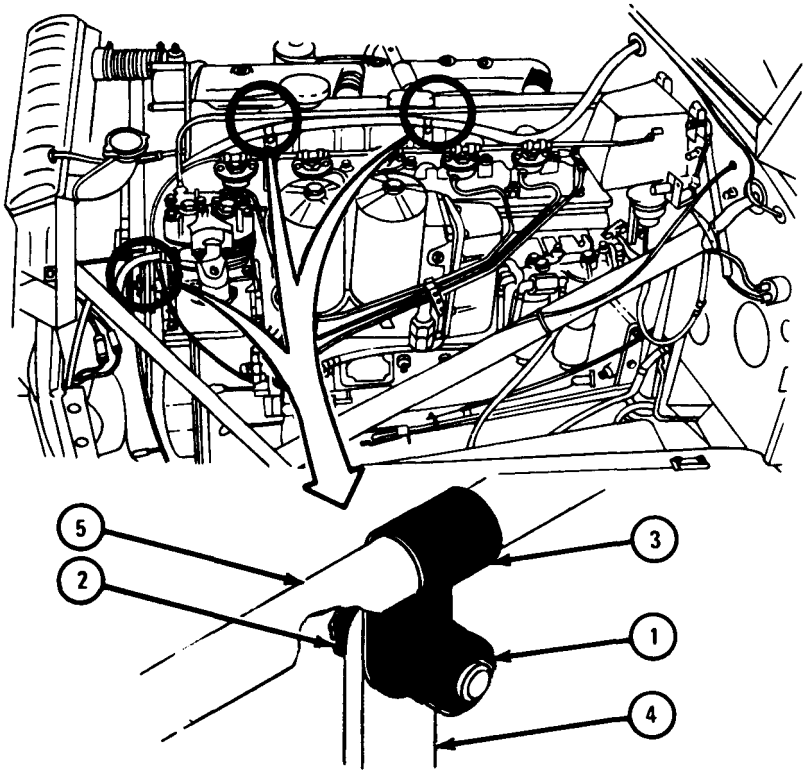
GO TO FRAME 2



FRAME 2

1. Using 7/16-inch wrenches, unscrew and take off three locknuts (1) and bolts (2).
2. Take three clamps (3) off brackets (4). Take clamps off flexible shaft assembly (5) by spreading clamps.

GO TO FRAME 3

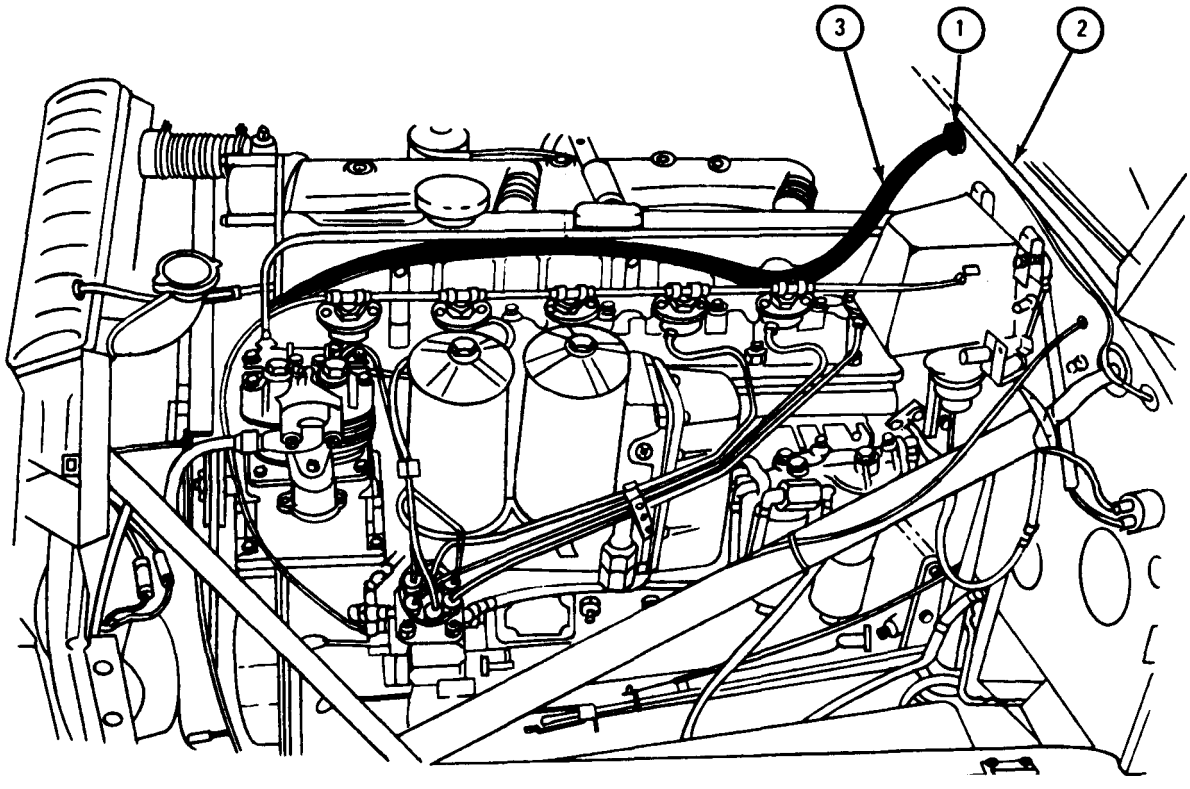


TA 047310

FRAME 3

1. Take grommet (1) out of hole in firewall (2).
2. Pull end of flexible shaft assembly (3) out through firewall (2).

END OF TASK



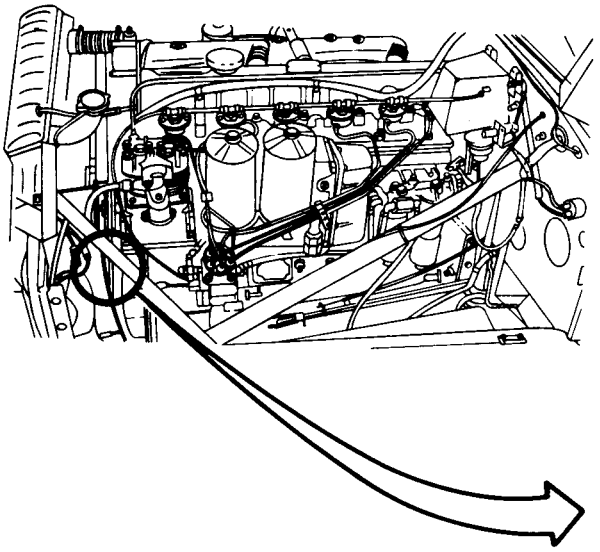
TA 047311

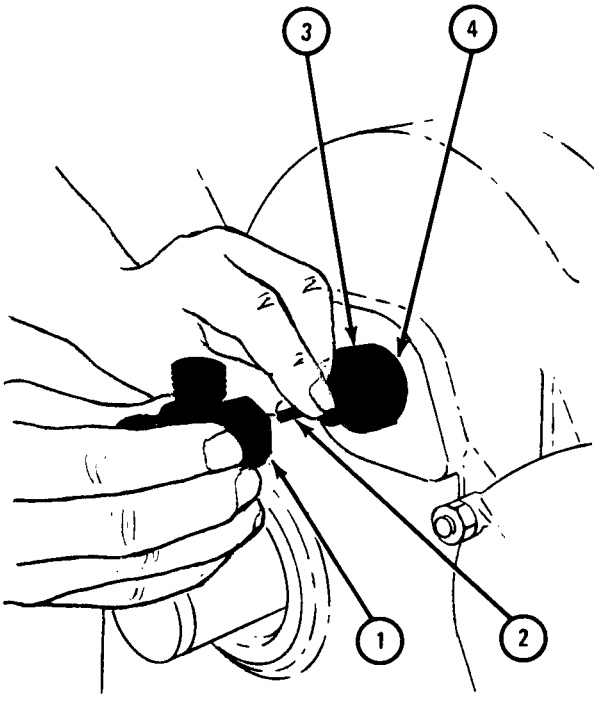
d. Removal of Right Angle Adapter.

FRAME 1

1. Using 1-inch wrench, unscrew tachometer angle drive adapter (1) and take out drive shaft (2).
2. Using 1-inch wrench, unscrew and take off adapter (3) and gasket (4).

END OF TASK





TA 047312

e. Removal of Flexible Shaft Core.

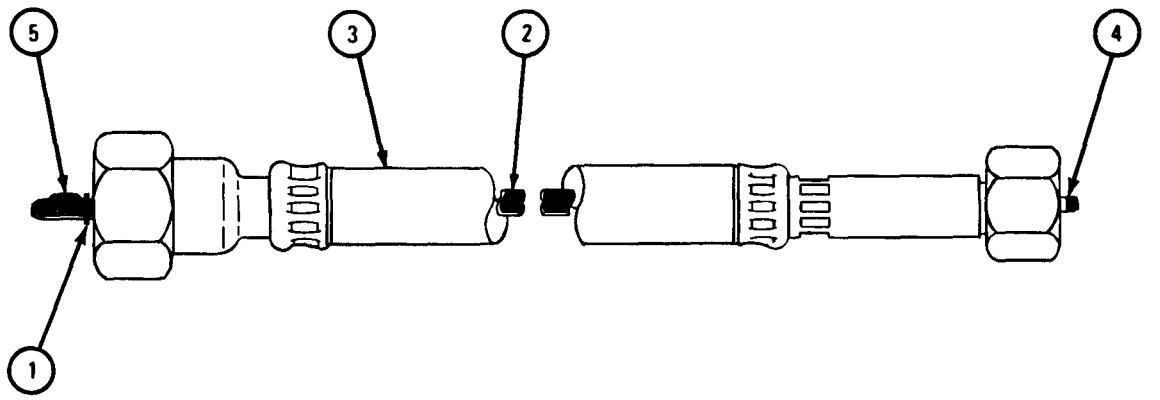
FRAME 1

NOTE

Flexible shaft assembly does not have to be taken out of truck to replace core. However, shaft assembly must be taken off at tachometer end and engine end.

1. Take off clip (1) from engine end of shaft core (2).
2. Take out shaft core (2) from casing (3) by pulling on tachometer end (4) of core, using pliers.
3. If shaft core (2) is broken, use pliers on engine end (5) to pull out other piece.

END OF TASK



TA 101568

f. Repair of Flexible Shaft Assembly. Repair of the flexible shaft assembly is limited to replacement of the core. Refer to para 22-3e and 22-3g of this procedure.

g. Replacement of Flexible Shaft Core.

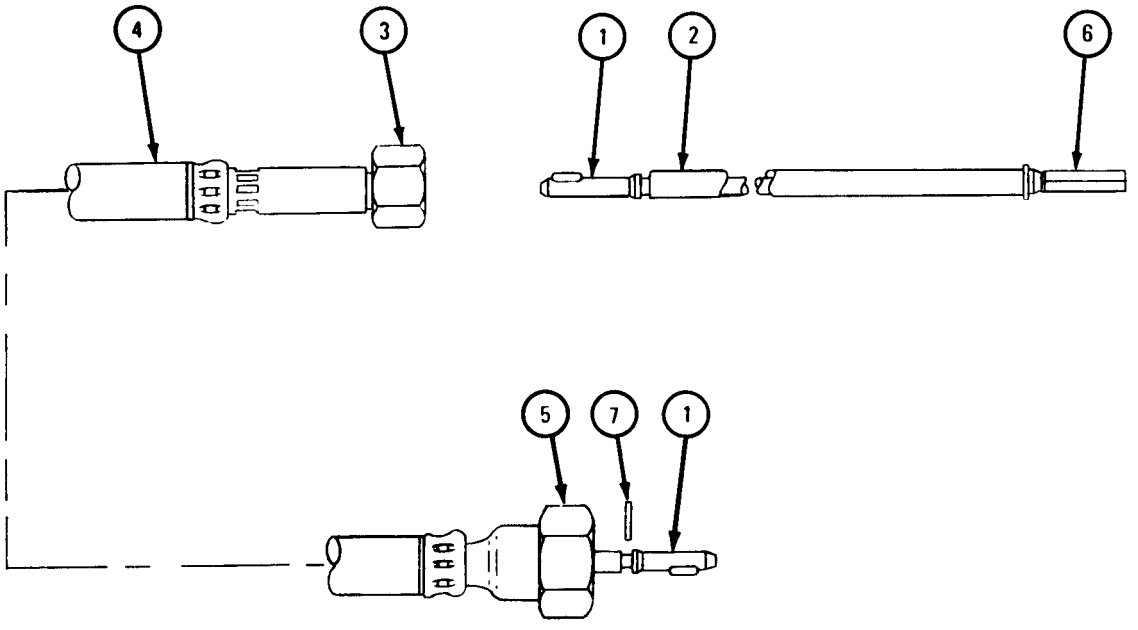
NOTE

Before putting back flexible shaft core, check that casing has no dents, sharp bends or other damage. If casing is damaged, do not put back core. Get a new complete flexible shaft assembly.

FRAME 1

1. Put keyed end (1) of core (2) into tachometer end of casing (3) that has the smaller coupling nut.
2. Carefully push core (2) through casing (4) until keyed end (5) seats in engine end of housing (5). Square end (6) should stick out of tachometer end of housing (3).
3. Put clip (7) in engine end of core (2).

END OF TASK



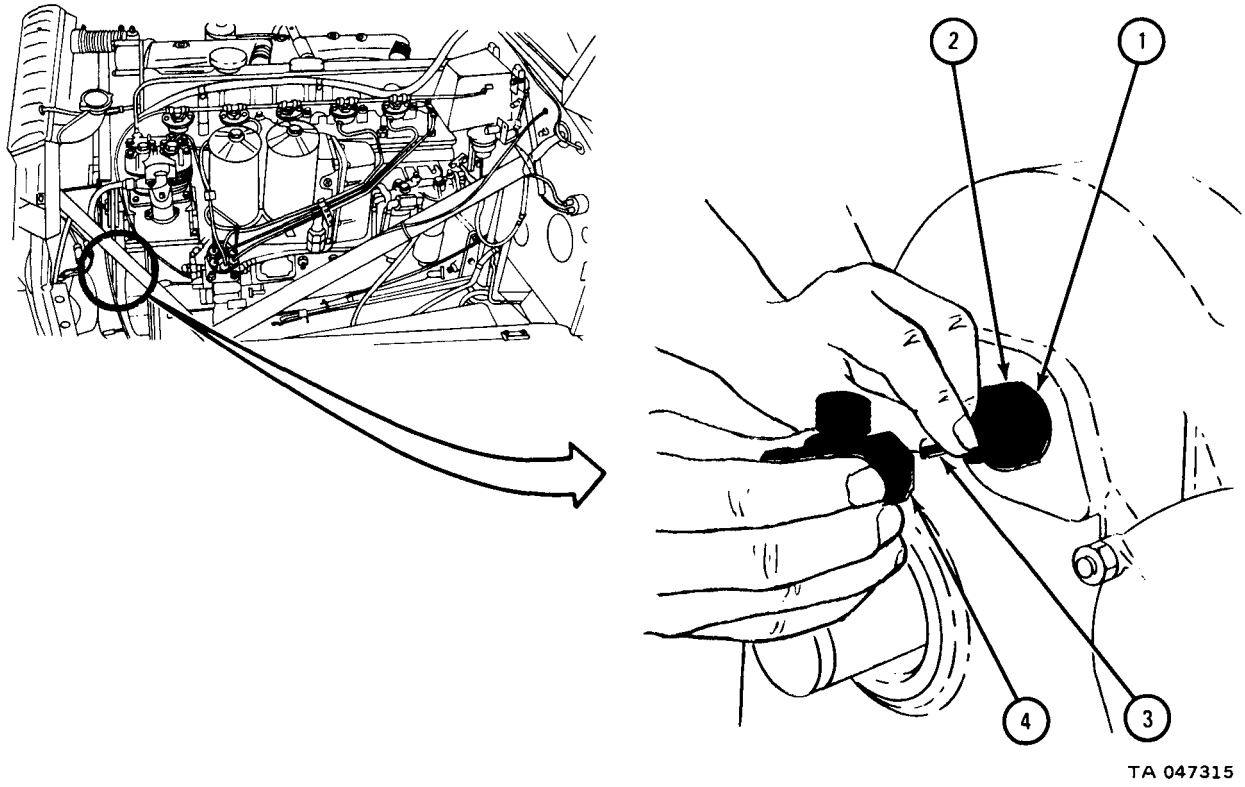
TA 101569

h. Replacement of Right Angle Adapter.

FRAME 1

1. Put gasket (1) on takeoff adapter (2) and screw adapter into mounting hole. Using 1-inch wrench, tighten adapter.
2. Put drive shaft (3) into takeoff adapter (2) and screw on angle drive adapter (4).
3. Using 1-inch wrench, tighten and position angle drive adapter (4). Face angle drive adapter so it will be in line with flexible cable assembly when put in.

END OF TASK



i. Replacement of Flexible Shaft Assembly.

FRAME 1

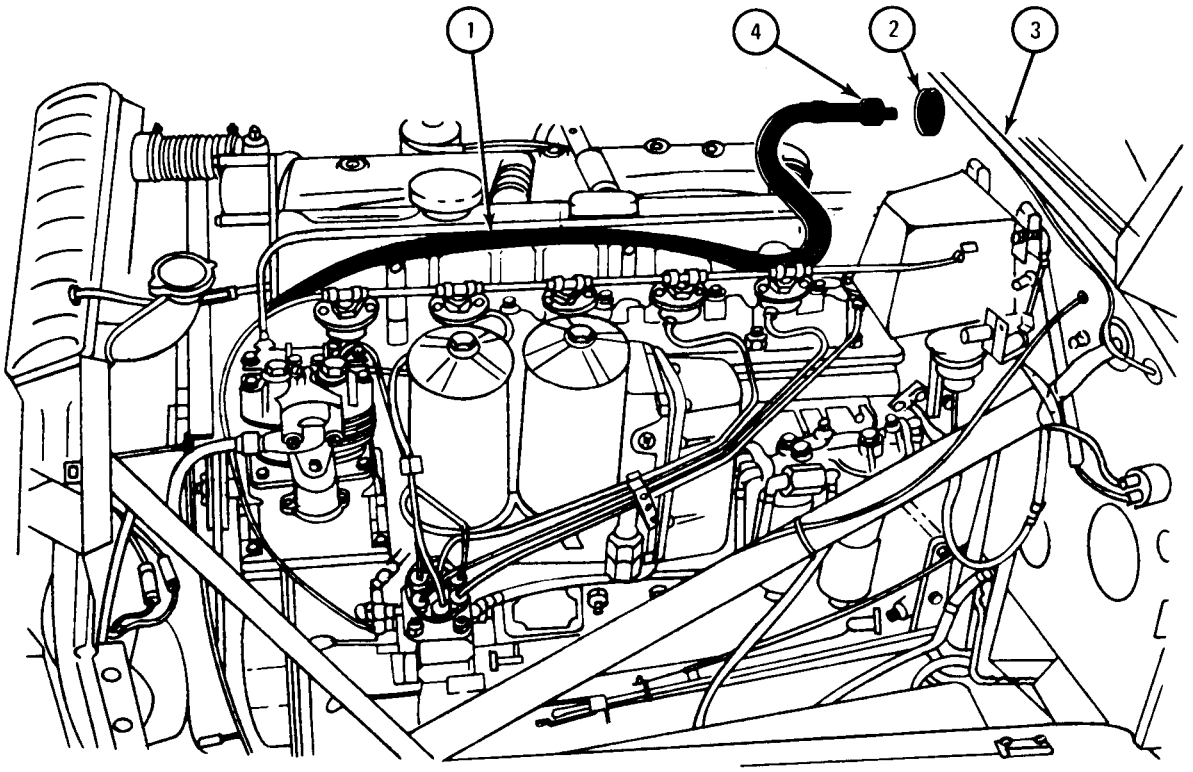
1. Place flexible shaft assembly (1) along top of engine as shown.
2. Put new grommet (2) in hole in firewall (3).

NOTE

Tachometer end (4) of flexible shaft assembly (1) has square shank.

3. Put tachometer end (4) of flexible shaft assembly (1) through grommet (2) as shown.

GO TO FRAME 2

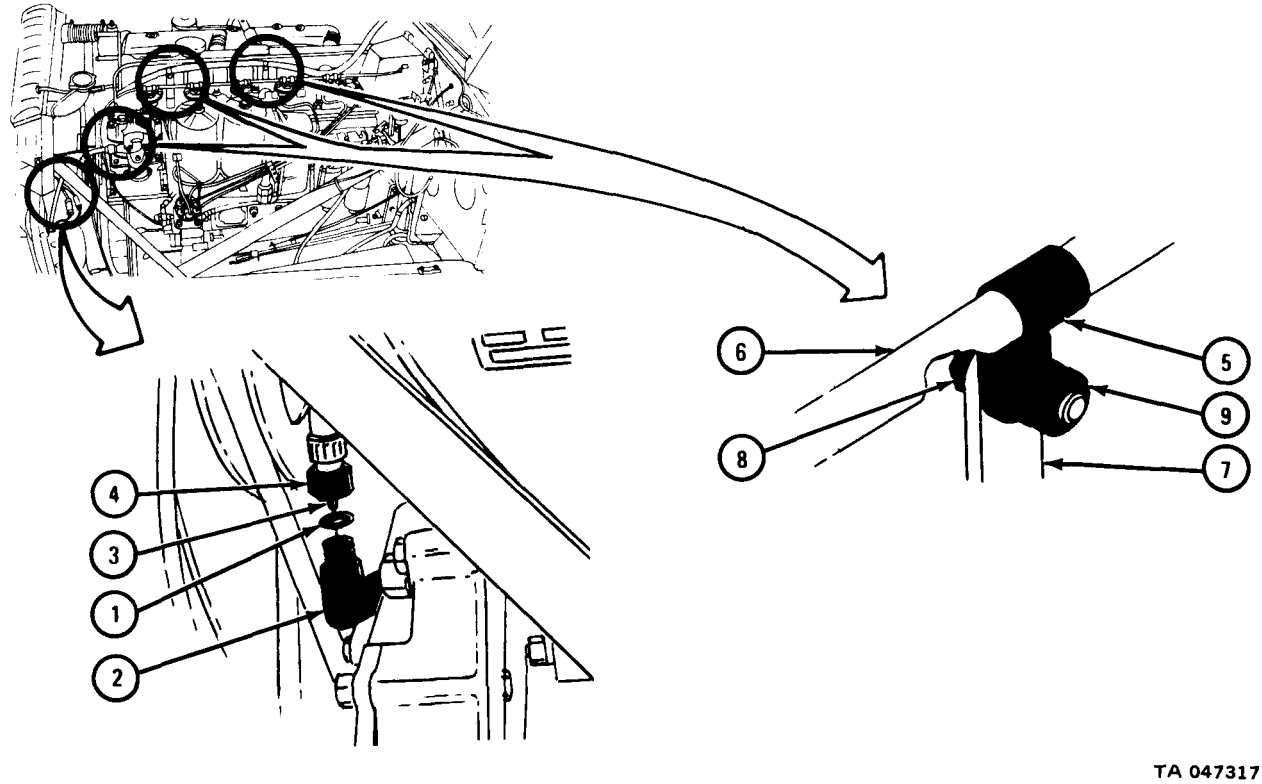


TA 047316

FRAME 2

1. Place gasket (1) on angle drive adapter (2). Aline key (3) with keyway in angle drive adapter and screw on coupling nut (4). Using 1-inch wrench, tighten coupling nut.
2. Put three clamps (5) on flexible shaft assembly (6). Aline holes in clamps with holes in three brackets (7).
3. Join three clamps (5) to brackets (7) using three bolts (8) and three locknuts (9). Using 7/16-inch wrenches, tighten locknuts.

END OF TASK



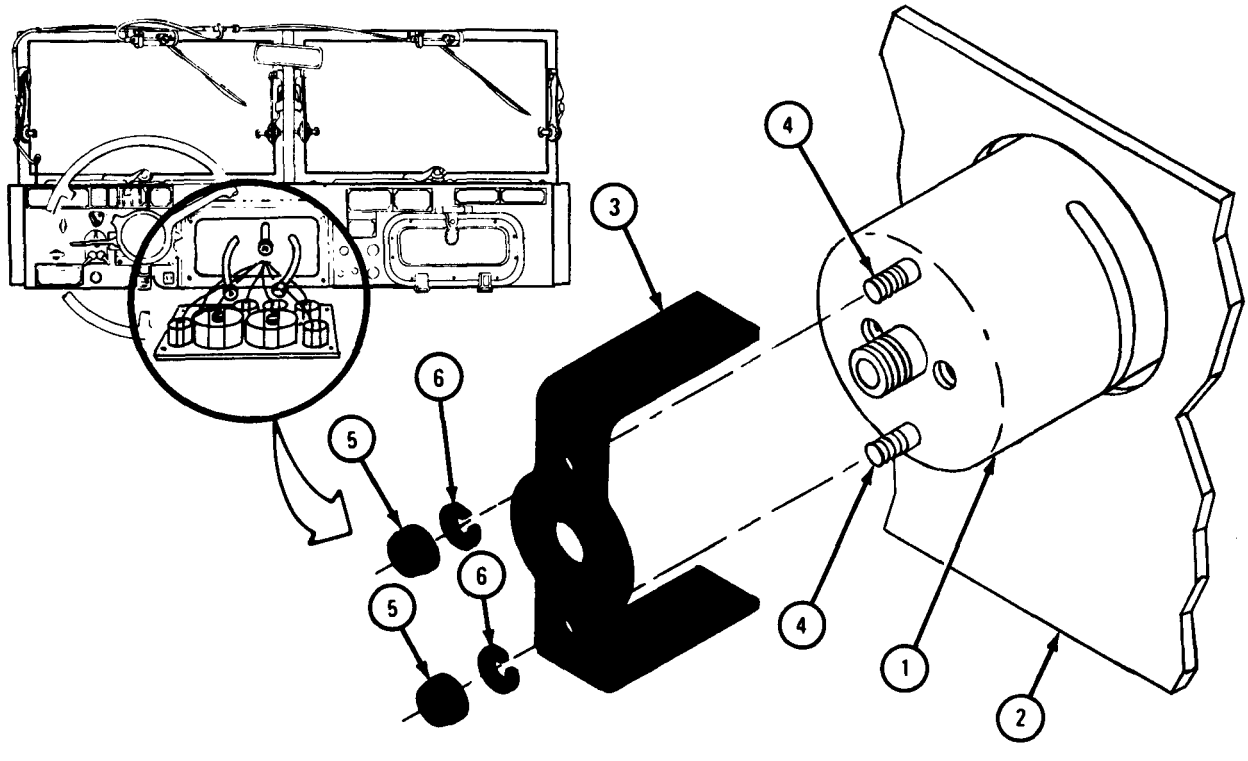
TA 047317

j. Replacement of Tachometer.

FRAME 1

1. Put tachometer (1) through hole in panel (2) from front of panel.
2. Place clamp (3) over studs (4) and screw on two nuts (5) with lockwashers (6).
3. Look at front of panel (2) and turn tachometer (1), if necessary, to make sure it is straight. Using 3/8-inch wrench, tighten two nuts (5).

GO TO FRAME 2

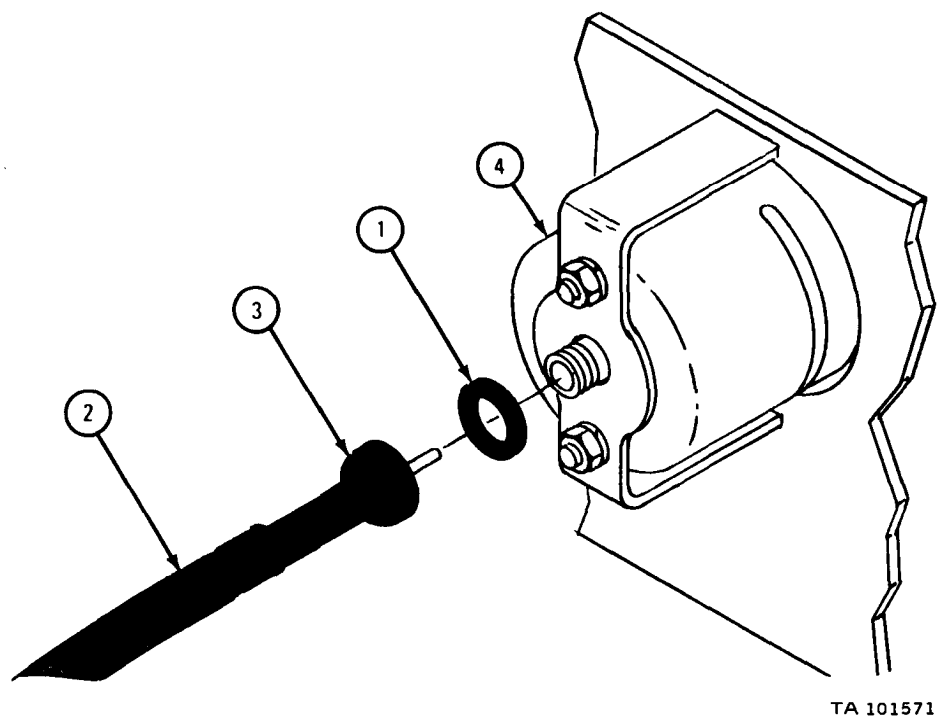


TA 101570

FRAME 2

1. Put gasket (1) over end of flexible shaft assembly (2) and press into coupling nut (3).
2. Put square end of flexible shaft assembly (2) into tachometer (4) and screw on coupling nut (3). Using /4-inch wrench, tighten nut.

GO TO FRAME 3



FRAME 3

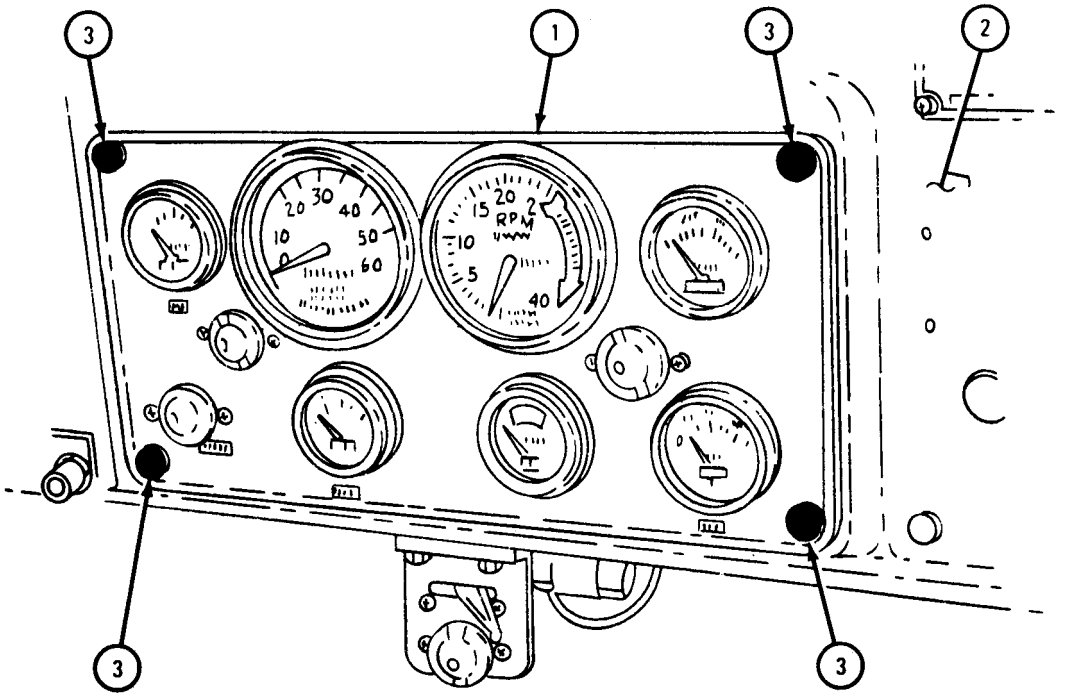
1. Place instrument cluster (1) on instrument panel (2) as shown.
2. Using screwdriver, turn mounting studs (3) 1/4 turn to right.
3. Enter hours of operation shown on tachometer in vehicle equipment log if new one was put in.

NOTE

Follow-on Maintenance Action Required:

1. Put on air compressor belt. Refer to Part 2, para 13-34.
2. Reconnect battery ground cable. Refer to Part 1, para 7-58.
3. Close hood and left side panel. Refer to TM 9-2320-209-10.
4. Start engine and check tachometer operation. Refer to TM 9-2320-209-20.

END OF TASK



TA 101572

22-4. SPEEDOMETER ASSEMBLY REMOVAL, REPAIR, AND REPLACEMENT.

TOOLS: Flat-tip screwdriver
3/4-inch open end wrench
3/8-inch open end wrench
Slip joint pliers
1-inch open end wrench
9/16-inch open end wrench
7/8-inch open end wrench

SUPPLIES: Cotter pin

PERSONNEL: Two

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Preliminary Procedures.

(1) Disconnect battery ground cable. Refer to Part 1, para 7-58.

(2) Open hood and left side panel. Refer to TM 9-2320-209-10.

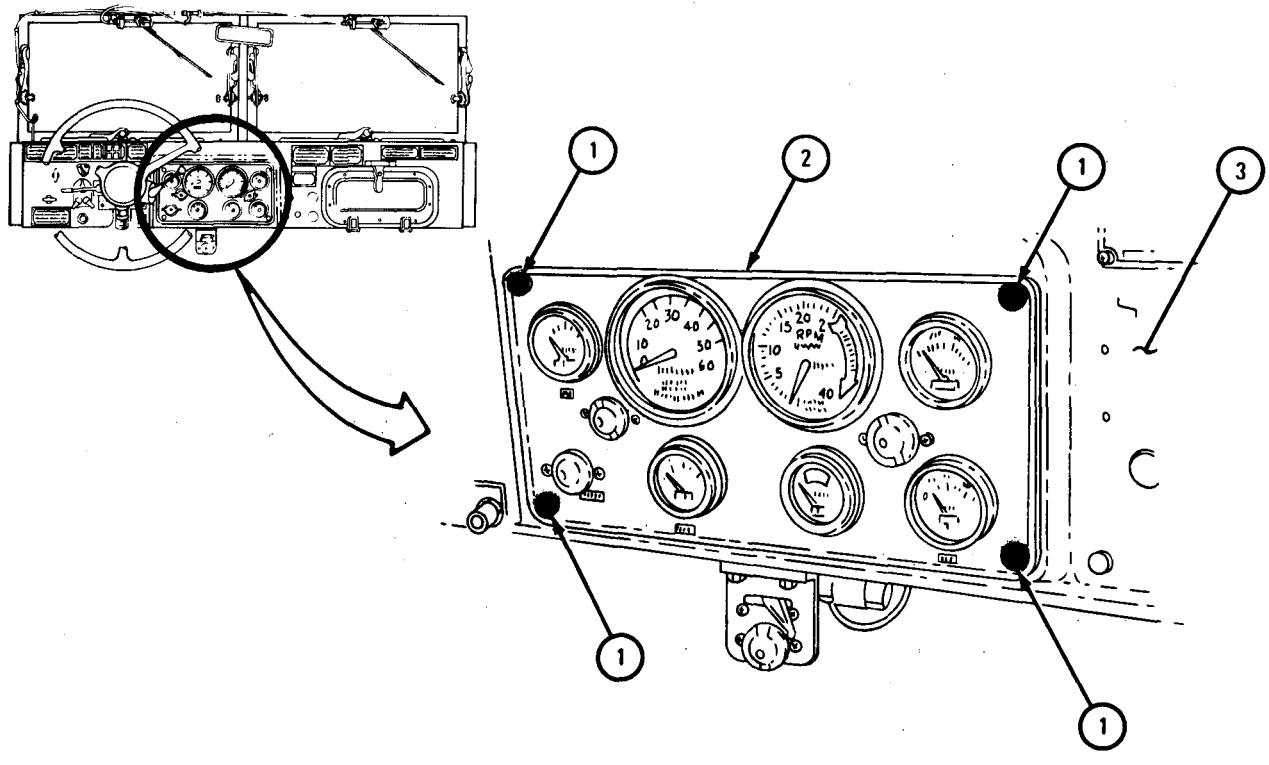
(3) Remove front tunnel. Refer to Part 3, para 18-5.

b. Removal of Speedometer.

FRAME 1

1. Using screwdriver, turn mounting studs (1) one quarter turn to the left.
2. Pull instrument cluster (2) away from instrument panel (3).

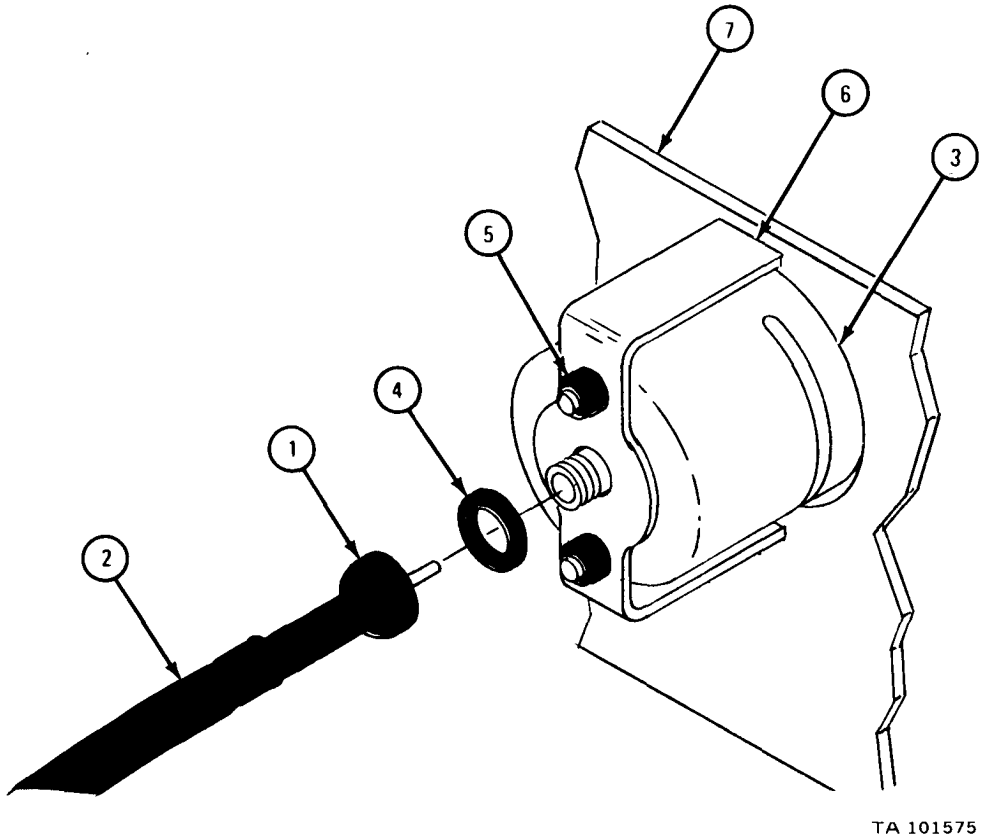
GO TO FRAME 2



FRAME 2

1. Using 3/4-inch wrench, unscrew nut (1) and pull flexible shaft assembly (2) away from speedometer (3). Take off gasket (4).
2. Using 3/8-inch wrench, unscrew and take off two nuts and lockwashers (5). Pull clamp (6) off speedometer (3) and take speedometer out from front of panel (7).
3. Enter odometer mileage indication in vehicle equipment log if another speedometer (3) is to be put in.

END OF TASK



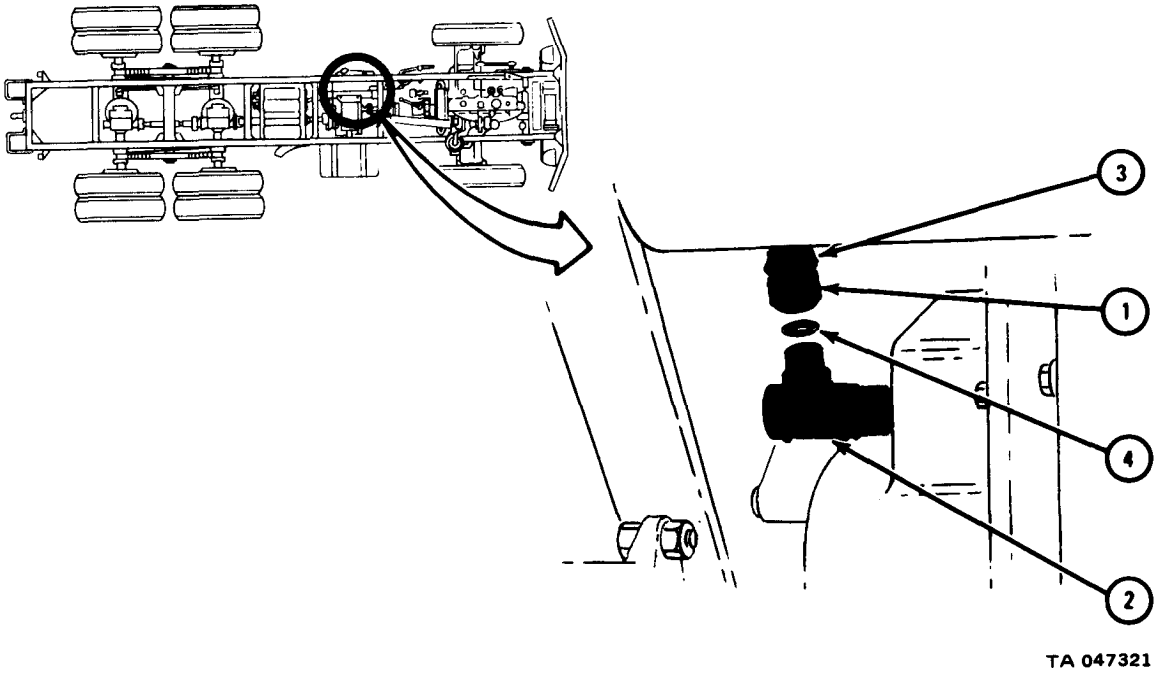
TA 101575

c. Removal of Flexible Shaft Assembly.

FRAME 1

1. Working under truck and using 1-inch wrench, unscrew coupling nut (1) from right angle adapter (2). Pull flexible shaft assembly (3) away from right angle adapter.
2. Take gasket (4) out of coupling nut (1).

GO TO FRAME 2



FRAME 2

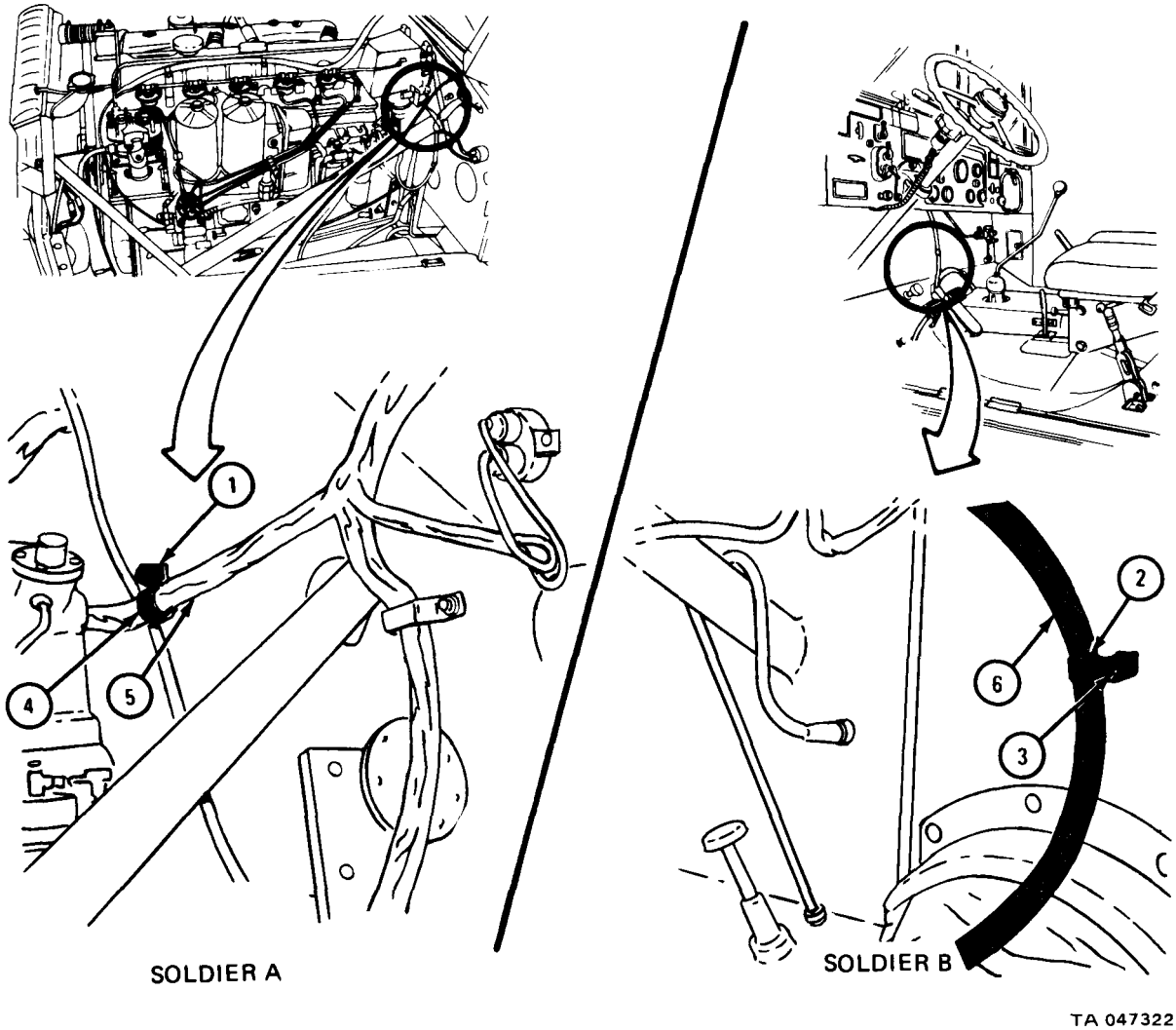
Soldier A 1. Put 9/16-inch wrench on locknut (1) that holds clamp (2) to firewall in cab. Tell soldier B when ready.

Soldier B 2. Using 9/16-inch wrench, hold bolt (3).

Soldier A 3. Unscrew locknut (1) and take off clamp (4). Leave clamp on cable (5).

Soldier B 4. Take out bolt (3) and take clamp (2) off flexible shaft (6).

GO TO FRAME 3



FRAME 3

NOTE

Some trucks may have speedometer flexible shaft clamped to floor boards instead of accelerator stop bolt.

Soldier A

1. Using pliers, take cotter pin (1) out of accelerator connecting link (2). Take connecting link out of pedal (3) and lift pedal clear of stop bolt (4).
2. Hold stop bolt (4) from turning.

Soldier B

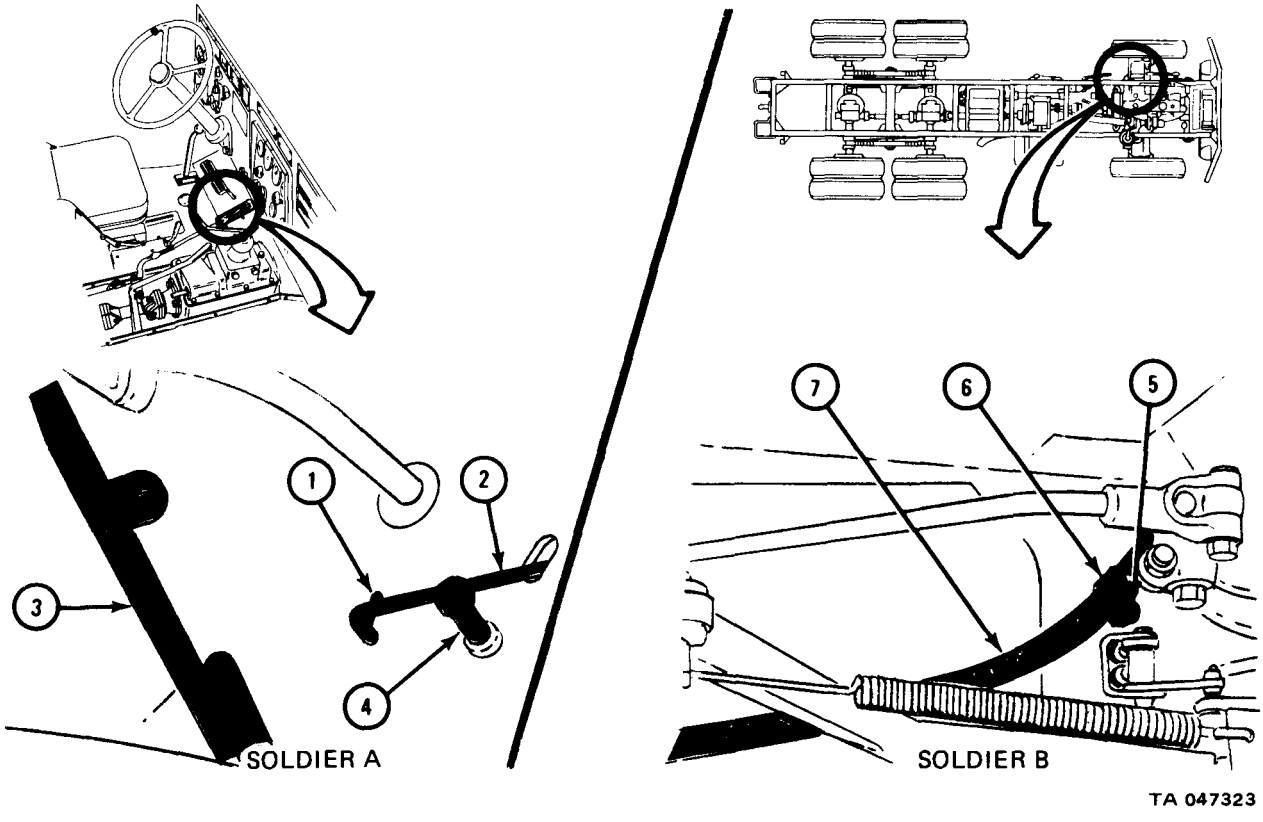
3. Using 9/16-inch wrench, unscrew locknut (5) and lift clamp (6) off bolt (4). Take clamp off flexible cable (7).

NOTE

Before taking flexible shaft (7) out of truck, note the way it is routed. Shaft must be put back the same way.

4. Take flexible shaft (7) out of truck.

END OF TASK

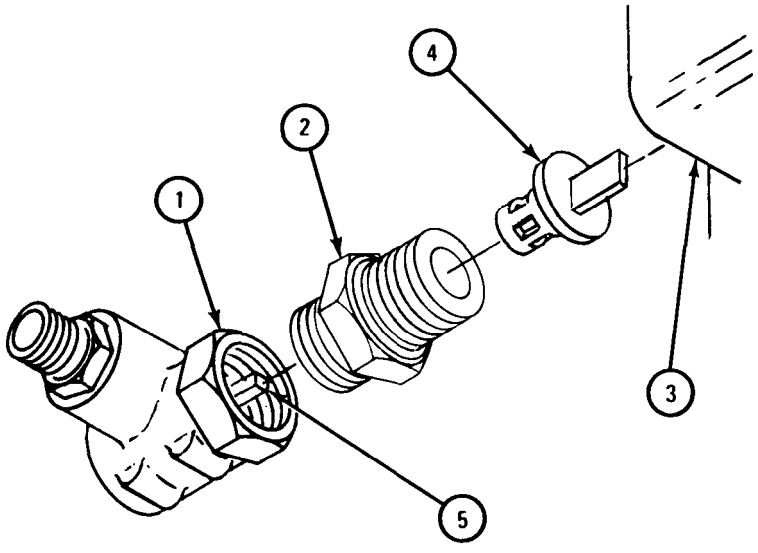


d. Removal of Right Angle Drive Adapter.

FRAME 1

1. Using 1-inch wrench, unscrew right angle drive adapter (1) with sleeve and seal (2) from transfer case (3).
2. Take drive adapter (4) out of sleeve and seal (2).
3. Using 7/8-inch wrench, unscrew sleeve and seal (2) from right angle drive adapter (1). Take out sliding drive shaft (5).

END OF TASK



TA 047324

e. Removal of Flexible Shaft Core.

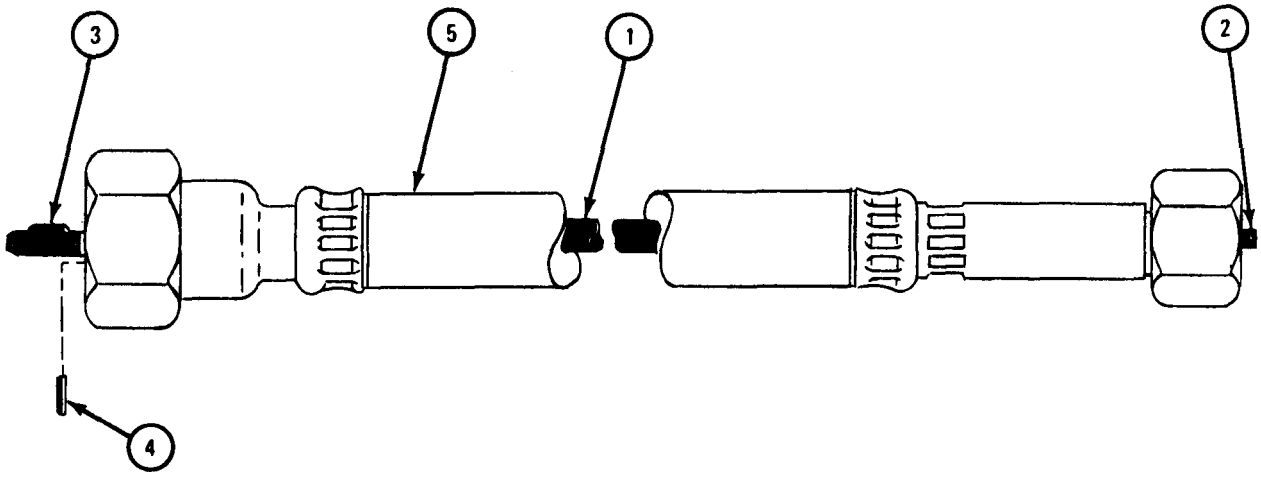
FRAME 1

NOTE

The flexible shaft assembly does not have to be taken out of truck to put back core (1), but it must be taken off at speedometer end (2) and transfer end (3).

1. Take retaining clip (4) from transfer end (3) of core (1).
2. Take flexible shaft core (1) out of casing (5) by pulling on transfer end (3) with pliers.
3. If flexible shaft core (1) is broken, use pliers on speedometer end (2) to pull out other piece.

END OF TASK



TA 047313

f. Repair of Flexible Shaft Assembly. The only repair that can be made to the flexible shaft assembly is to replace core. Refer to para 22-4e and 22-4g of this procedure.

g. Replacement of Flexible Shaft Core.

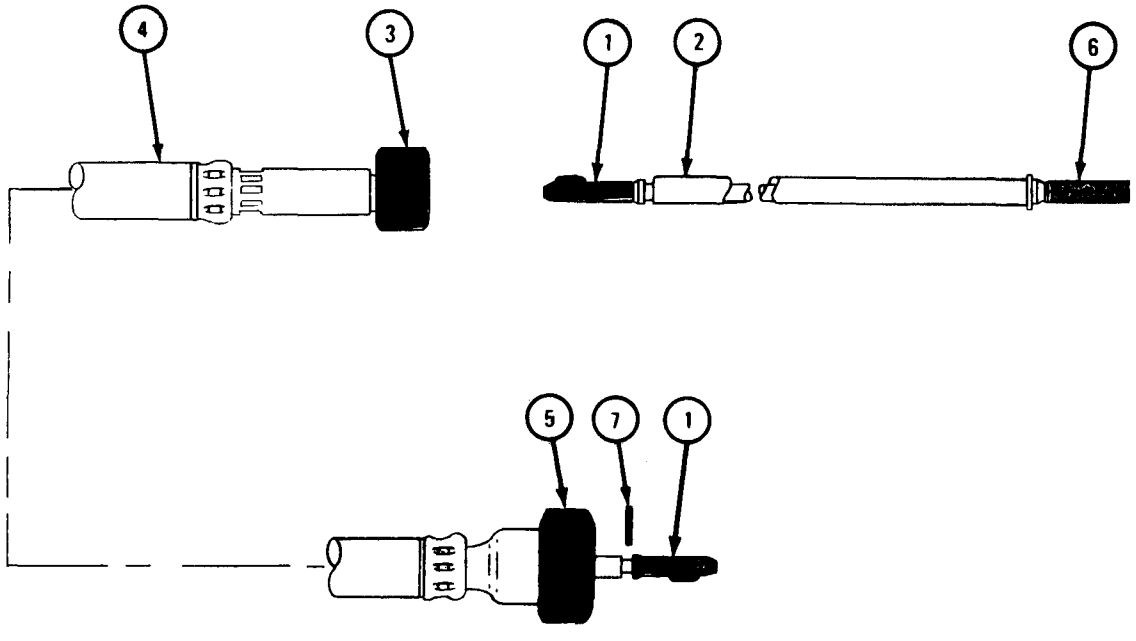
NOTE

Before putting back flexible shaft core, check that it has no dents, sharp bends or other damage. If casing is damaged, do not put back core. Get a new complete flexible shaft assembly.

FRAME 1

1. Put keyed end (1) of core (2) into speedometer end (3) of casing (4) that has the smaller coupling nut.
2. Carefully push core (2) through casing (4) until keyed end (1) seats in transfer end (5) of casing. Square end (6) should stick out of speedometer end (3) of casing as shown.
3. Put on retaining clip (7).

END OF TASK



TA 101569

h. Replacement of Right Angle Drive Adapter.

FRAME 1

NOTE

Speedometer right angle drive adapters are supplied in two different gear ratios. Change parts (1 and 2) only with parts having same part numbers.

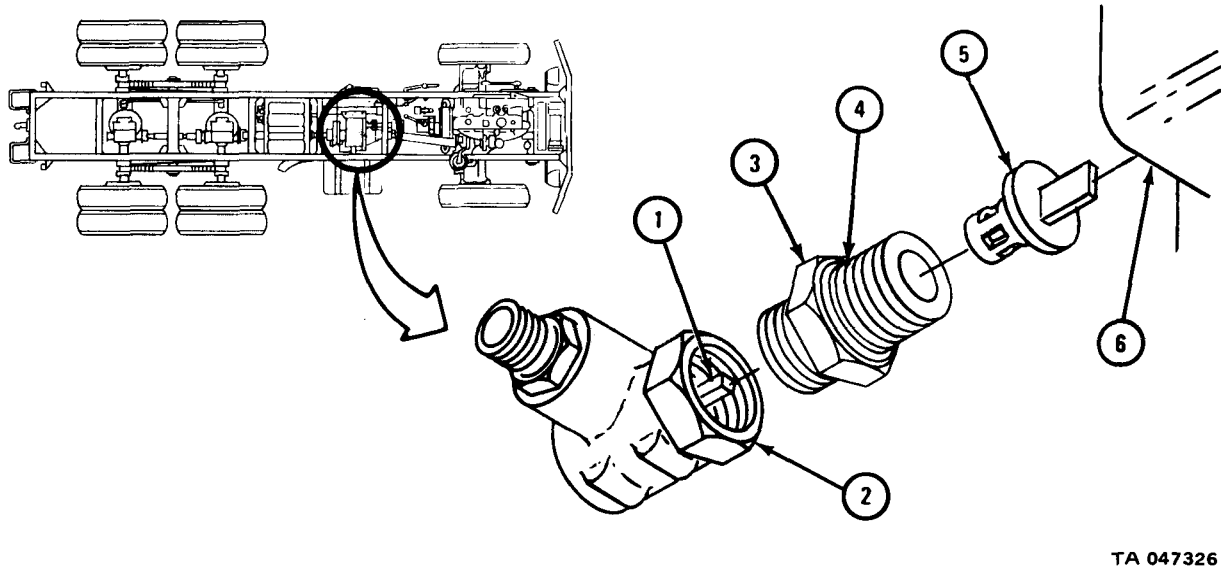
1. Put sliding drive shaft (1) into right angle drive adapter (2).
2. Screw sleeve (3) with seal (4) into right angle drive adapter (2) and tighten using 7/8-inch wrench.
3. Put drive adapter shaft (5) into hole in transfer case (6). Mesh flat end of shaft with slot in transfer case.

CAUTION

Make sure lip of rubber seal (4) faces transfer case (6) to keep oil from leaking.

4. Carefully screw assembled right angle drive adapter (2) into transfer case (6) and tighten using 1-inch wrench.
5. Face right angle drive adapter (2) to best position to take flexible shaft assembly without bending shaft.

END OF TASK



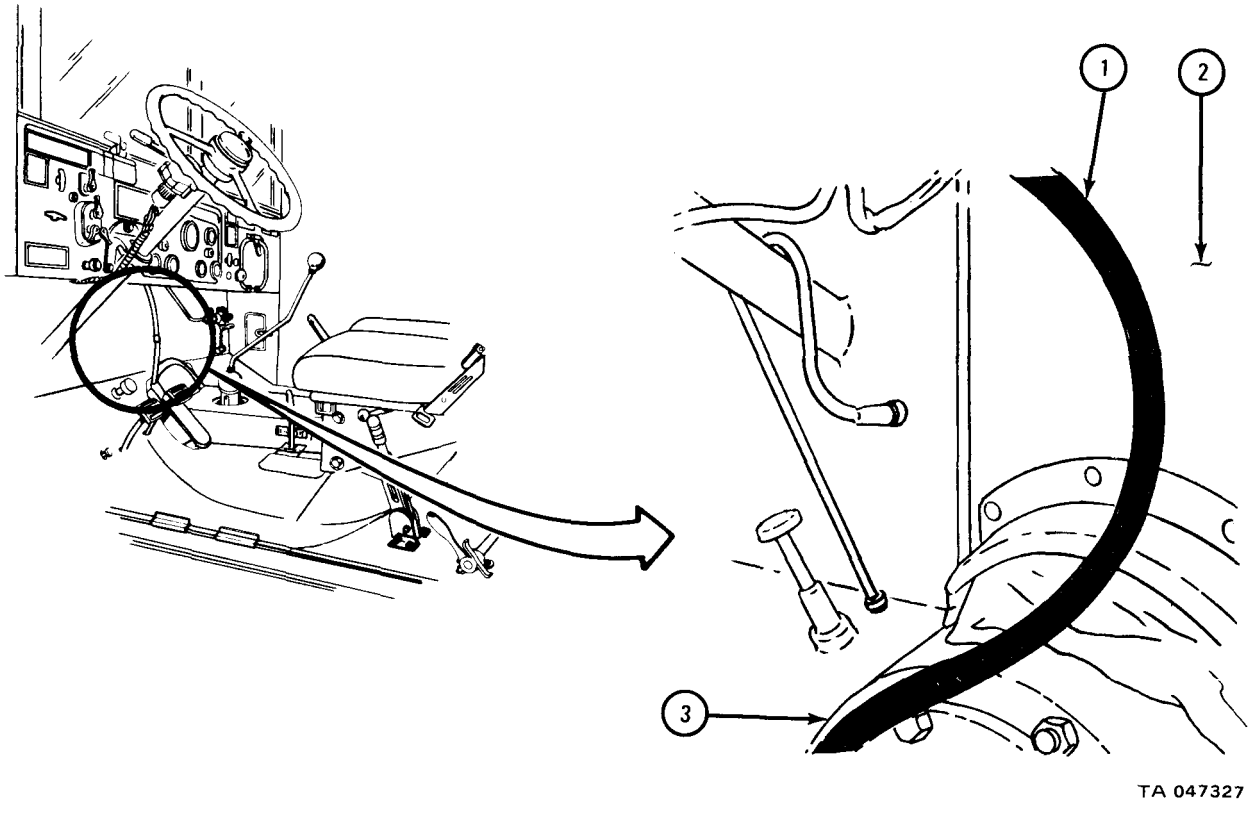
i. Replacement of Flexible Shaft Assembly.

FRAME 1

Soldier B 1. Stand by under truck.

Soldier A 2. Route keyed end of flexible shaft assembly (1) from inside of cab down firewall (2). Route it down left side of transmission (3) as shown to soldier B under truck.

GO TO FRAME 2



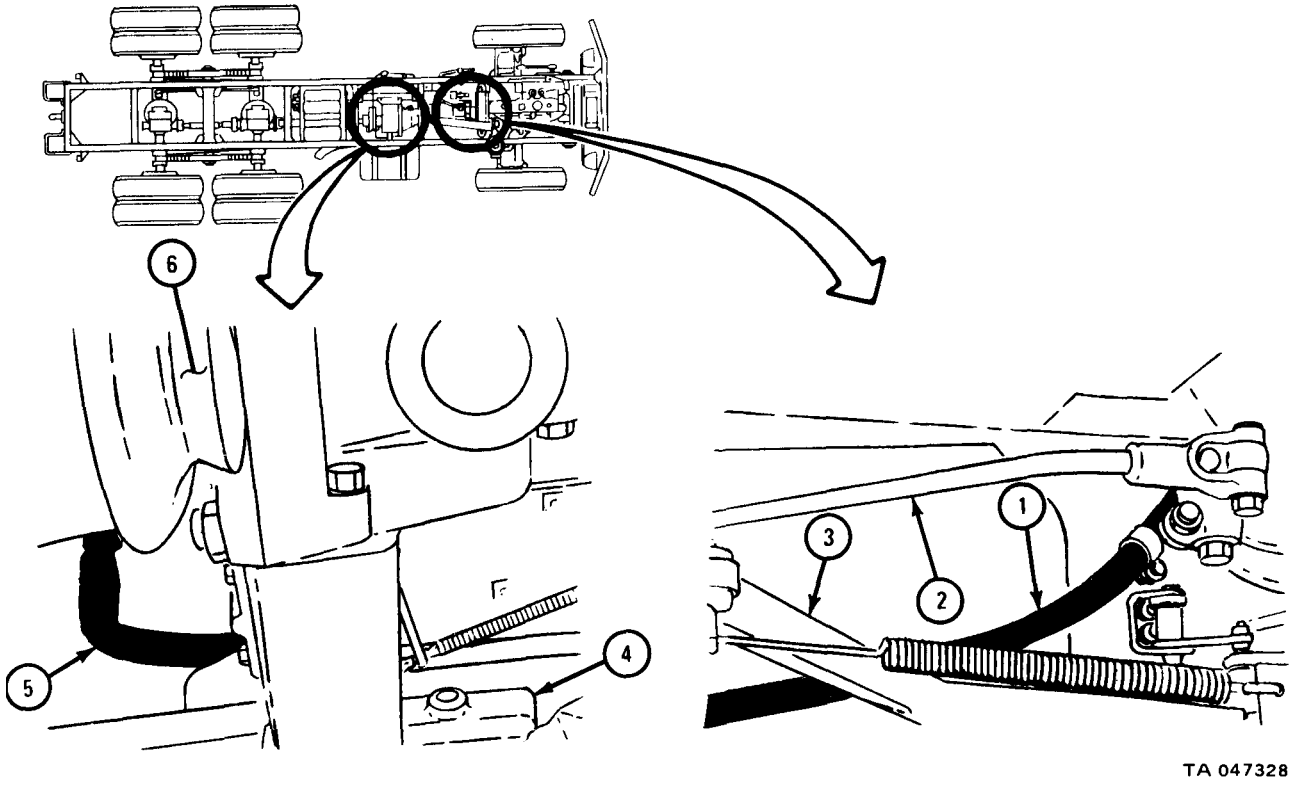
FRAME 2

NOTE

Speedometer flexible shaft (1) routing under cab may vary slightly on different trucks. Route replacement cable same way as noted.

Soldier B 1. Route flexible shaft assembly (1) over clutch linkage (2), brake lever (3), and brake cylinder (4). Route keyed end (5) back to transfer (6) as shown.

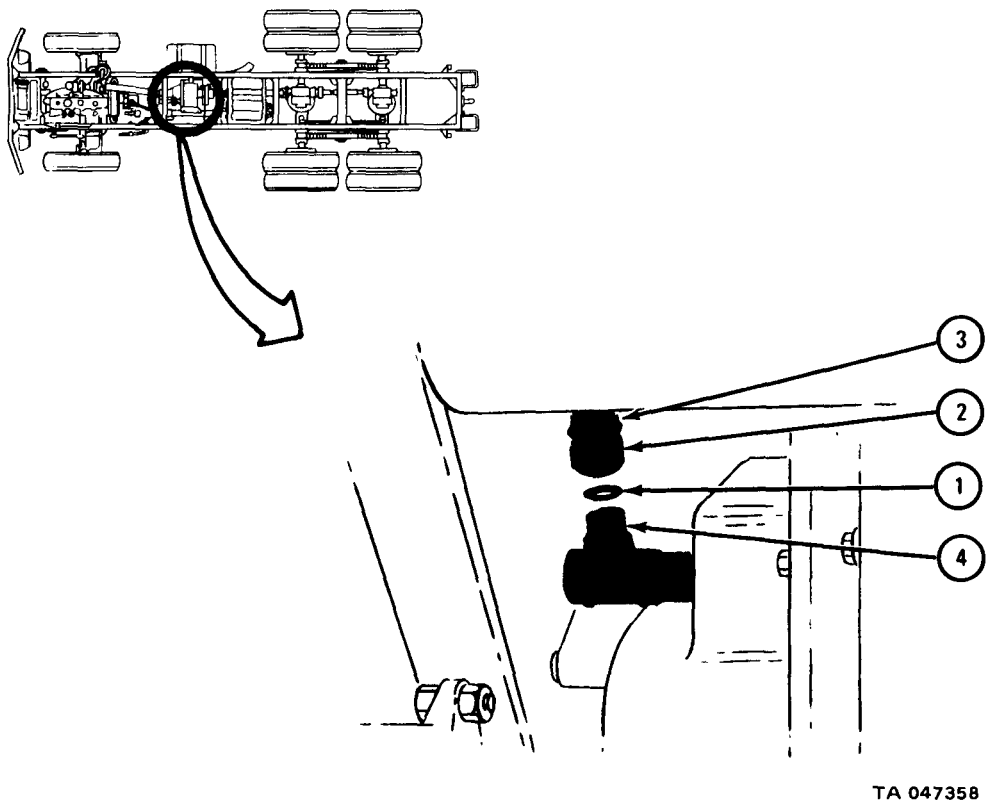
GO TO FRAME 3



FRAME 3

1. Make sure gasket (1) is seated inside coupling nut (2).
2. Put keyed end of flexible shaft (3) in right angle adapter (4). Screw on coupling nut (2) and tighten using 1-inch wrench.

GO TO FRAME 4



FRAME 4

NOTE

Some trucks may have speedometer flexible shaft clamped to floorboards instead of accelerator stop bolt.

Soldier A

1. Stand by in cab with 9/16-inch wrench to hold accelerator stop bolt (1) when soldier B is ready under truck.

Soldier B

2. Put clamp (2) on flexible shaft (3). Tell soldier A to press down on stop bolt (1) with fingers.

3. Put clamp (2) on bolt and screw on locknut (4) with fingers.

CAUTION

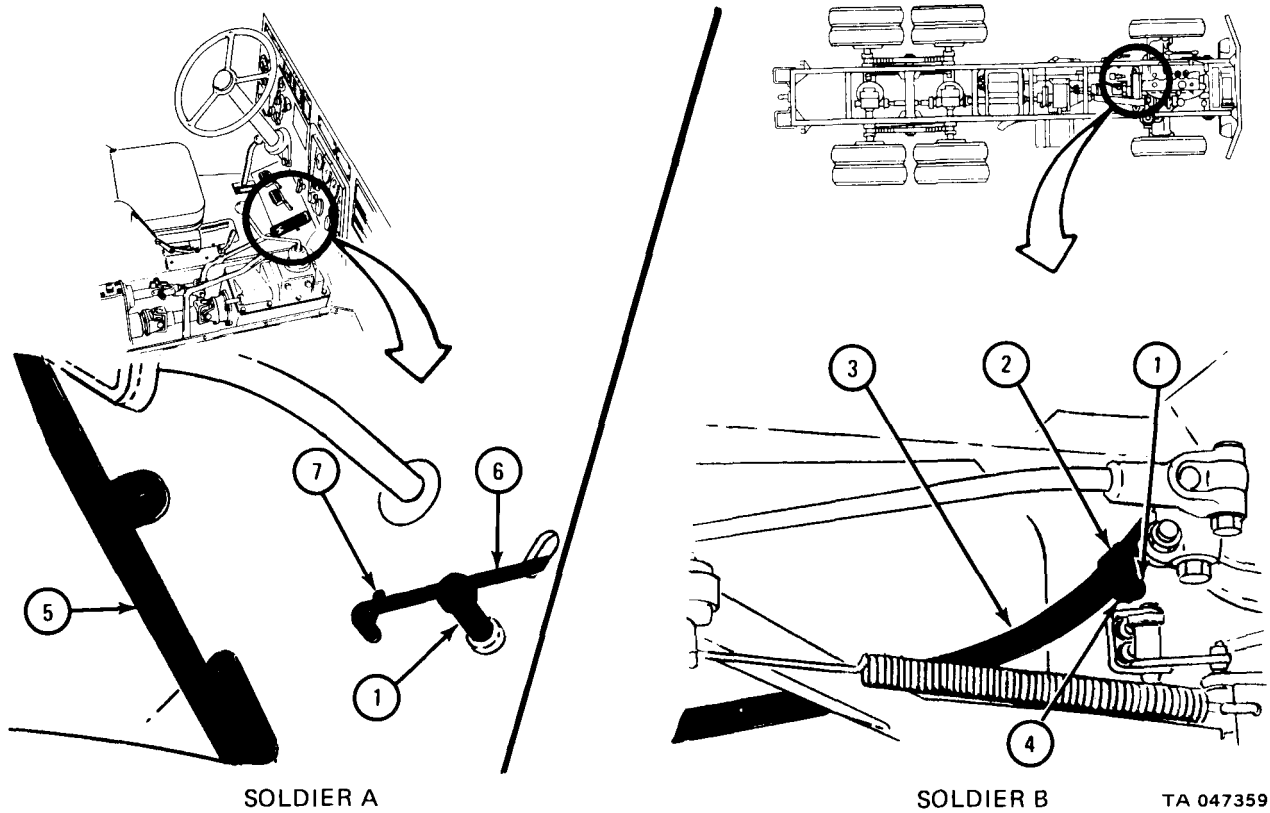
Check that flexible shaft (3) is clear of all moving linkages and free of sharp bends. Move shaft in clamp as necessary to feed extra slack through cab floor.

4. Tell soldier A to hold stop bolt (1) with 9/16-inch wrench. Using 9/16-inch wrench, tighten locknut (4).

Soldier A

5. Lower pedal (5) and put connecting link (6) through hole in pedal. Using pliers, put cotter pin (7) through hole in end of connecting link and bend open ends of cotter pin.

GO TO FRAME 5



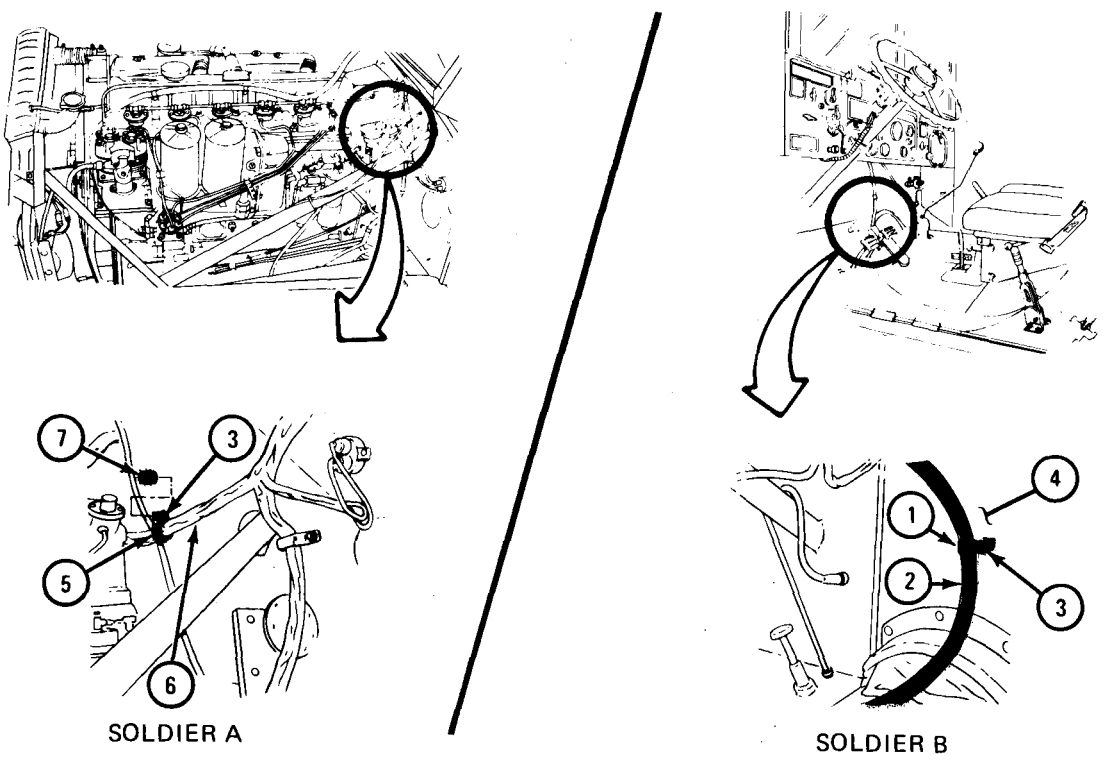
FRAME 5

Soldier A 1. Stand by on engine side of firewall with 9/16-inch wrench.

Soldier B 2. Put clamp (1) on flexible shaft (2) and put bolt (3) through clamp. Put bolt through hole in firewall (4). Put 9/16-inch wrench on bolt.

Soldier A 3. Make sure clamp (5) is around cable (6) and then put clamp on bolt (3). Screw on locknut (7) and tighten using 9/16-inch wrench.

END OF TASK

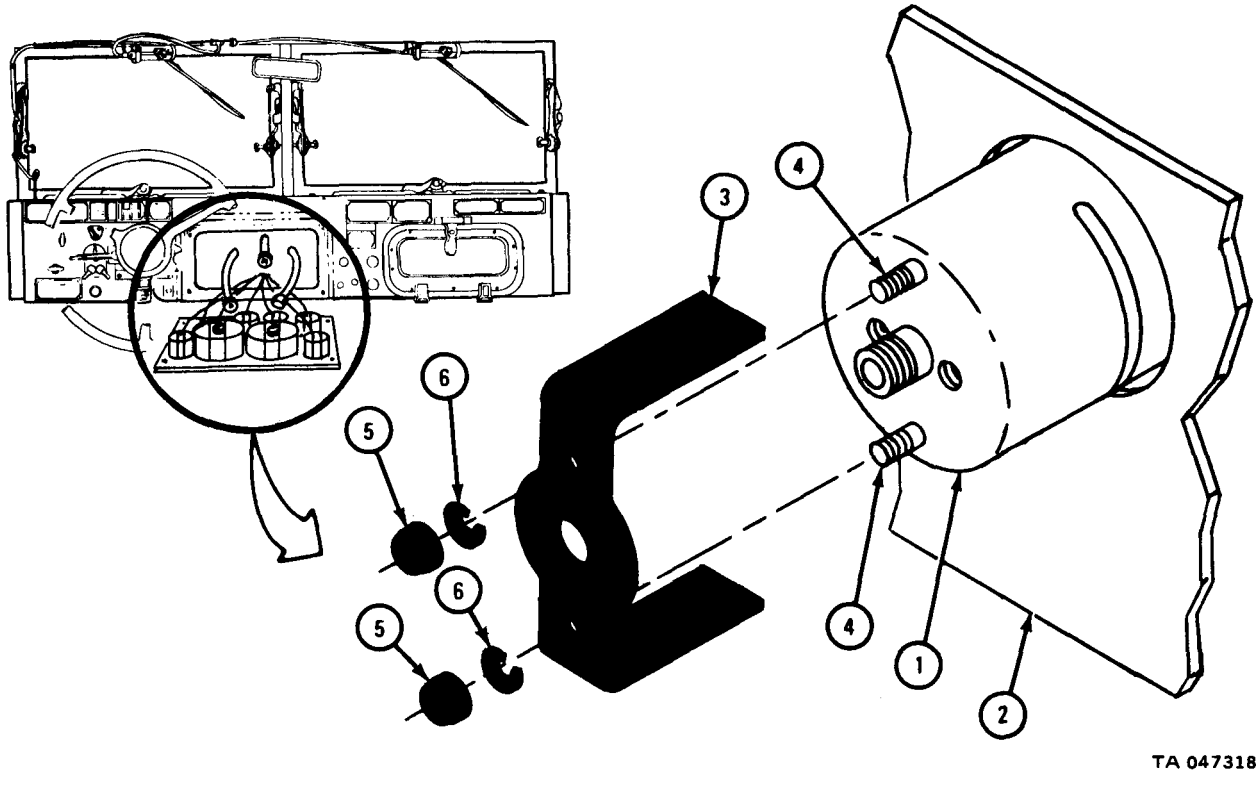


j. Replacement of Speedometer.

FRAME 1

1. Put speedometer (1) through hole in panel (2) from front of panel.
2. Place clamp (3) over studs (4) and screw on two nuts (5) with lockwashers (6).
3. Look at front of panel (2) and turn speedometer (1) if necessary to make sure it is straight. Using 3/8-inch wrench, tighten two nuts (5).

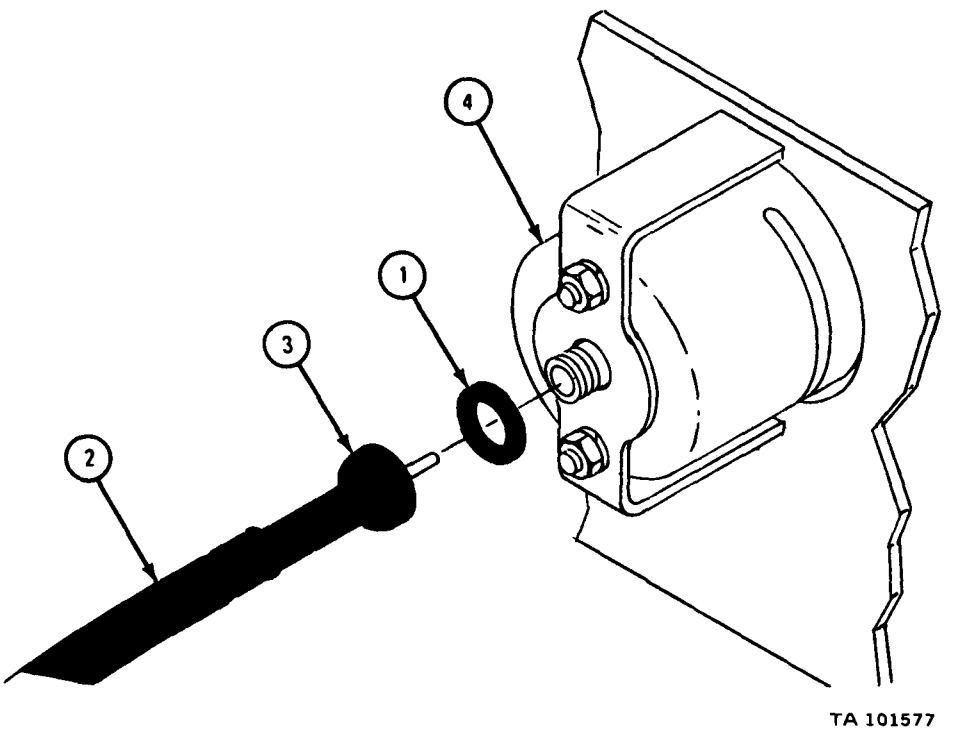
GO TO FRAME 2



FRAME 2

1. Put gasket (1) over end of flexible shaft assembly (2) and press into coupling nut (3).
2. Put square end of flexible shaft assembly (2) into speedometer (4) and screw on coupling nut (3). Using 3/4-inch wrench, tighten nut.

GO TO FRAME 3



TA 101577

FRAME 3

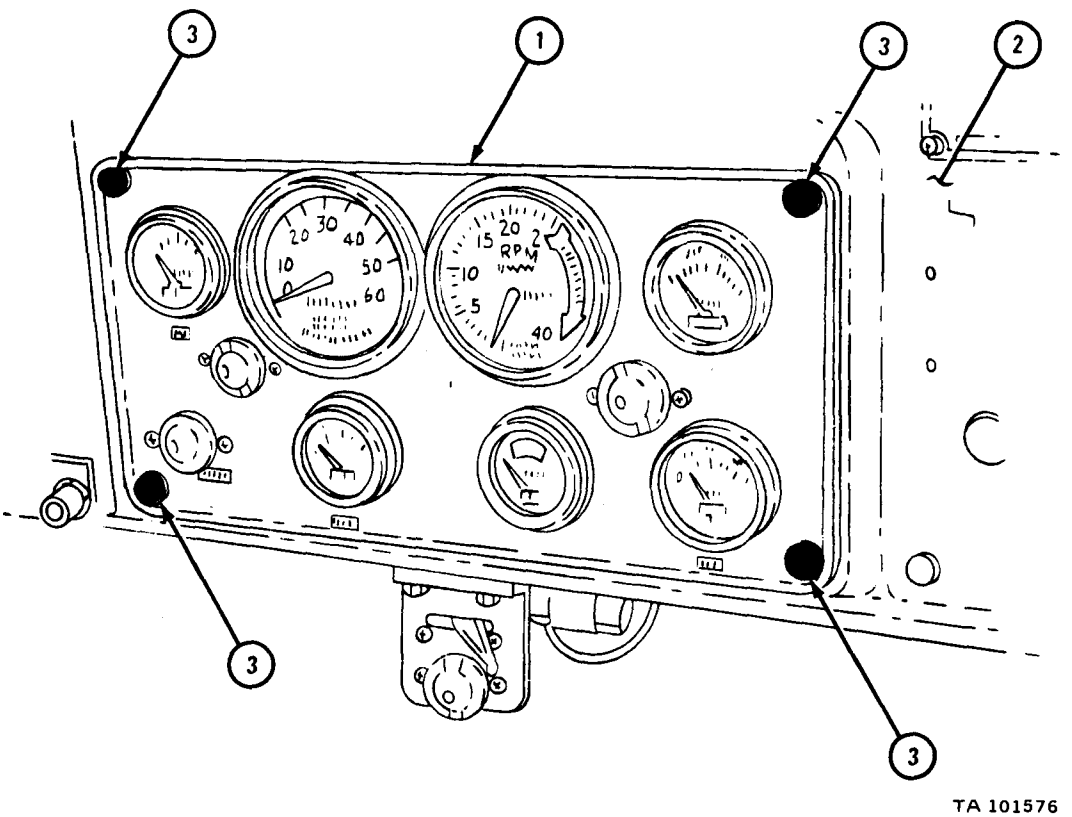
1. Place instrument cluster (1) on instrument panel (2) as shown.
2. Using screwdriver, turn mounting studs (3) 1/4 turn to right.
3. Enter odometer mileage indication speedometer in vehicle equipment log if new one was put in.

NOTE

Follow-on Maintenance Action Required

1. Reconnect battery ground cable. Refer to Part 1, para 7-58.
2. Close hood and left side panel. Refer to TM 9-2320-209-10.
3. Replace front tunnel. Refer to Part 3, para 18-5.
4. Road test truck and check speedometer and odometer operation. Refer to TM 9-2320-209-10.

END OF TASK



CHAPTER 23
MAINTENANCE OF MATERIAL USED IN CONJUNCTION WITH MAJOR ITEMS

Section I. SCOPE

23-1. EQUIPMENT ITEMS COVERED. This chapter gives equipment maintenance procedures for winterization kits, deep water fording kit, and special purpose kits for which there are authorized corrective maintenance tasks at the organizational maintenance level.

23-2. EQUIPMENT ITEMS NOT COVERED. All equipment items for which corrective maintenance is authorized at the organizational maintenance level are covered in this chapter.

Section II. WINTERIZATION KITS

23-3. VEHICULAR COMPARTMENT HEATER REMOVAL AND REPLACEMENT.

TOOLS: Flat-tip screwdriver
Open end wrench set, pn GGG-W-636

SUPPLIES: None

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Preliminary Procedures.

(1) Open hood. Refer to TM 9-2320-209-10.

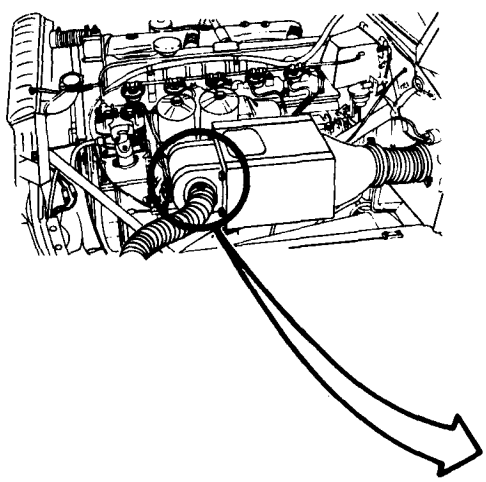
(2) Remove two heater hoses. Refer to para 23-18.

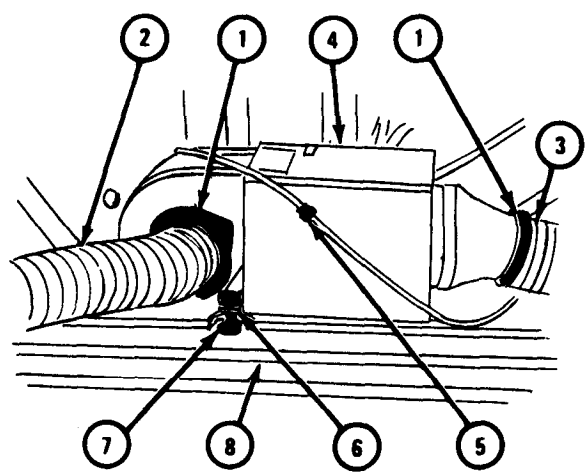
b. Removal.

FRAME 1

1. Using screwdriver, loosen two screws in two clamps (1). Pull ram air duct (2) and heater outlet duct (3) from heater assembly (4).
2. Unplug heater motor electrical cable connector (5).
3. Using wrenches, unscrew and take off four screws and lockwashers (6) and nuts (7). Take heater assembly (4) from heater support (8).

END OF TASK





TA 047486

c. Replacement.

FRAME 1

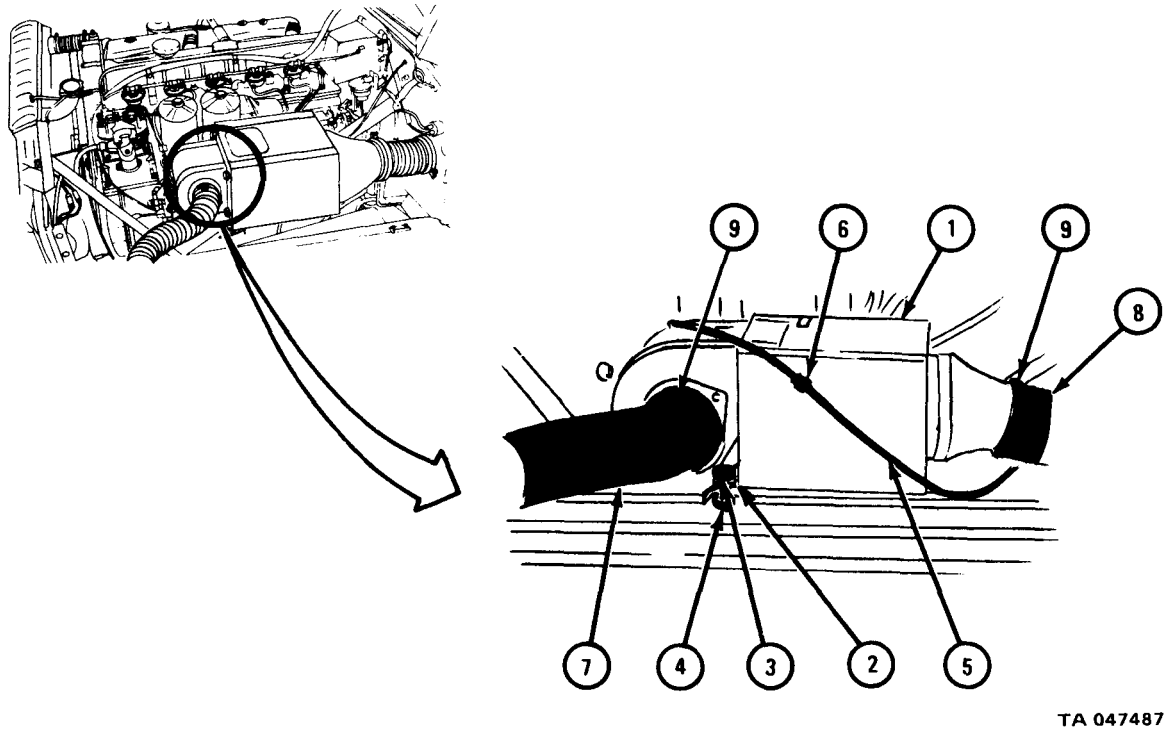
1. Put heater assembly (1) in place on heater support (2) and line up holes.
2. Using wrenches, screw in and tighten four screws (3) and lockwashers and nuts (4).
3. Join two ends of heater motor cable (5) and plug together connector (6).
4. Put ram air duct (7) and heater outlet duct (8) onto heater assembly (1). Using screwdriver, screw in and tighten two screws in two clamps (9).

NOTE

Follow-on Maintenance Action Required:

1. Replace two heater hoses. Refer to para 23-18.
2. Close hood. Refer to TM 9-2320-209-10.

END OF TASK



23-4. FUEL BURNING PERSONNEL HEATER DUCTING REPAIR.

TOOLS: Flat-tip screwdriver
3-foot tape measure

SUPPLIES: None

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

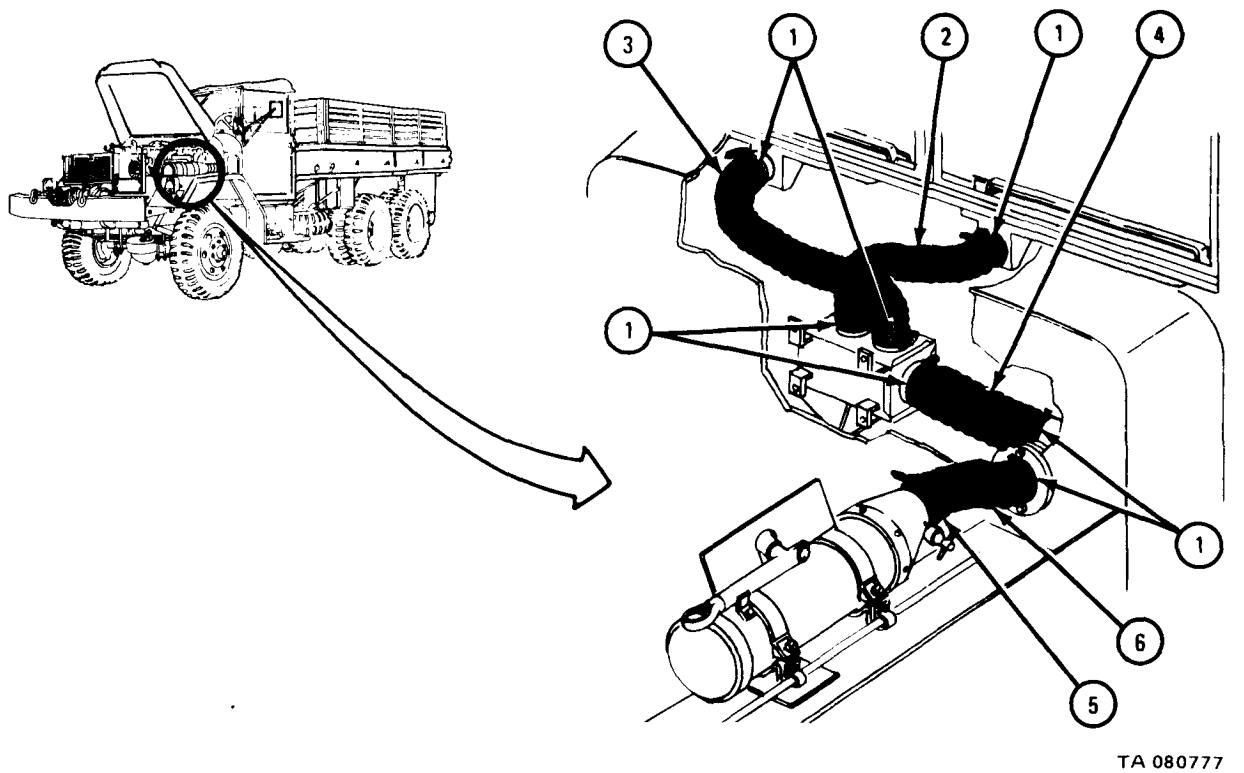
a. Preliminary Procedure. Open hood and left side panel. Refer to TM 9-2320-209-10.

b. Removal.

FRAME 1

1. Working from inside cab and using screwdriver, loosen six duct clamps (1).
2. Turn and pull off three diverter ducts (2, 3, and 4) and take off six duct clamps (1).
3. Working in engine compartment and using screwdriver, loosen two heater duct clamps (5).
4. Turn and pull off heater duct (6) and take off two duct clamps (5).

END OF TASK



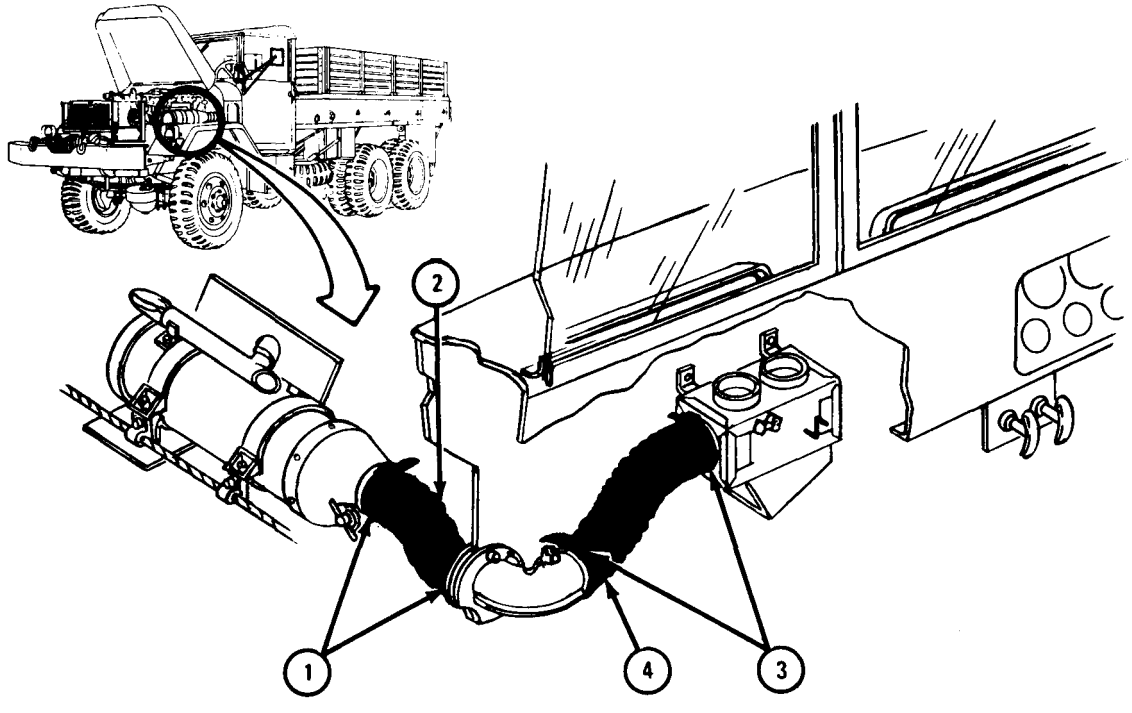
c. Repair. Repair is limited to throwing out damaged parts and getting new parts in their place.

d. Replacement.

FRAME 1

1. Working in engine compartment, put two duct clamps (1) on 3 1/2-inch heater duct (2). Put heater duct in place and slide duct clamps to each end of duct as shown. Using screwdriver, tighten two duct clamps.
2. Working from inside of cab, put two duct clamps (3) on 19 1/2-inch diverter duct (4). Put diverter duct in place and slide duct clamps to each end of duct as shown.
3. Using screwdriver, tighten two duct clamps (3).

GO TO FRAME 2



TA 080778

FRAME 2

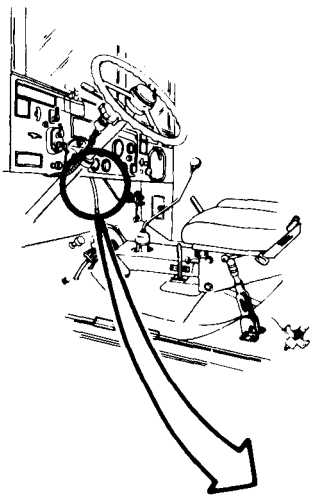
1. Working from inside cab, put two duct clamps (1) on 29 1/2-inch diverter duct (2). Put one end of diverter duct on left port of diverter assembly (3) and put other end of left deflector (4). Slide duct clamps to each end of duct.
2. Using screwdriver, tighten two duct clamps (1).
3. Put two duct clamps (5) on 26 1/2-inch diverter duct (6). Put one end of diverter duct on right port of diverter assembly (3) and put other end on right deflector (7). Slide duct clamp to each end of duct.
4. Using screwdriver, tighten two duct clamps (5).

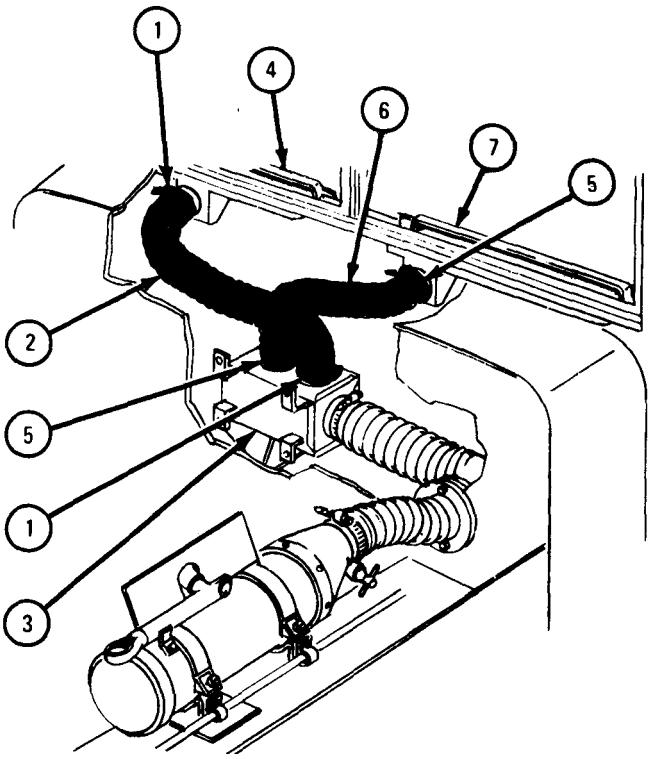
NOTE

Follow-on Maintenance Action Required:

Close hood and left side panel. Refer to TM 9-2320-209-10.

END OF TASK





TA 080779

23-5. FUEL BURNING PERSONNEL HEATER AIR DIVERTER REPAIR.

TOOLS: Flat-tip screwdriver
7/16-inch wrench (2)

SUPPLIES: None

PERSONNEL: Two

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

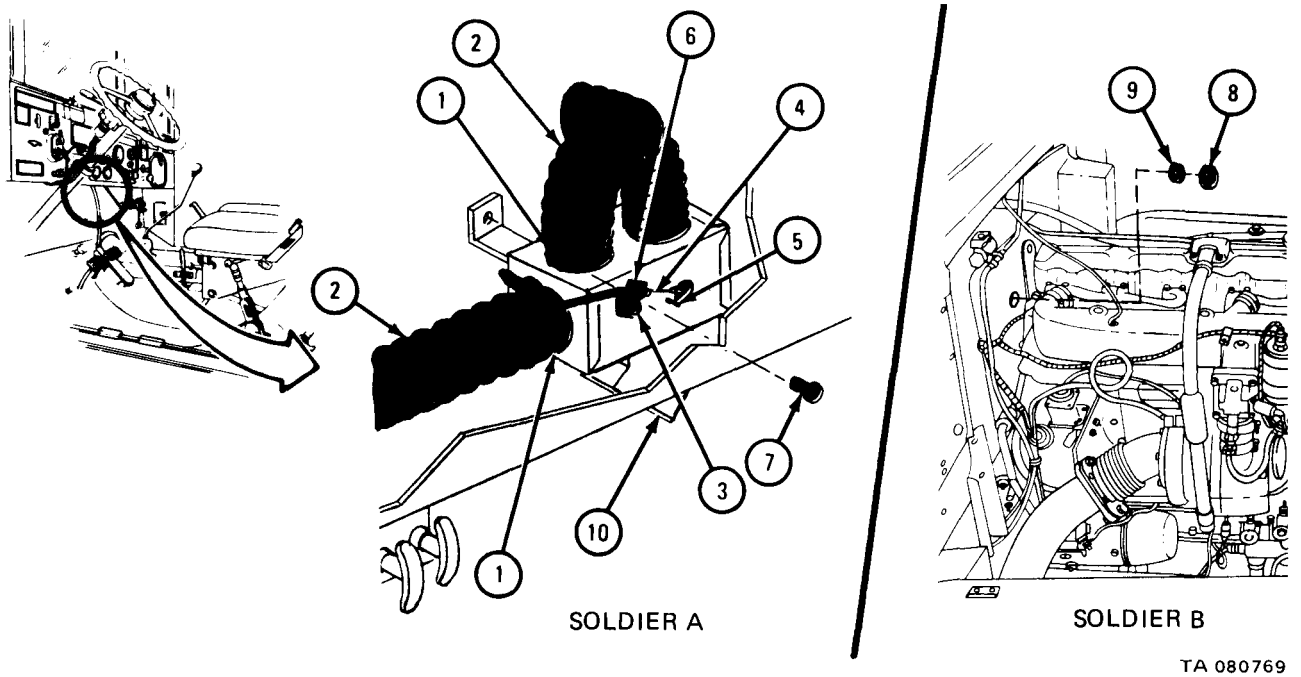
a. Preliminary Procedure. Open hood and right side panel. Refer to TM 9-2320-209-10.

b. Removal.

FRAME 1

Soldier A	1.	Working from inside of cab and using screwdriver, loosen three duct clamps (1).
	2.	Turn and pull off three diverter ducts (2).
	3.	Using screwdriver, loosen screw (3) and take end of control cable (4) off shaft (5). Pull control cable out of diverter clamp (6).
	4.	Using 7/16-inch wrench, hold four screws (7). Tell soldier B when ready.
Soldier B	5.	Working from under hood and using 7/16-inch wrench, unscrew and take off four nuts (8) and washers (9).
Soldier A	6.	Take out heater diverter assembly (10).

END OF TASK



c. Replacement.

FRAME 1

Soldier A 1. Working from inside of cab, put heater diverter assembly (1) in place and put through four screws (2). Using 7/16-inch wrench, hold four screws and tell soldier B when ready.

Soldier B 2. Working from under hood and using 7/16-inch wrench, screw in and tighten four washers (3) and nuts (4).

Soldier A 3. Put on three diverter ducts (5).

4. Using screwdriver, tighten three duct clamps (6).

5. Put cable (7) through diverter clamp (8). Put looped end of control cable on shaft (9).

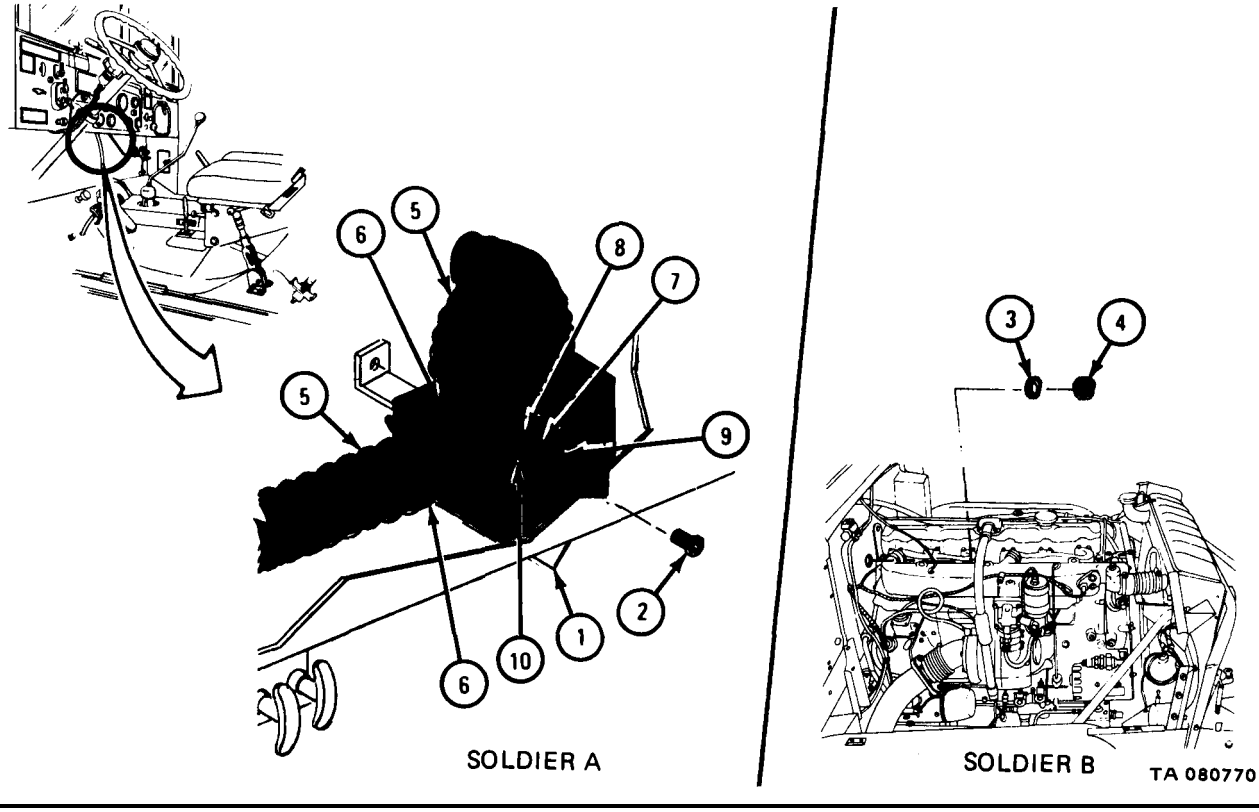
6. Using screwdriver, tighten screw (10).

NOTE

Follow-on Maintenance Action Required:

1. Adjust control cable. Refer to para 23-8.
2. Close hood and right side panel. Refer to TM 9-2320-209-10.

END OF TASK



23-6. FUEL BURNING PERSONNEL HEATER AIR INLET ADAPTER REPAIR.

TOOLS: Flat-tip screwdriver
11/32-inch wrench (2)

SUPPLIES: None

PERSONNEL: Two

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Preliminary Procedure. Open hood and left side panel. Refer to TM 9-2320-209-10.

b. Removal.

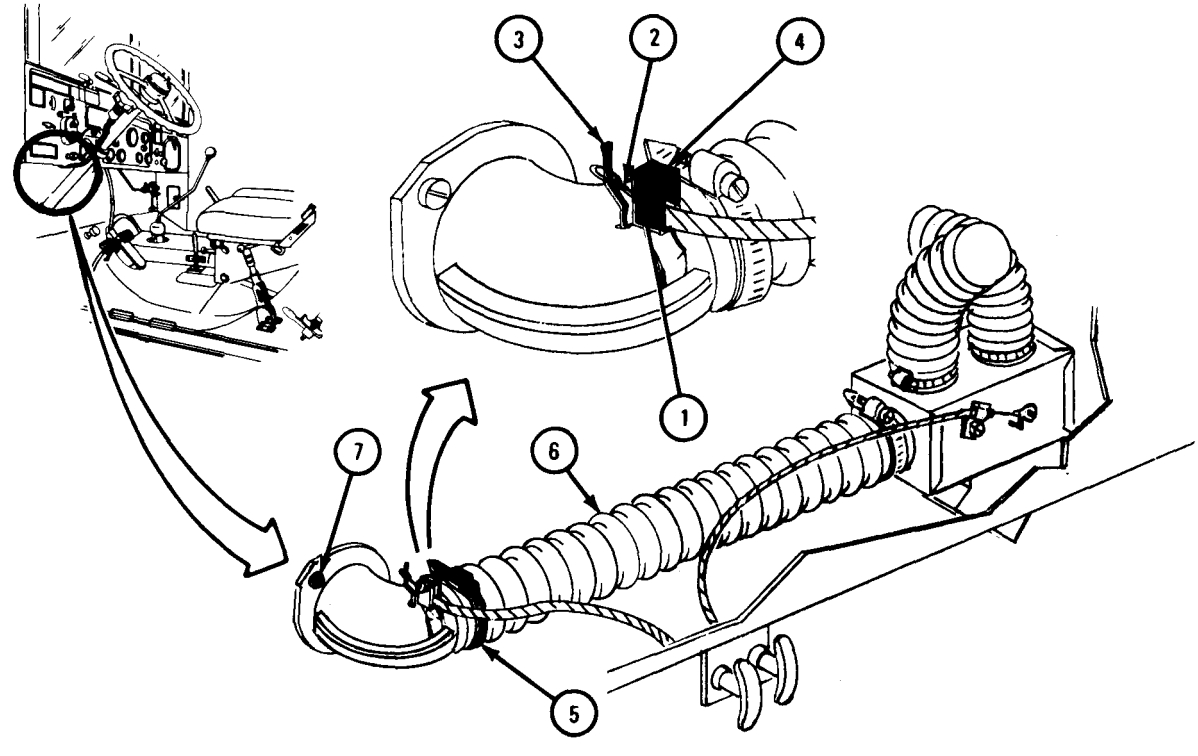
FRAME 1

1. Using screwdriver, loosen screw (1) and take looped end of adapter cable assembly (2) off shaft (3). Pull adapter cable assembly out of cable clamp (4).
2. Using screwdriver, loosen duct clamp (5) and turn and take off diverter duct (6).

Soldier A

3. Using screwdriver, hold two screws (7) and tell soldier B when ready.

GO TO FRAME 2



TA 080773

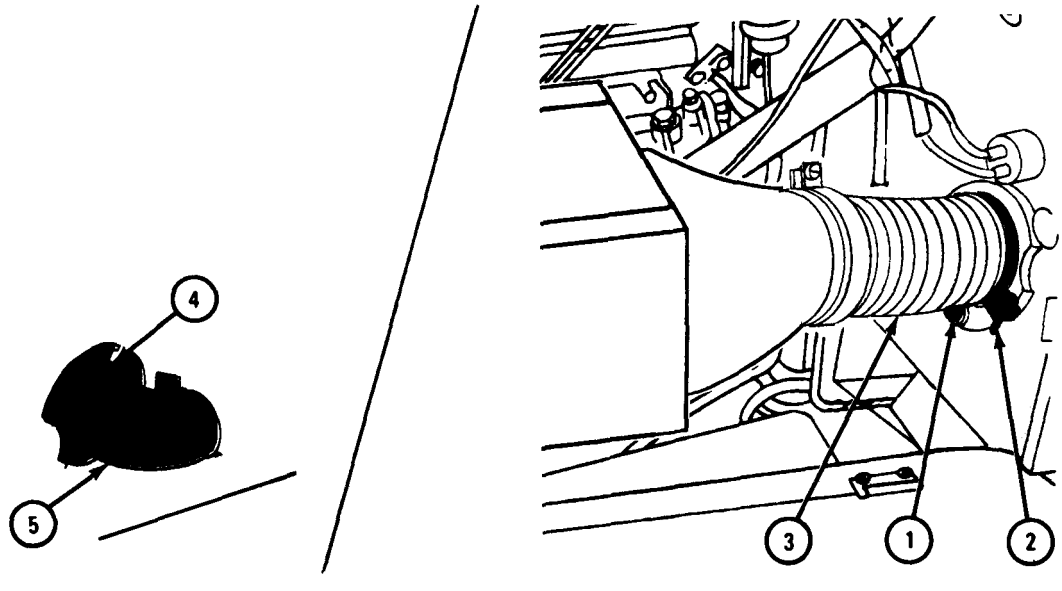
FRAME 2

Soldier B 1. Using 11/32-inch wrench, unscrew and take off two nuts and washers (1).

2. Using screwdriver, loosen duct clamp (2). Turn and take off heater duct (3).

Soldier A 3. Take out two screws (4) and take off air inlet adapter (5).

END OF TASK



SOLDIER A

SOLDIER B

TA 080774

c. Replacement.

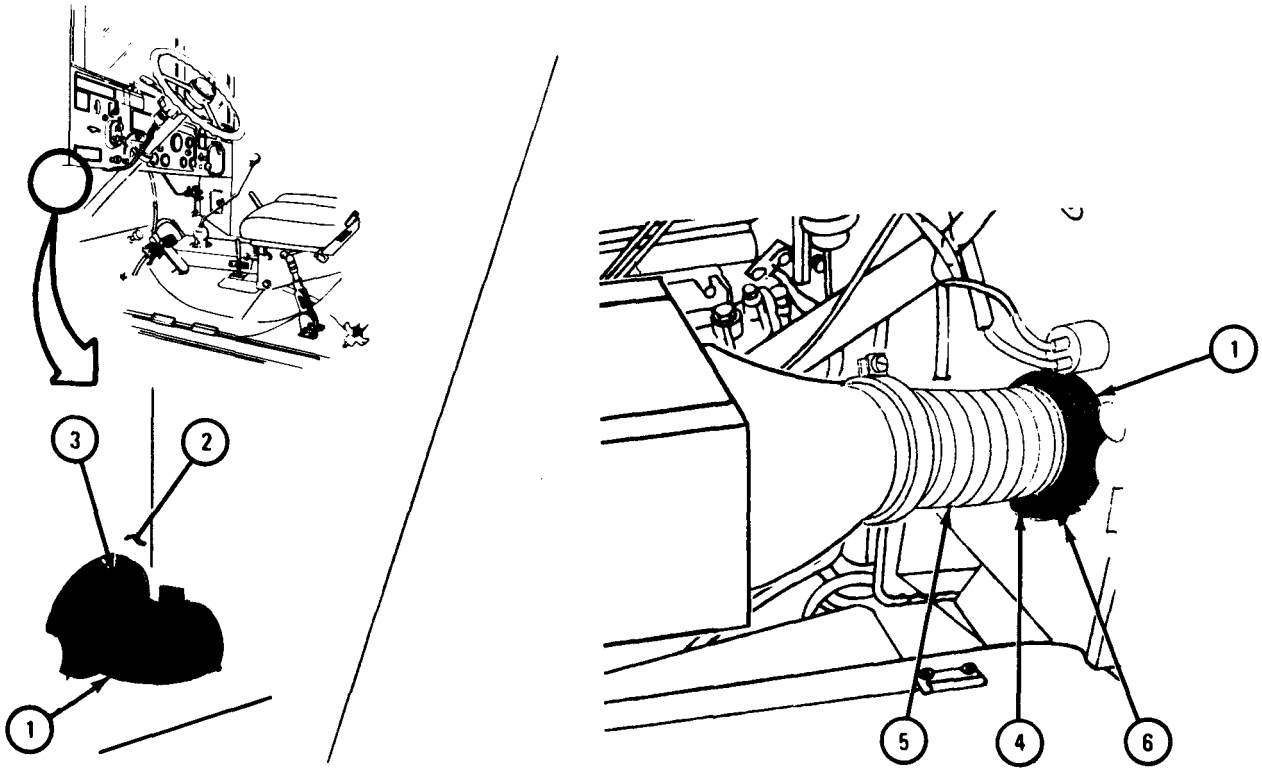
FRAME 1

Soldier A 1. Put air inlet adapter (1) in place on firewall (2) as shown. Aline two screw holes and put in two screws (3). Using screwdriver, hold two screws and tell soldier B when ready.

Soldier B 2. Using 11/32-inch wrench, screw on and tighten two nuts and washers (4).

3. Put heater duct (5) on air inlet adapter (1). Using screwdriver, tighten duct clamp (6).

GO TO FRAME 2



SOLDIER A

SOLDIER B

TA 080775

FRAME 2

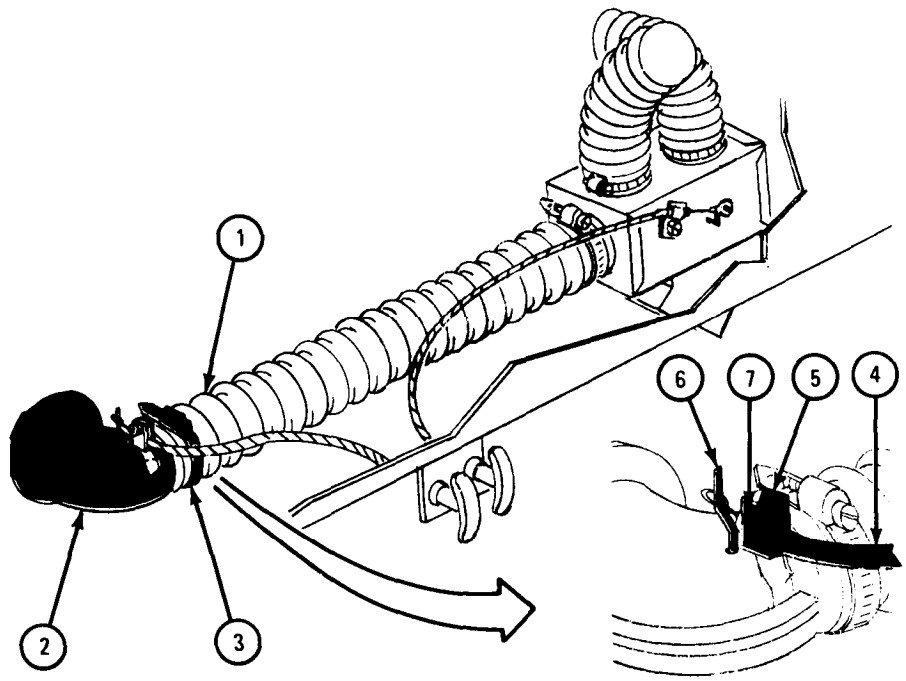
1. Put diverter duct (1) on air inlet adapter (2). Using screwdriver, tighten duct clamp (3).
2. Put adapter cable assembly (4) through cable clamp (5) and put looped end of cable on shaft (6).
3. Using screwdriver, tighten screw (7).

NOTE

Follow-on Maintenance Action Required:

1. Adjust control cable. Refer to para 23-8.
2. Close hood and left side panel. Refer to TM 9-2320-209-10.

END OF TASK



TA 080776

23-7. FUEL BURNING PERSONNEL HEATER EXHAUST TUBE AND CLAMPS REPAIR.

TOOLS: 1/2-inch wrench (2)
6-inch pliers.

SUPPLIES: None

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Preliminary Procedure. Open hood and left side panel. Refer to TM 9-2320-209-10.

b. Removal.

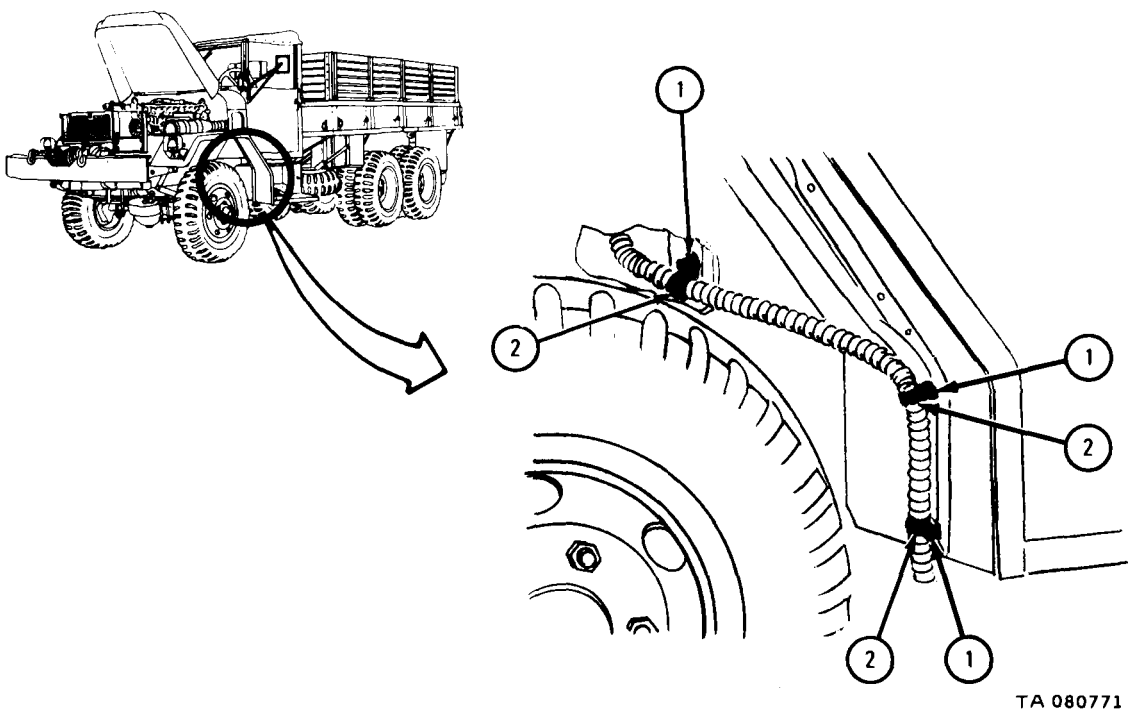
WARNING

Hot exhaust tube can cause serious burns. Let it cool before starting task.

FRAME 1

1. Using 1/2-inch wrenches, unscrew and take off three screws and nuts (1) from three clamps (2). Spread clamps open and take them off.

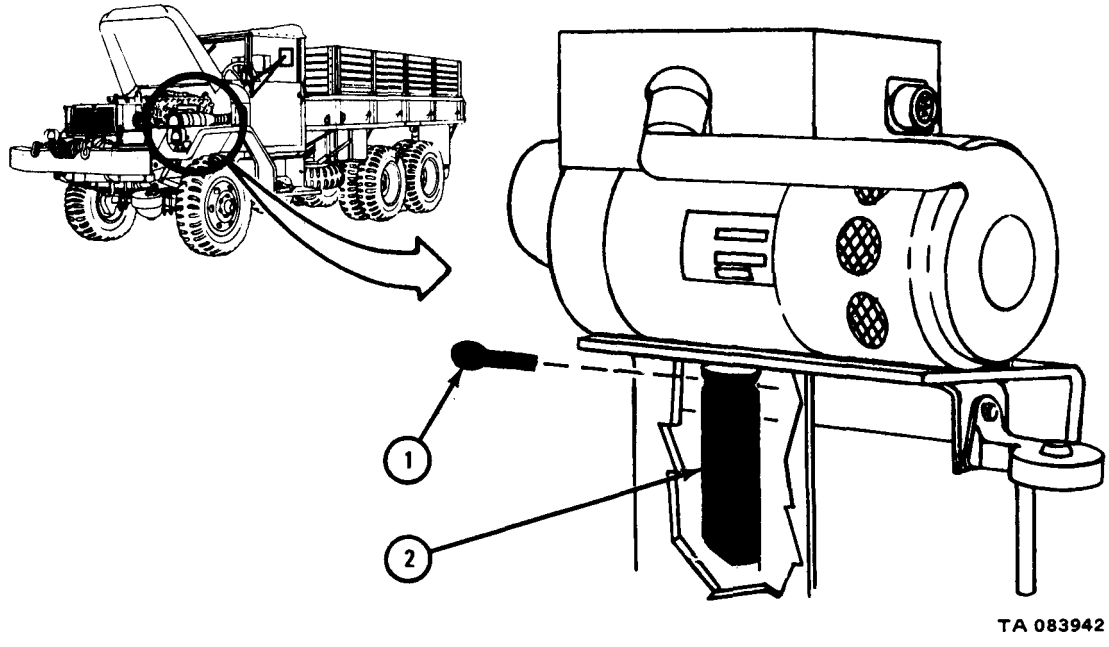
GO TO FRAME 2



FRAME 2

1. Using pliers, take out cotter pin (1) and take off exhaust tube (2).

END OF TASK

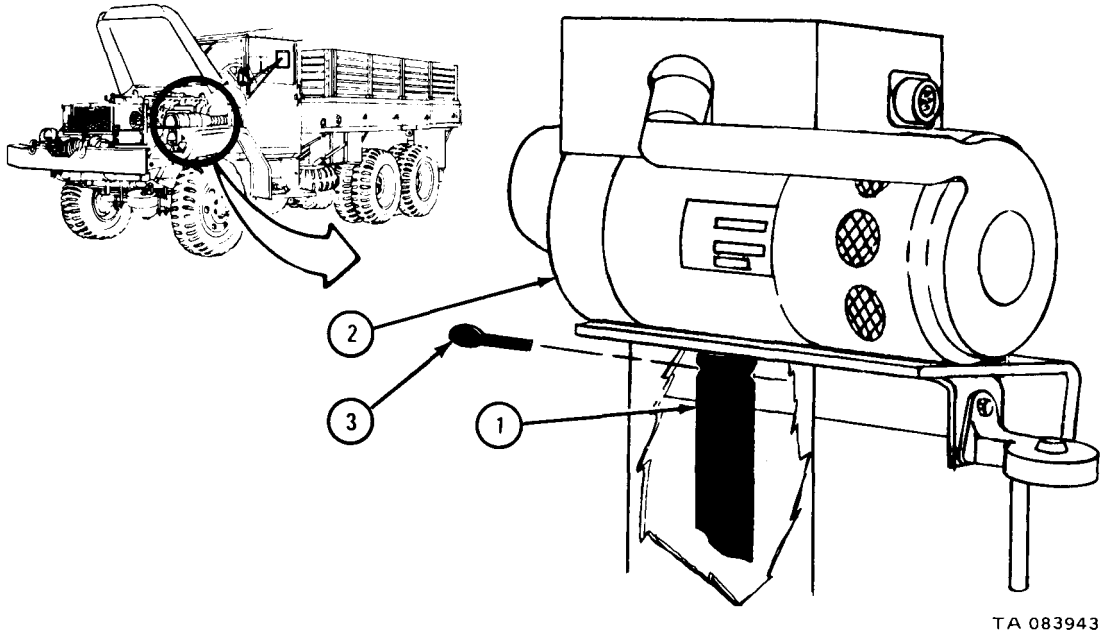


c. Replacement.

FRAME 1

1. Put exhaust tube (1) on fuel burning personnel heater (2) and aline holes.
2. Put cotter pin (3) through exhaust tube (1).
3. Using pliers, bend open ends of cotter pin (3).

GO TO FRAME 2



FRAME 2

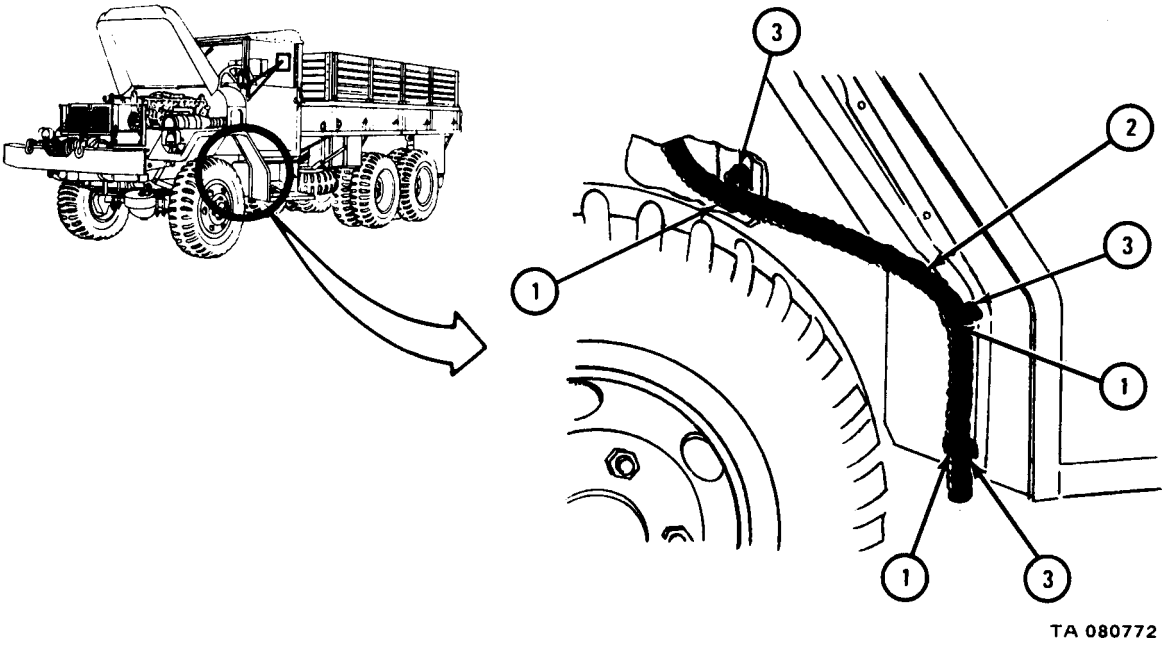
1. Put three clamps (1) on exhaust tube (2) as shown and aline screw holes.
2. Using 1/2-inch wrenches, screw in and tighten three screws and nuts (3).

NOTE

Follow-on Maintenance Action Required:

Close hood and left side panel. Refer to TM 9-2320-209-10.

END OF TASK



23-8. FUEL BURNING PERSONNEL HEATER CONTROL CABLES REPAIR AND ADJUSTMENT.

TOOLS: 9/16-inch wrench
Flat-tip screwdriver

SUPPLIES: None

PERSONNEL: One

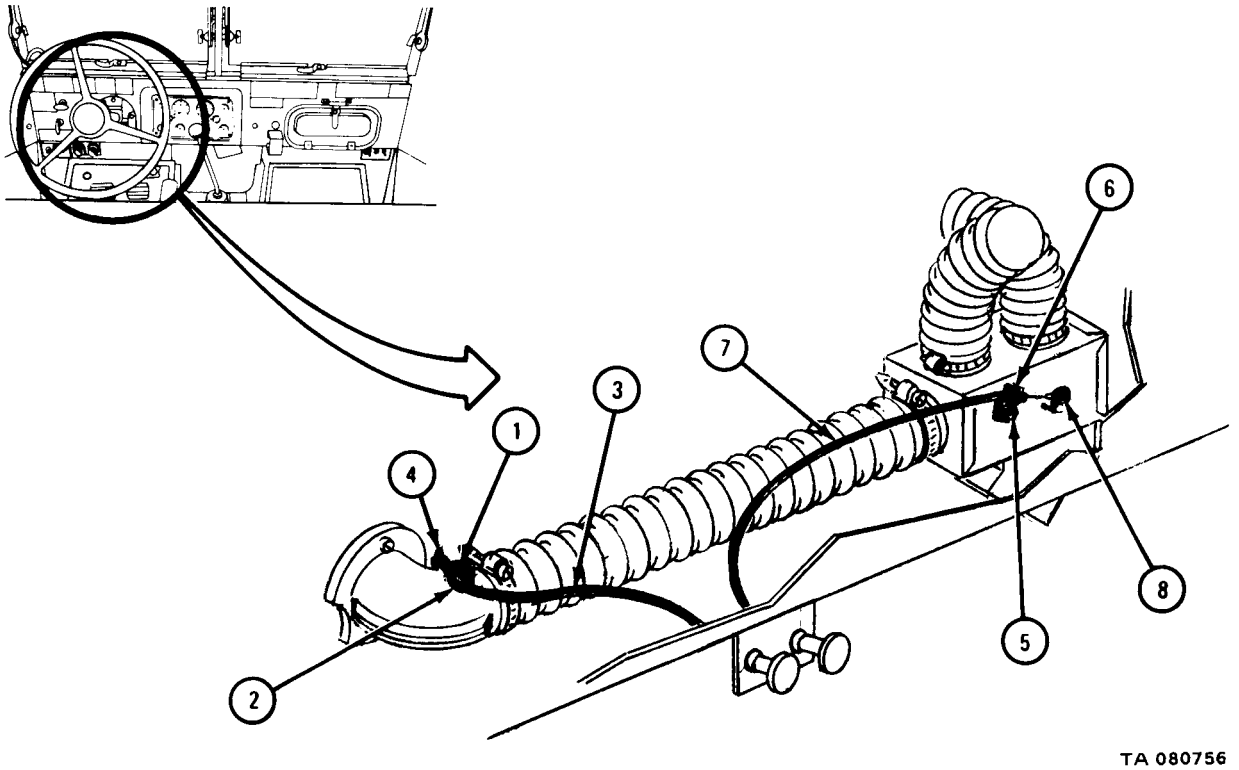
EQUIPMENT CONDITION: Truck parked, engine off, andbrake set.

a. Removal.

FRAME 1

1. Working from behind instrument panel and using screwdriver, loosen screw (1) on adapter clamp (2). Take looped end of diverter adapter cable assembly (3) off shaft (4) and take cable out of adapter clamp.
2. Using screwdriver, loosen screw (5) on diverter clamp (6). Take looped end of diverter cable (7) off shaft (8) and take cable out of diverter clamp.

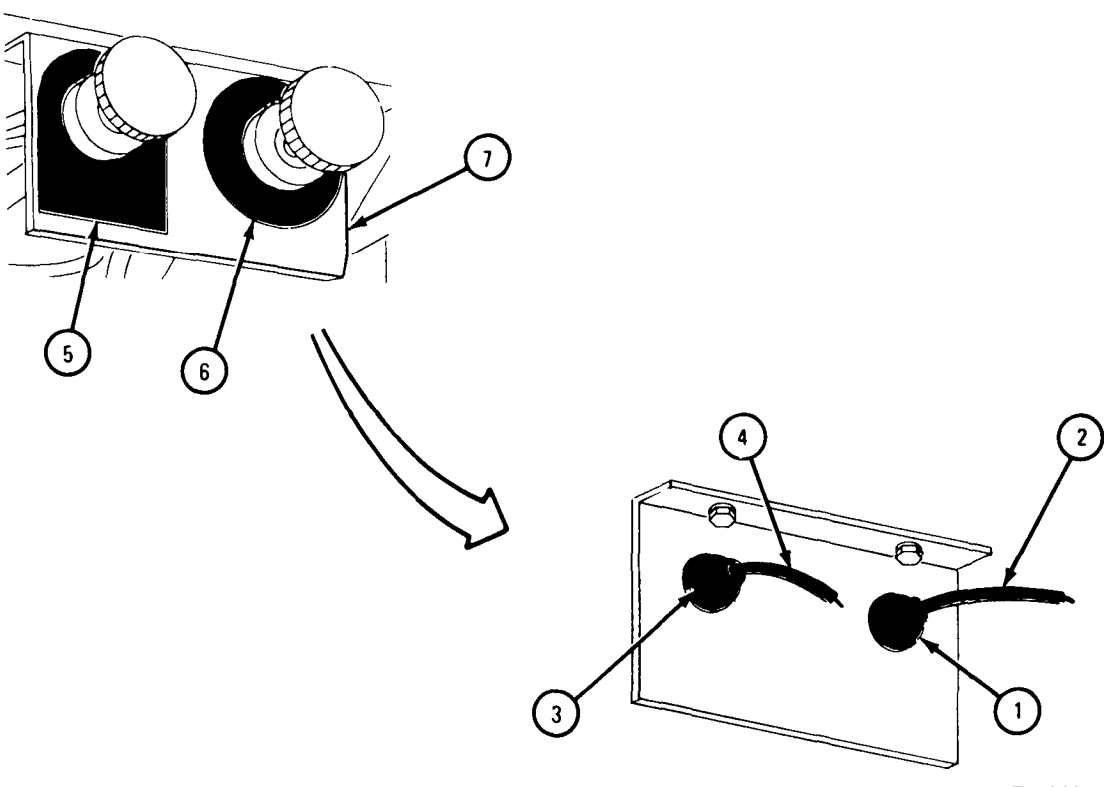
GO TO FRAME 2



FRAME 2

1. Using 9/16-inch wrench, unscrew nut and washer (1) and slide them off of diverter adapter cable assembly (2).
2. Using 9/16-inch wrench, unscrew nut and washer (3) and slide them off diverter cable assembly (4).
3. Pull out diverter adapter cable assembly (2) and diverter cable assembly (4), AIR plate (5), and DEFROSTER plate (6) from front of bracket (7).

END OF TASK



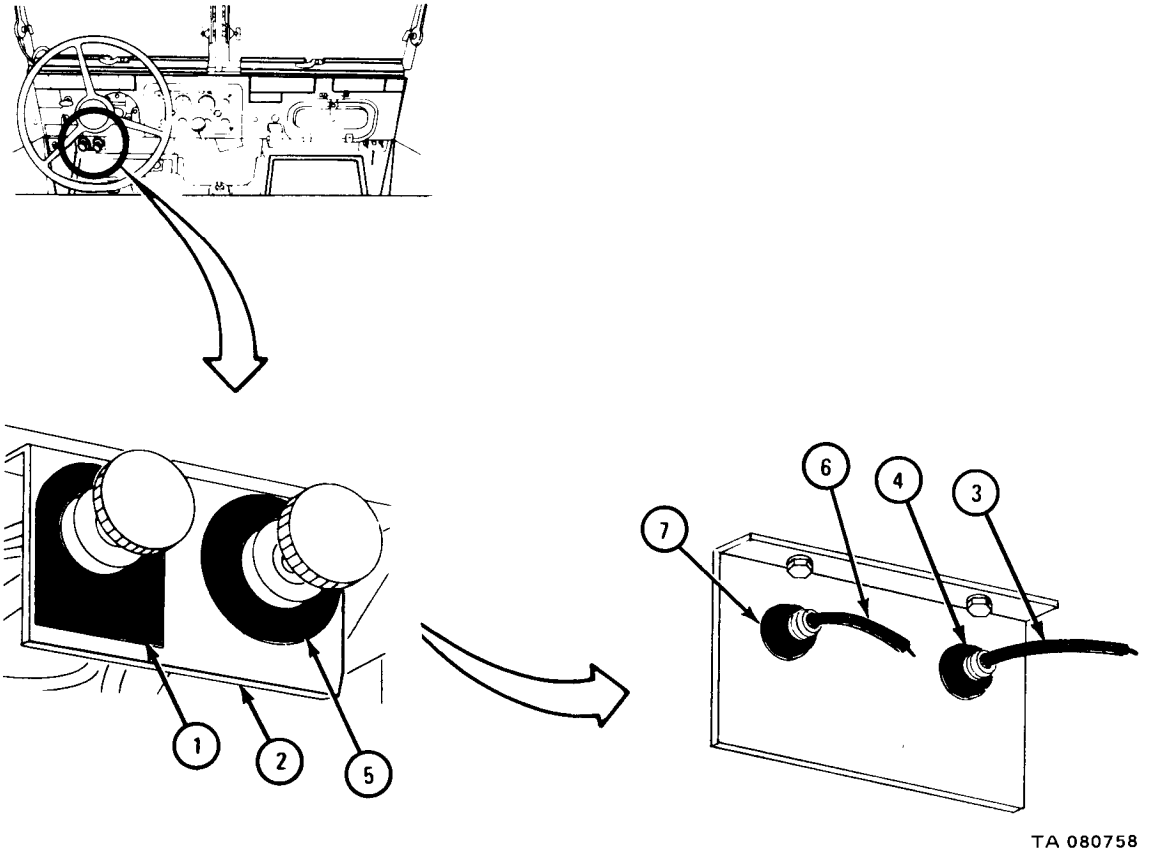
b. Repair. Repair is limited to throwing away damaged parts and getting new parts in their place.

c. Replacement.

FRAME 1

1. Put identification plate marked AIR (1) over left hole in bracket (2) and put diverter adapter cable assembly (3) through hole as shown.
2. Slide nut and washer (4) over diverter adapter cable (3) and using 9/16-inch wrench, screw on and tighten nut and washer.
3. Put identification plate marked DEFROSTER (5) over right hole in bracket (2) and put diverter cable assembly (6) through hole as shown.
4. Slide nut and washer (7) up over diverter cable (6) and using 9/16-inch wrench, screw on and tighten nut and washer.

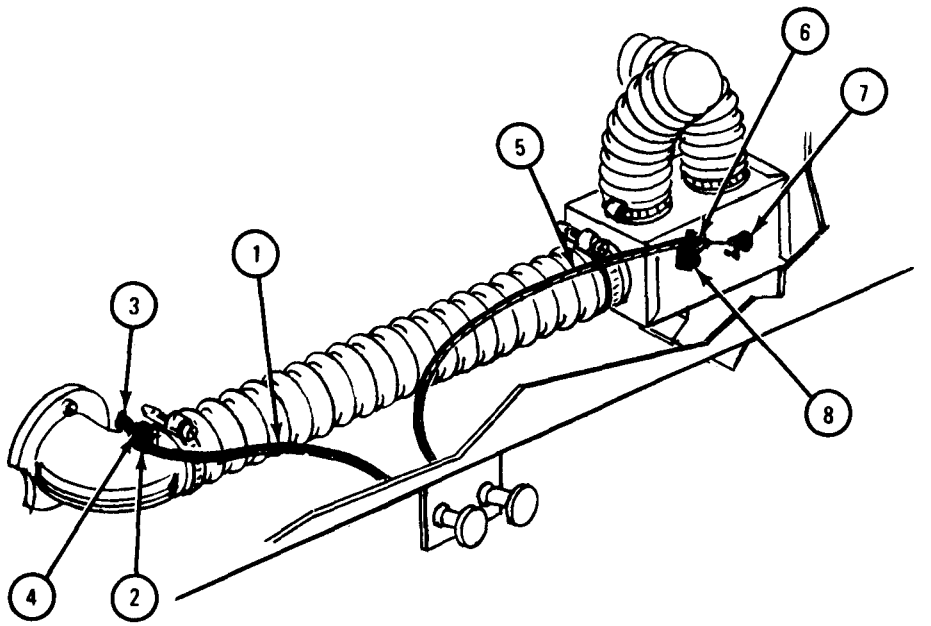
GO TO FRAME 2



FRAME 2

1. Working from behind instrument panel, put diverter adapter cable assembly (1) through adapter clamp (2) and put looped end of cable over shaft (3).
2. Using screwdriver, tighten screw (4).
3. Put diverter cable assembly (5) through diverter clamp (6) and put looped end of cable over shaft (7).
4. Using screwdriver, tighten screw (8).

END OF TASK



TA 080759

d. Adjustment.

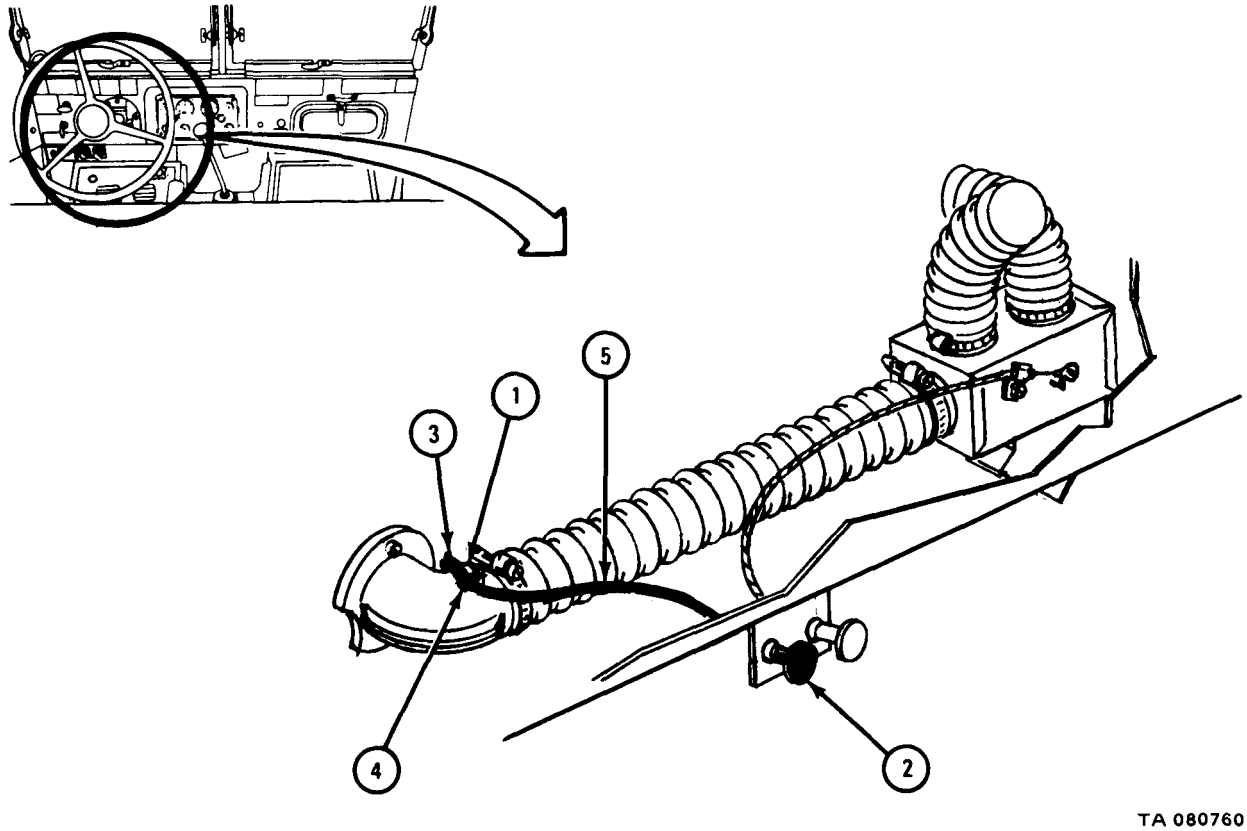
FRAME 1

NOTE

This task is shown for one cable. It can be used for both cables.

1. Using screwdriver, loosen screw (1).
2. Pull knob (2) all the way out.
3. Pull shaft (3) all the way in towards cable clamp (4).
4. Using screwdriver, tighten screw (1). Do not let cable assembly (5) pull out of cable clamp (4).
5. Push knob (2) in and see if shaft (3) moves freely.

END OF TASK



23-9. PERSONNEL AND ENGINE HEATER CONTROL BOX INDICATOR LAMP REMOVAL AND REPLACEMENT.

NOTE

This procedure is the same for the personnel and engine heater control boxes. This procedure is shown for the engine heater control box.

TOOLS: None

SUPPLIES: None

PERSONNEL: One

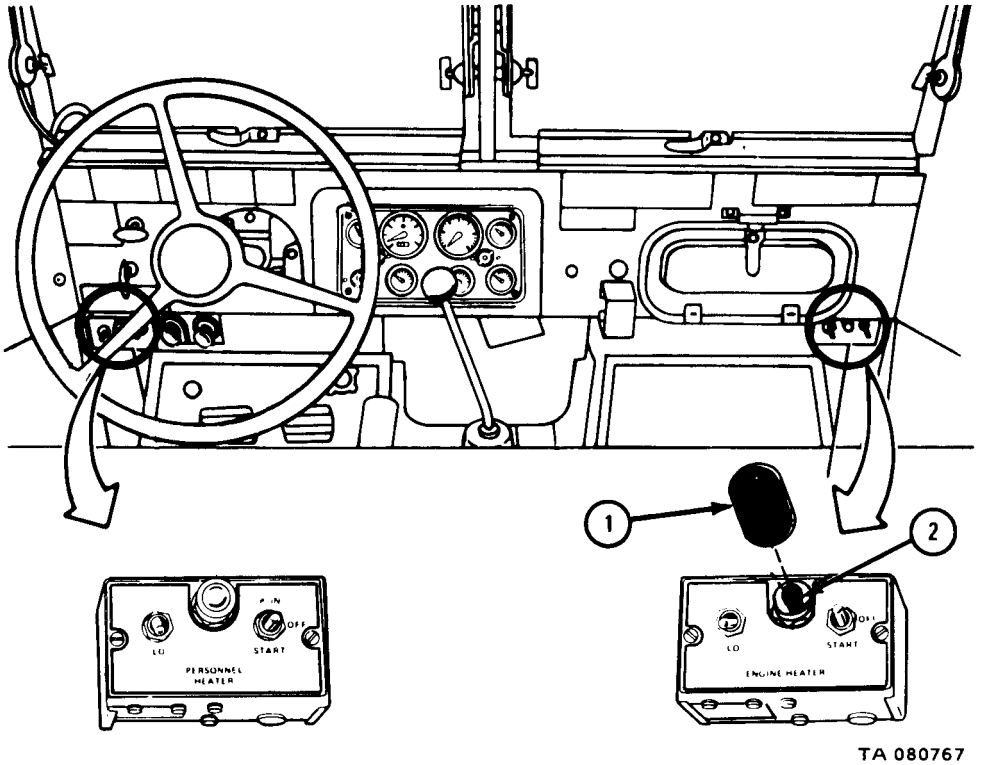
EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Removal.

FRAME 1

1. Unscrew and take off lens cap (1).
2. Take out indicator lamp (2) by pushing it in and turning it to left.

END OF TASK



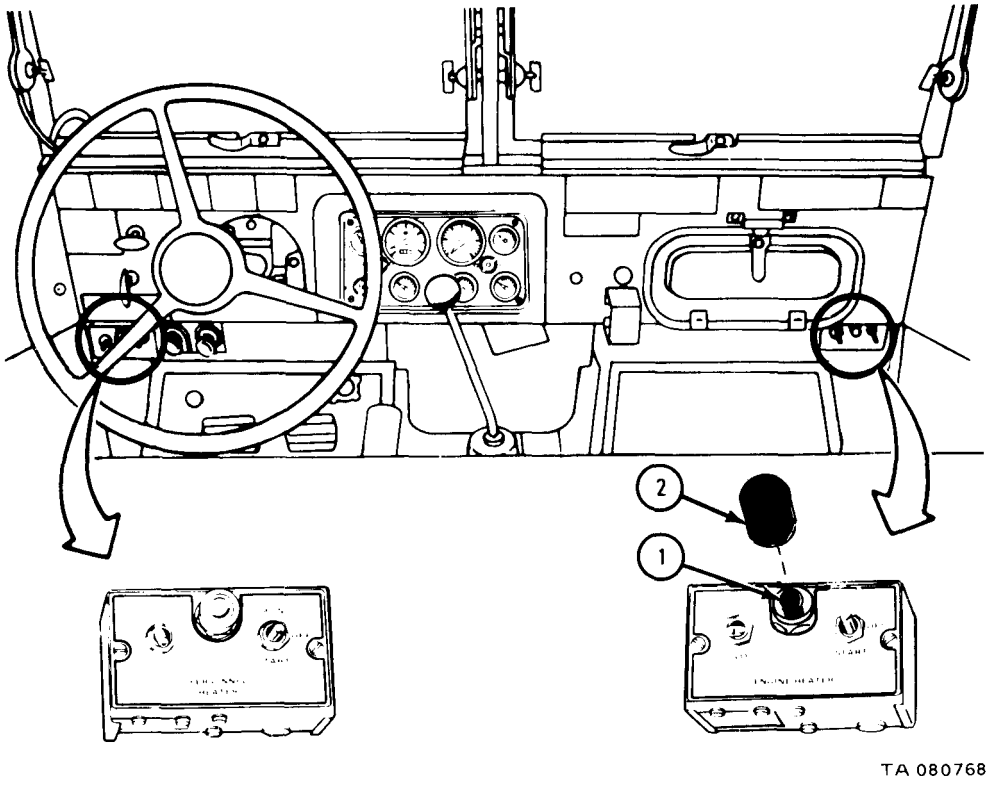
TA 080767

b. Replacement.

FRAME 1

1. Push in indicator lamp (1) and turn it to right.
2. Screw on and tighten lens cap (2).

END OF TASK



TA 080768

23-10. WINTERIZATION KIT FUEL FILTERS REPAIR.

NOTE

There are two fuel filters in the winterization kit. This task can be used for either one. Some trucks may have only one filter.

TOOLS: 1/2-gallon container

SUPPLIES: Solvent, dry cleaning, type II (SD-2), Fed. Spec P-D-680
Fuel filter gasket

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Preliminary Procedures.

(1) Disconnect battery ground cable. Refer to Part 1, para 7-58.

(2) Turn off personnel heater and powerplant heater. Refer to TM 9-2320-209-10.

b. Removal.

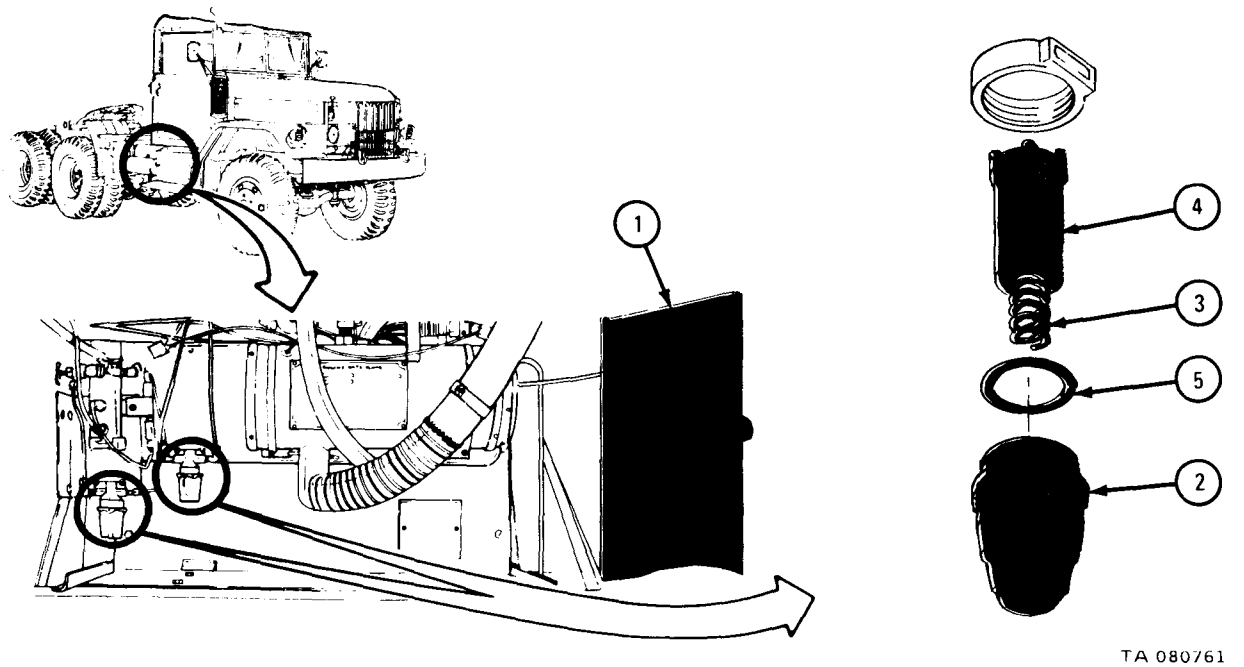
FRAME 1

WARNING

Smoking, sparks or open flame are not allowed within 50 feet of work area during fuel filter service. Fuel may burn, causing explosion, injury to personnel, and damage to equipment.

1. Open battery box door (1).
2. Put container under fuel filter bowl (2). Unscrew filter bowl and take off helical compression spring (3), filter element (4), and gasket (5). Put fuel in filter bowl into container and put fuel in approved disposal area.
3. Throw away gasket (5).

END OF TASK



TA 080761

c. Cleaning and Inspection.

WARNING

Dry cleaning solvent is flammable. Do not use near an open flame. Keep a fire extinguisher nearby when solvent is used. Use only in well-ventilated places. Failure to do this may result in injury to personnel and damage to equipment.

(1) Wash all parts in solvent.

(2) Check that all parts are not cracked or damaged.

d. Repair. If any parts are damaged, throw them away and get new parts in their place.

e. Replacement.

FRAME 1

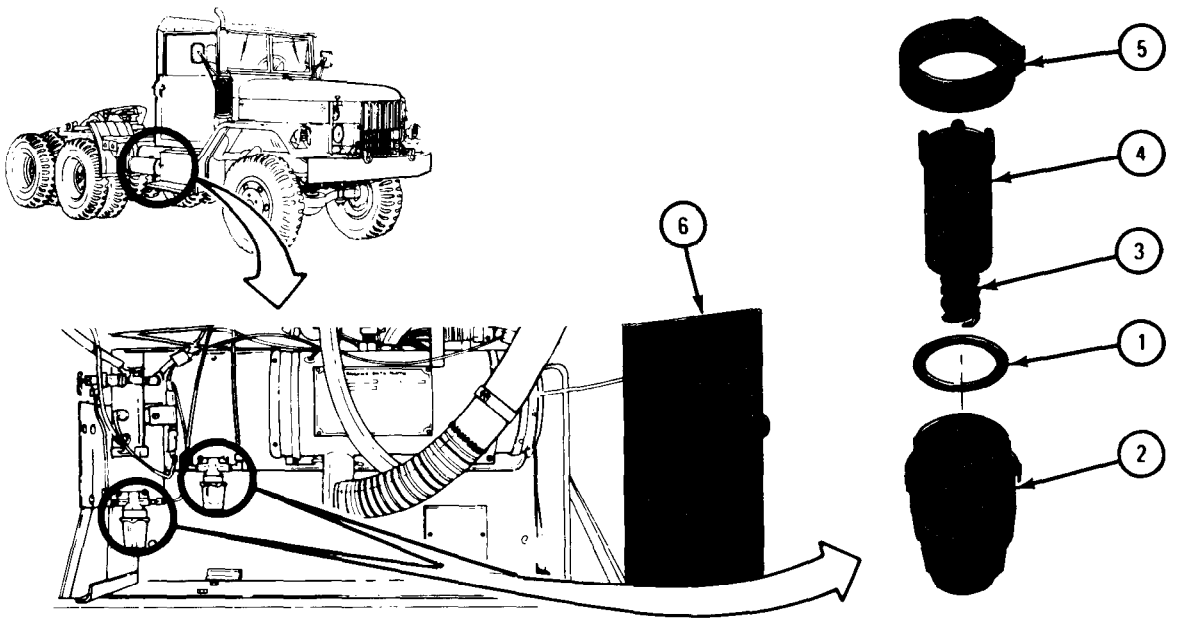
1. Put gasket (1) over threaded relief flange on filter bowl (2).
2. Put helical compression spring (3) and fuel filter element (4) into filter bowl (2).

CAUTION

Do not overtighten filter bowl (2) as gasket (1) may be damaged.

3. Screw in and hand tighten filter bowl (2) into head (5).
4. Reconnect battery ground cable. Refer to Part 1, para 7-58.
5. Start fuel burning personnel heater or powerplant heater. Refer to TM 9-2320-209-10. Check filter bowl (2) for leaks.
6. Turn off fuel burning personnel heater or powerplant heater. Refer to TM 9-2320-209-10.
7. Close battery box door (6).

END OF TASK



TA 080762

23-11. OIL PAN SHROUD REPAIR.

TOOLS: 6-inch pliers
9/16-inch wrench

SUPPLIES: None

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

NOTE

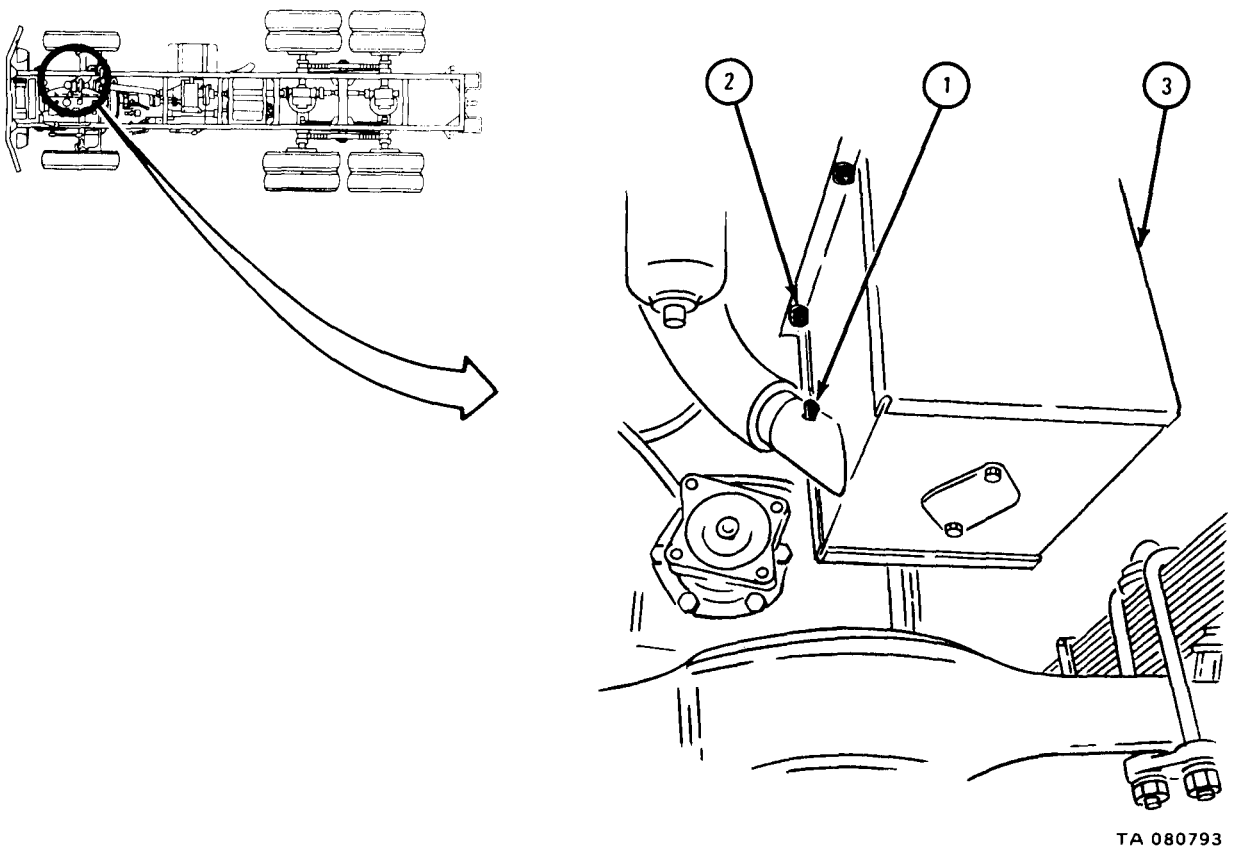
Make sure powerplant heater is off and cool.

a. Removal.

FRAME 1

1. Using pliers, take out and throw away cotter pin (1).
2. Using 9/16-inch wrench, unscrew and take off four capscrews with washers (2), two on each side, while holding oil pan shroud (3) in place.
3. Take down oil pan shroud (3).

END OF TASK

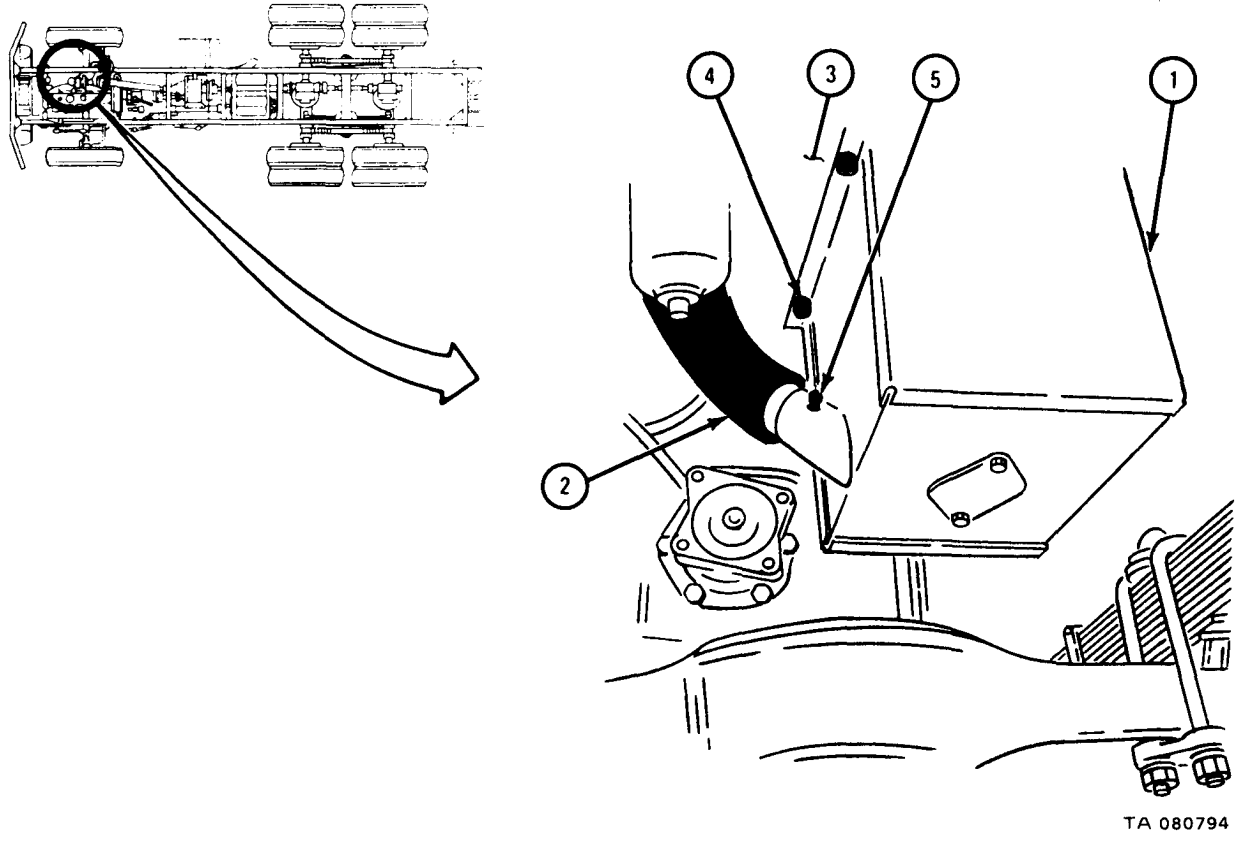


b. Replacement.

FRAME 1

1. Aline exhaust inlet on oil pan shroud (1) with exhaust tube (2). Push oil pan shroud up and hold it in place.
2. Aline four screw holes in oil pan (3) with screw holes in oil pan shroud (1). Using 9/16-inch wrench, screw in and tighten four capscrews with washers (4). two on each side of oil pan shroud.
3. Using pliers, put in cotter pin (5) and bend open ends of cotter pin.

END OF TASK



23-12. POWERPLANT HEATER EXHAUST TUBE REMOVAL AND REPLACEMENT.

TOOLS: 7/16-inch wrench (2)
6-inch pliers
1/8-inch punch

SUPPLIES: None

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off and cool, handbrake set.

a. Preliminary Procedures.

(1) Open hood and right side panel. Refer to TM 9-2320-209-10.

(2) Open powerplant heater box door. Refer to para 23-22.

WARNING

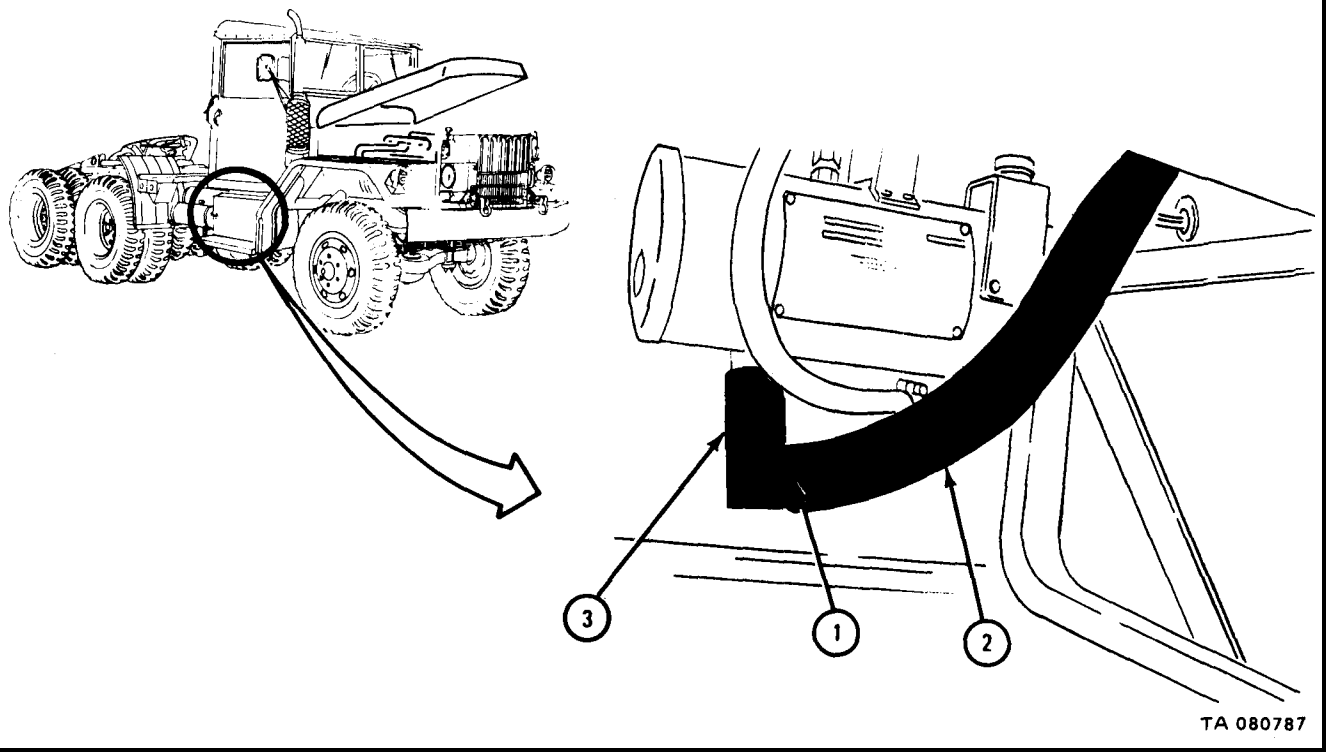
Do not work on hot exhaust tube. Personnel can be badly burned.

b. Removal.

FRAME 1

1. Using pliers, take out and throw away cotter pin (1). Take exhaust tube (2) off elbow (3).

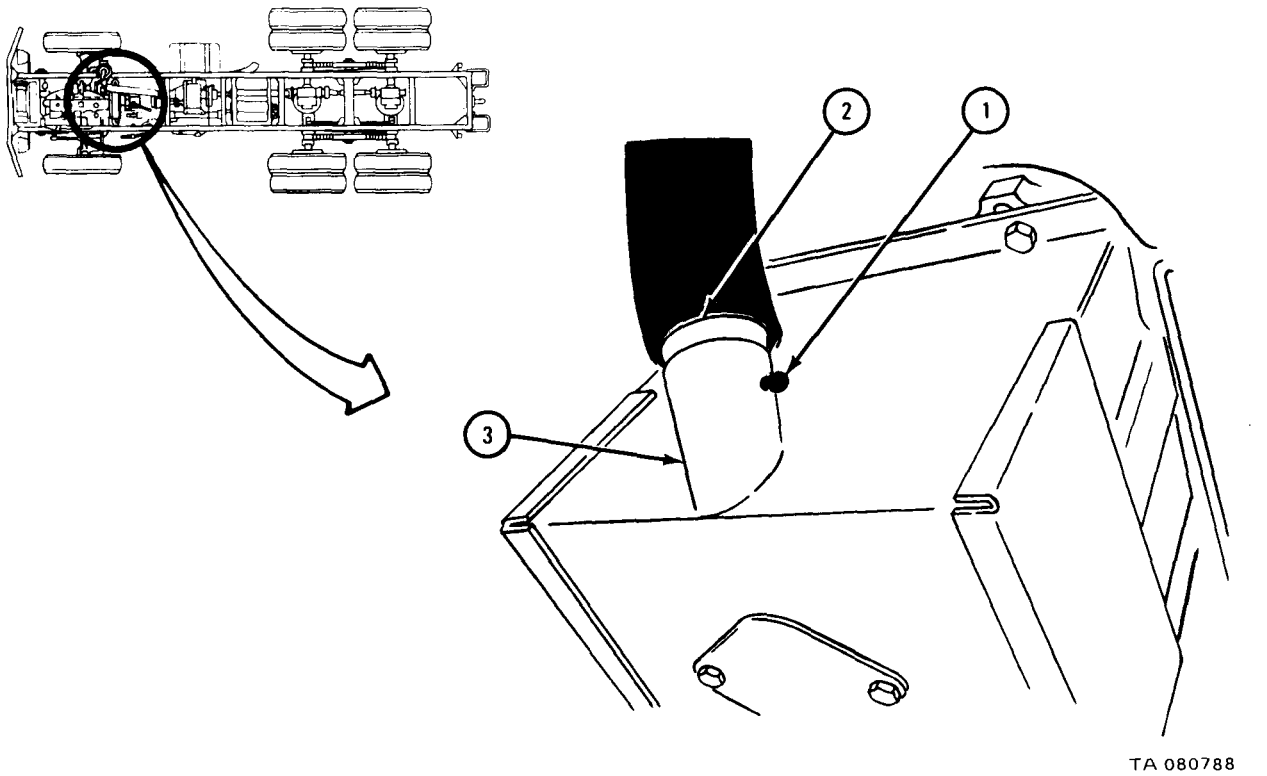
GO TO FRAME



FRAME 2

1. Using pliers, take out and throw away cotter pin (1). Take exhaust tube (2) out of oil pan shroud exhaust inlet (3).

GO TO FRAME 3



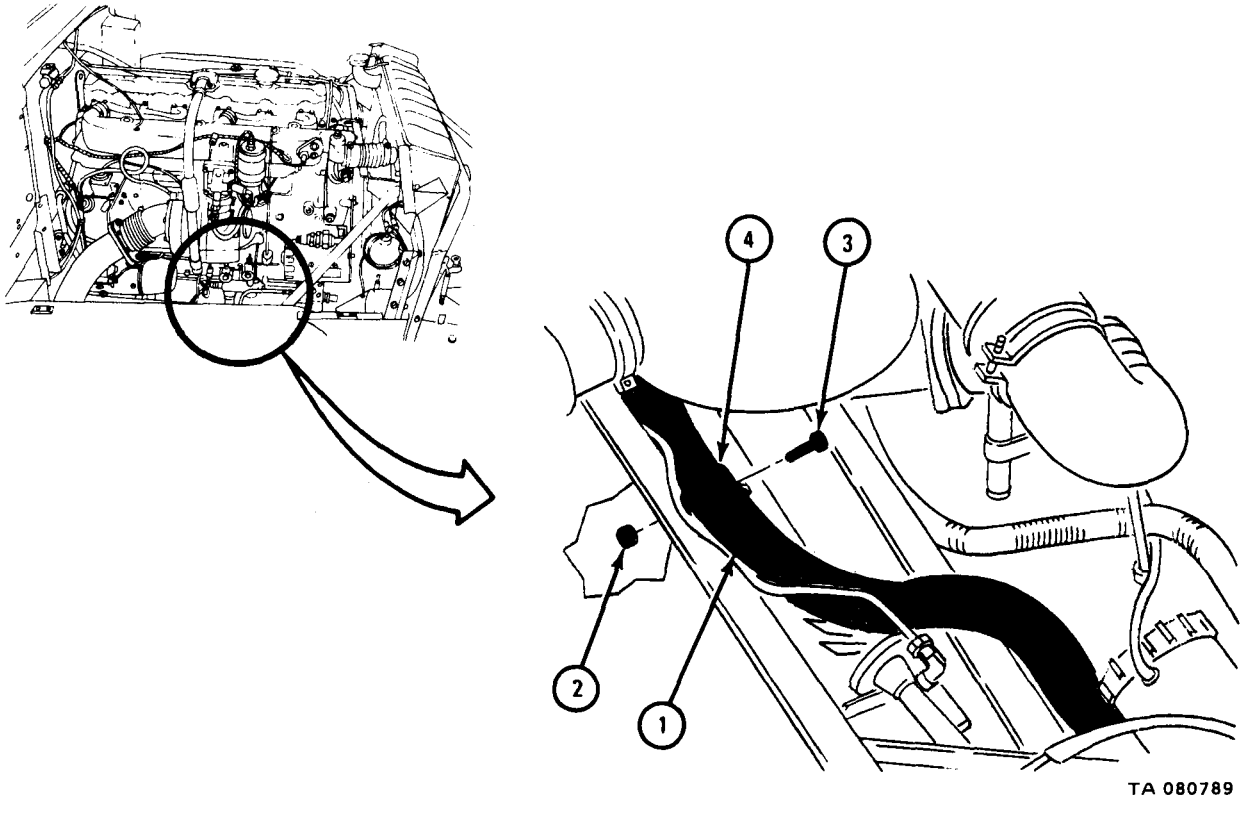
FRAME 3

NOTE

Note position of exhaust tube (1) so it can be put back in the same position.

1. Working from under right front fender and using 7/16-inch wrench, hold locknut (2).
2. Using 7/16-inch wrench, unscrew and take out screw (3).
3. Take exhaust tube (1) out of truck.
4. Spread open and take off clamp (4).

END OF TASK

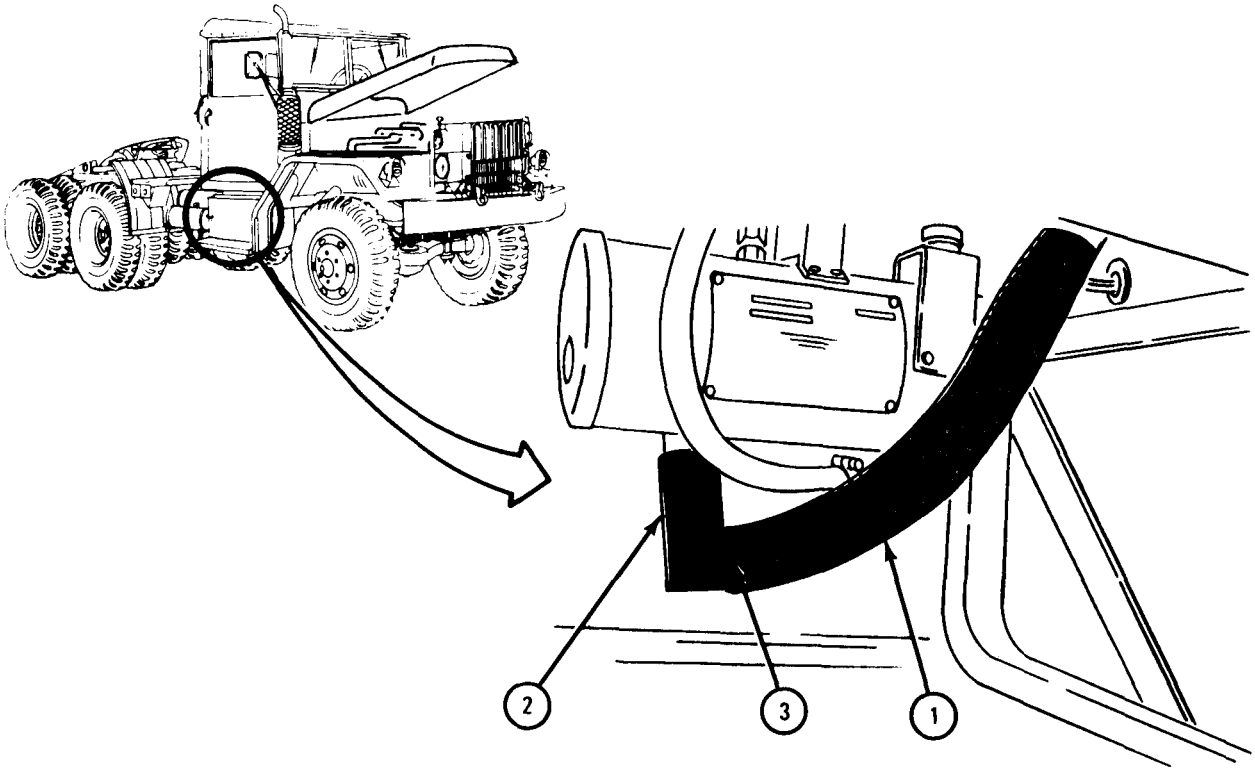


c. Replacement.

FRAME 1

1. Put exhaust tube (1) in place as noted.
2. Put exhaust tube (1) on elbow (2) and aline holes.
3. Using pliers, put in cotter pin (3) and bend open ends of cotter pin.

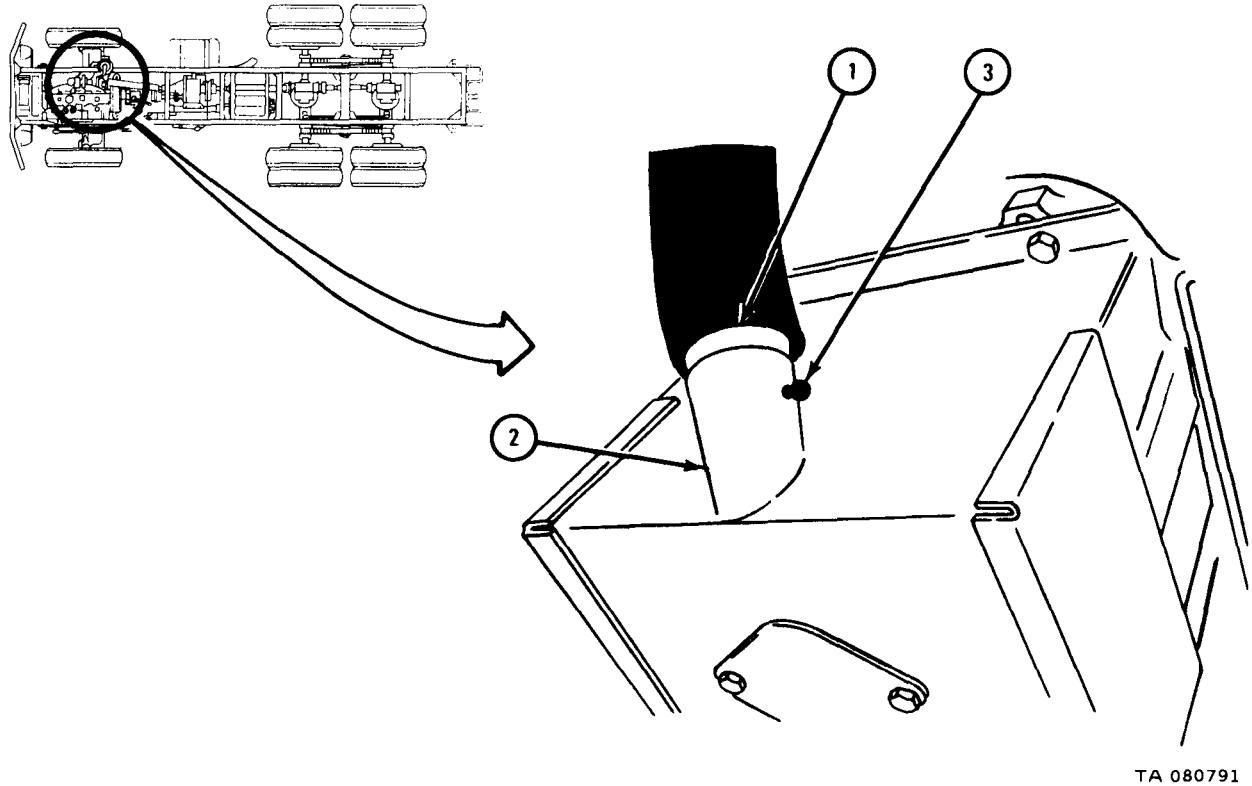
GO TO FRAME 2



FRAME 2

1. Put exhaust tube (1) in oil pan shroud exhaust inlet (2). Using punch, aline holes.
2. Using pliers, put in cotter pin (3) and bend open ends of cotter pin.

GO TO FRAME 3



FRAME 3

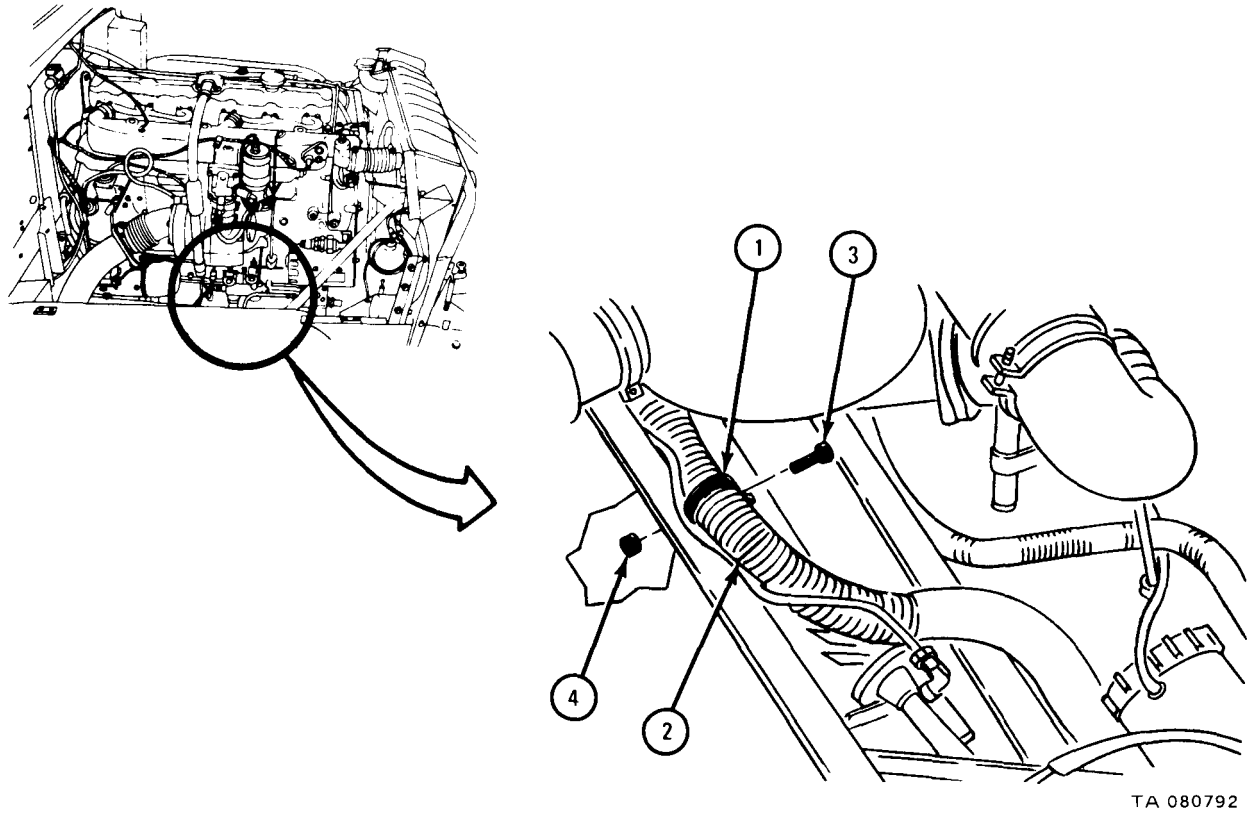
1. Put clamp (1) over exhaust tube (2) and aline screw holes. Put in screw (3) and using 7/16-inch wrench, hold capscrew.
2. Working from under right fender and using 7/16-inch wrench, screw on and tighten locknut (4).

NOTE

Follow-on Maintenance Action Required:

1. Close hood and right side panel. Refer to TM 9-2320-209-10.
2. Close power plant heater box door. Refer to para 23-22.

END OF TASK



23-13. POWERPLANT COOLANT HEATER HOSES AND CLAMPS REMOVAL AND REPLACEMENT.

TOOLS: Flat-tip screwdriver
Coolant drain pan

SUPPLIES: Engine coolant (as needed)

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Preliminary Procedures.

(1) Remove air cleaner filter element. Refer to TM 9-2320-209-10.

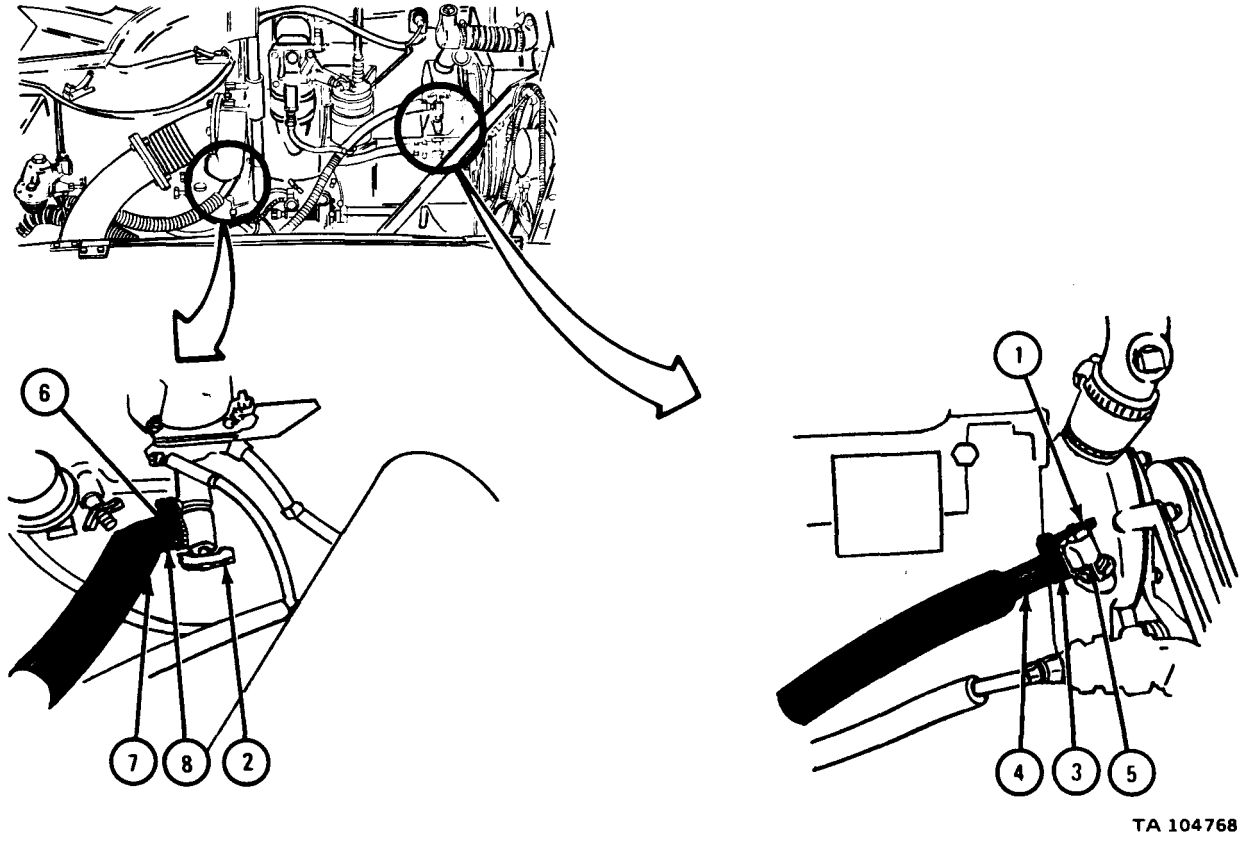
(2) Open battery box door. Refer to TM 9-2320-209-10.

b. Removal.

FRAME 1

1. Close petcock (1) at right front of engine.
2. Close petcock (2) at right rear of engine.
3. Using screwdriver, unscrew and loosen clamp (3). Take off inlet hose (4) from connector (5). Take off clamp.
4. Using screwdriver, unscrew and loosen clamp (6). Take off outlet hose (7) from connector (8). Take off clamp.

GO TO FRAME 2



TA 104768

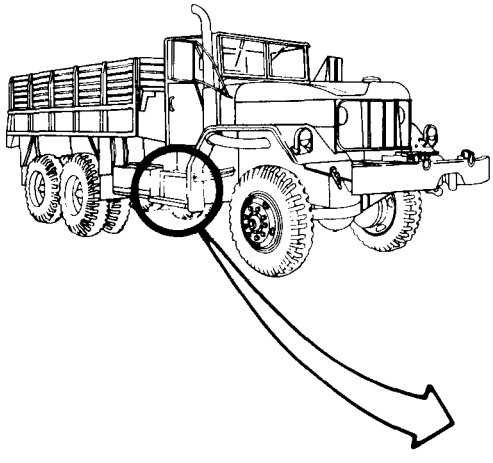
FRAME 2

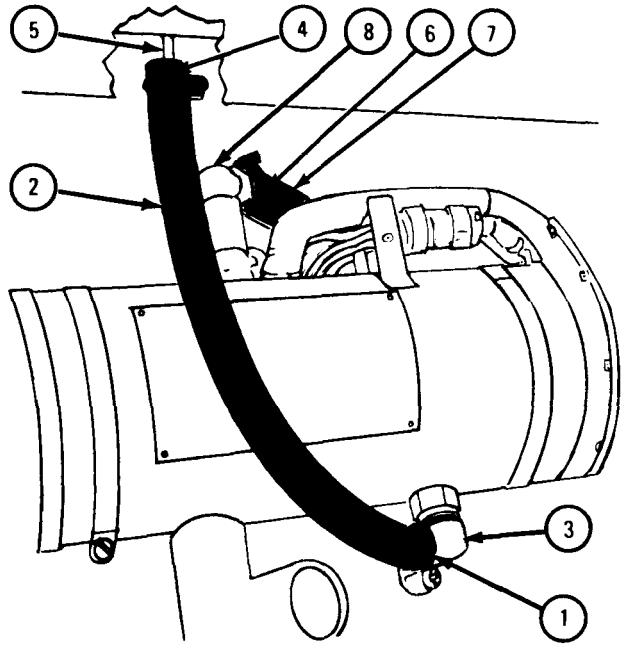
NOTE

It is not needed to take off heater exhaust pipe.

1. Using screwdriver, unscrew and loosen clamp (1). Take off return hose (2) from elbow connector (3). Drain coolant from return hose. Take off clamp.
2. Using screwdriver, unscrew and loosen clamp (4). Take off return hose (2) from battery box heating pad connector (5). Take off clamp.
3. Using screwdriver, unscrew and loosen clamp (6). Take off inlet hose (7) from elbow connector (8). Take off clamp.

GO TO FRAME



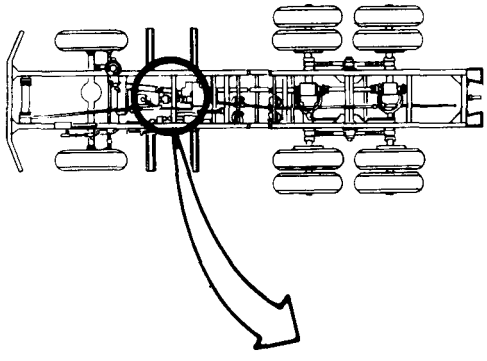


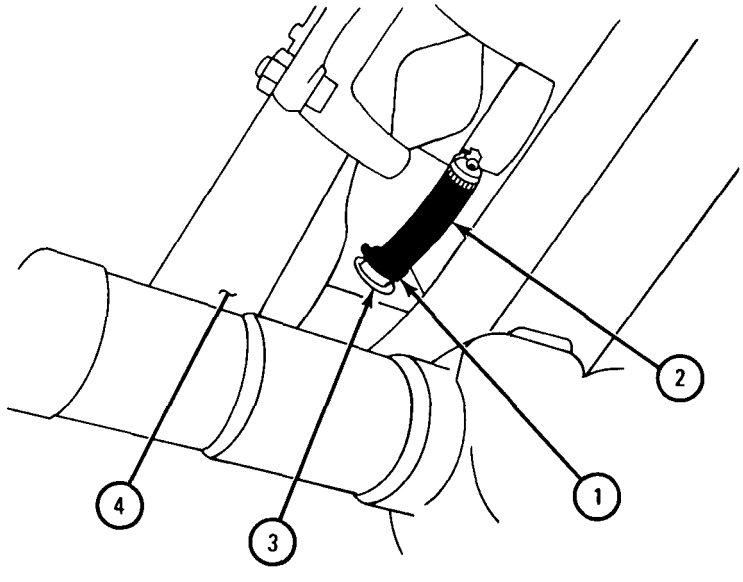
TA 104769

FRAME 3

1. Using screwdriver, unscrew and loosen clamp (1). Take off outlet hose (2) from battery box heating pad connector (3). Take off clamp.
2. Pull outlet hose (2) from over frame rail (4) to under side of truck. Drain coolant from hose.

GO TO FRAME 4



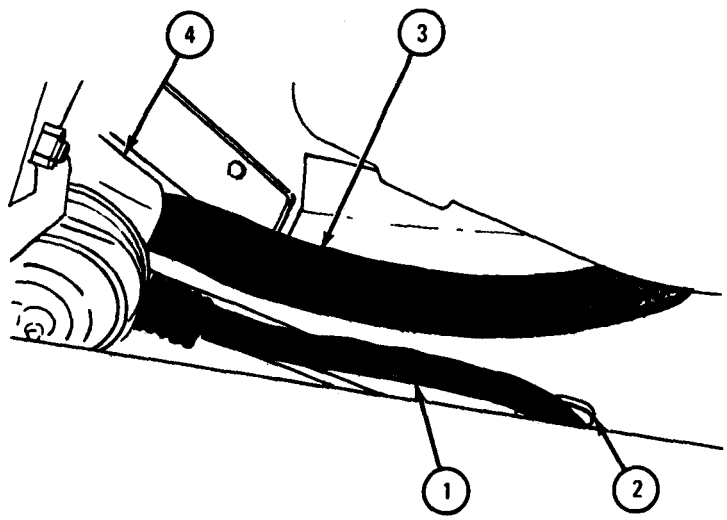


TA 104770

FRAME 4

1. Pull inlet hose and shield (1) through hole (2) in body to under side of truck. Drain coolant from inlet hose.
2. Pull inlet hose and shield (1) and outlet hose and shield (3) from over engine mount (4).
3. Take hoses and shields (1 and 2) off truck.

END OF TASK



TA 104771

c. Replacement.

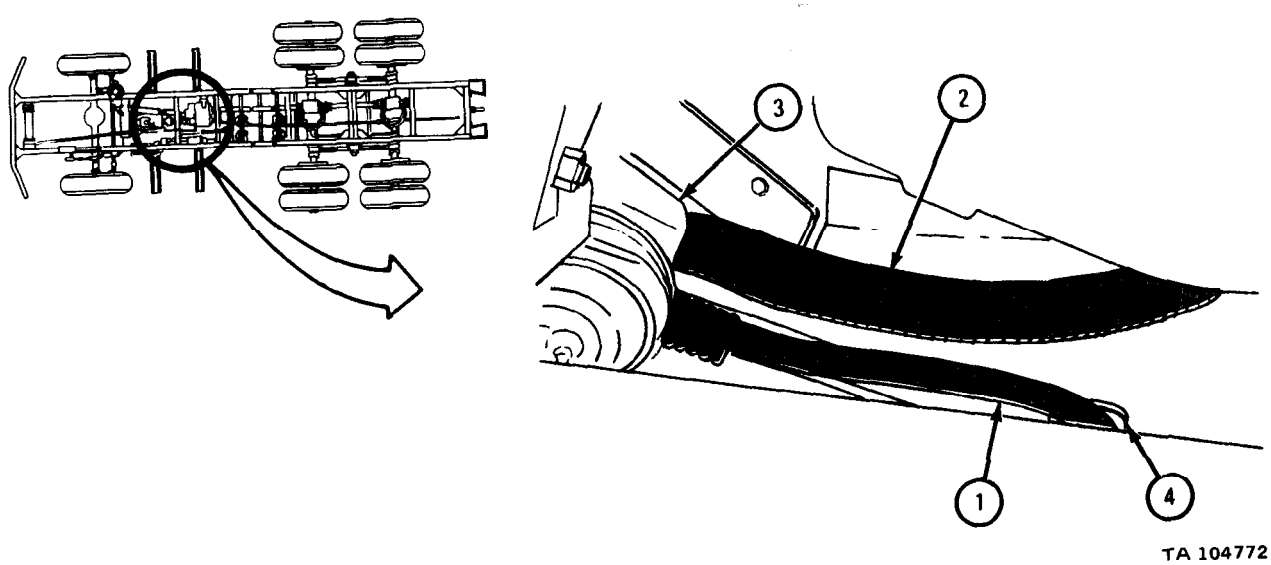
FRAME 1

CAUTION

When putting hoses together, be sure metal protective shield covering coolant inlet and outlet hoses is put on and placed properly, and that hoses are routed the same way they came off. Failure to do this could result in rubbing damage to hoses and loss of coolant.

1. Route inlet hose and shield (1) and outlet hose and shield (2) over engine mount (3).
2. Route end of inlet hose (1) through hole in body (4).

GO TO FRAME 2

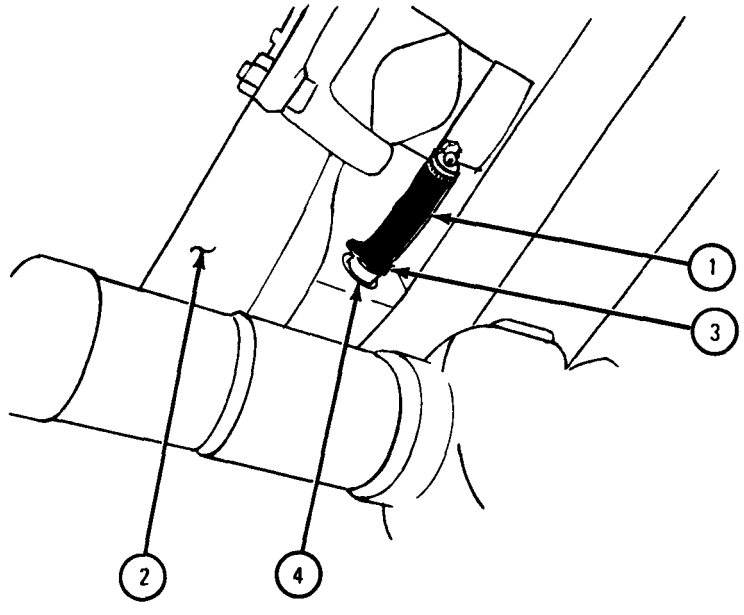


TA 104772

FRAME 2

1. Route end of outlet hose (1) over frame rail (2).
2. Put clamp (3) on end of outlet hose (1).
3. Put end of outlet hose (1) on battery box heating pad connector (4).
4. Using screwdriver, screw and tighten clamp (3).

GO TO FRAME 3

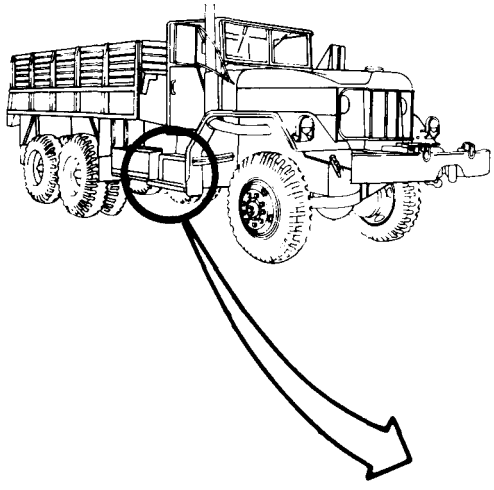


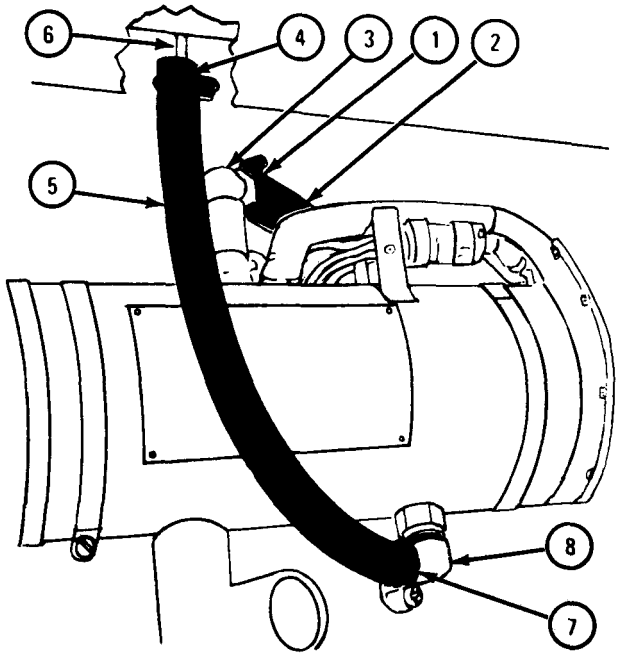
TA 104773

FRAME 3

1. Put clamp (1) on end of inlet hose (2). Put end of inlet hose (2) on elbow connector (3).
2. Using screwdriver, screw and tighten clamp (1).
3. Put clamp (4) on end of return hose (5).
4. Put end of return hose (5) on battery box heating pad connector (6).
5. Using screwdriver, screw and tighten clamp (4).
6. Put clamp (7) on other end of return hose (5).
7. Put end of return hose (5) on elbow connector (8).
8. Using screwdriver, screw and tighten clamp (7).

GO TO FRAME 4





TA 104774

FRAME 4

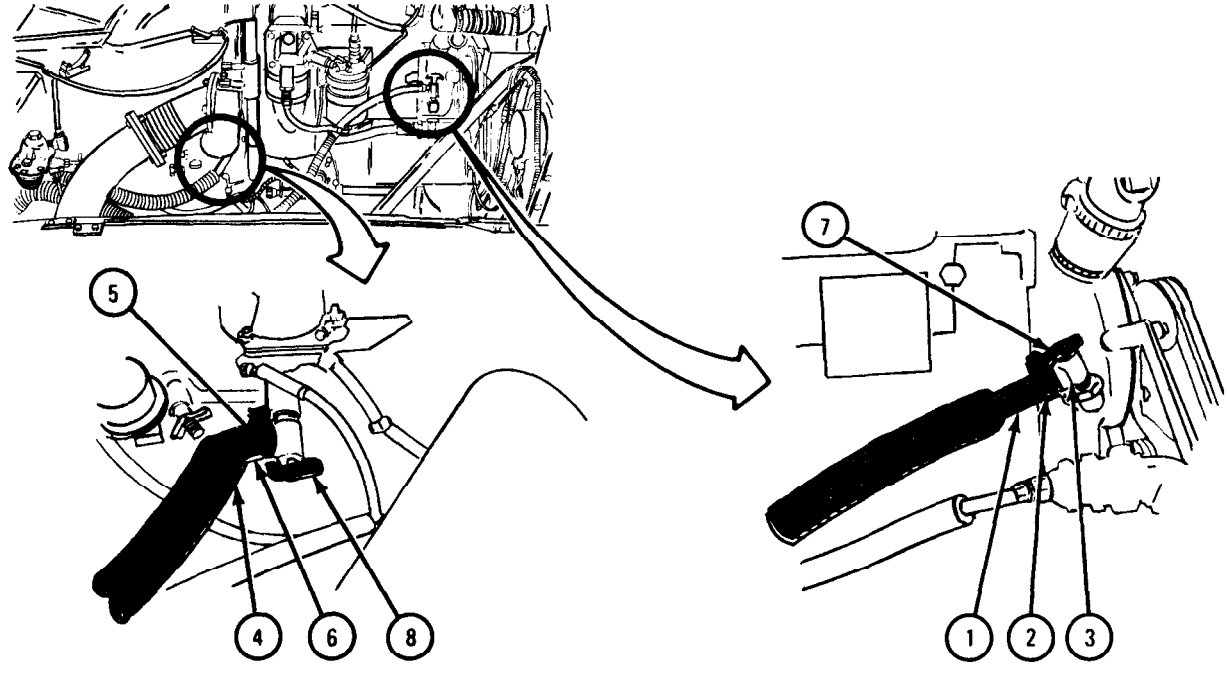
1. Route inlet hose (1) in engine compartment.
2. Put clamp (2) on end of inlet hose (1). Put end of inlet hose (1) on connector (3).
3. Using screwdriver, screw and tighten clamp (2).
4. Route outlet hose (4) in engine compartment.
5. Put clamp (5) on end of outlet hose (4). Put end of outlet hose (4) on connector (6).
6. Using screwdriver, screw and tighten clamp (5).
7. Open opetcocks (7 and 8) at front and rear of engine.

NOTE

Follow-on Maintenance Action Required:

1. Put on air cleaner filter element, but do not close hood. Refer to TM 9-2320-209-10.
2. Close battery box door. Refer to TM 9-2320-209-10.
3. Start engine. Check for coolant leaks. Refer to TM 9-2320-209-10.
4. Stop engine. Check coolant level. Refer to TM 9-2320-209-10.
5. Close hood. Refer to TM 9-2320-209-10.

END OF TASK



TA 104775

23-14. HOT WATER PERSONNEL HEATER DUCTING REPAIR. Refer to personnel fuel burning heater ducting repair, para 23-4, for procedures to repair the hot water heater ducting.

23-15. HOT WATER PERSONNEL HEATER AIR DIVERTER REPAIR. Refer to fuel burning personnel heater air diverter repair, para 23-5, for procedures to repair the hot water personnel heater air diverter.

23-16. HOT WATER PERSONNEL HEATER CONTROL CABLES REPAIR AND ADJUSTMENT. Refer to personnel fuel burning heater control cables repair and adjustment, para 23-8, for procedures to repair and adjust hot water personnel heater control cables.

23-17. HOT WATER PERSONNEL HEATER CONTROL SWITCH REMOVAL AND REPLACEMENT.

TOOLS: 1-inch wrench
Flat-tip screwdriver

SUPPLIES: None

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Removal.

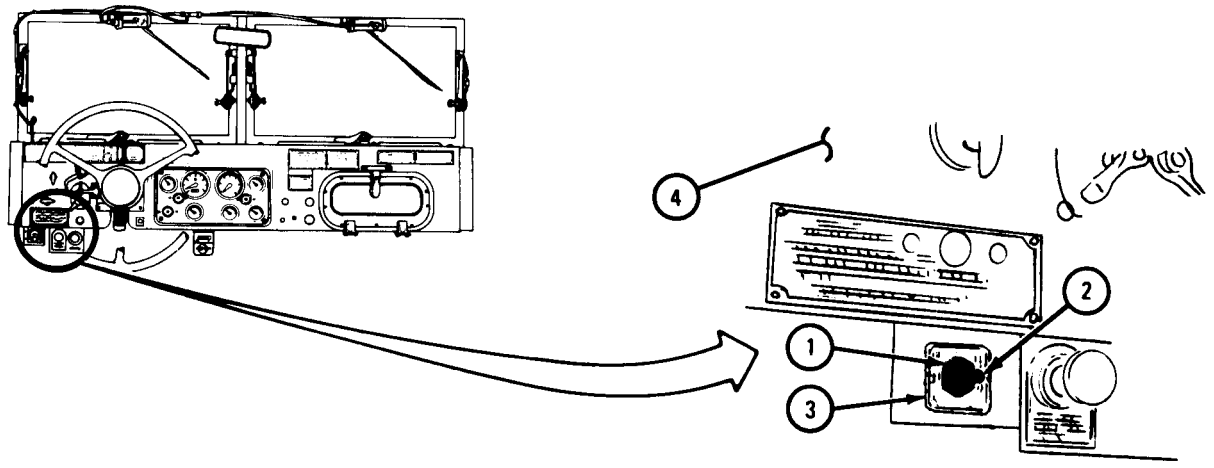
FRAME 1

NOTE

Note position of heater control switch before taking it out so that it can be put back the same way.

1. Using 1-inch wrench, unscrew and take off locking nut (1). Take heater control switch (2) from switch mounting bracket (3) from back of instrument panel (4).

GO TO FRAME 2



TA 047488

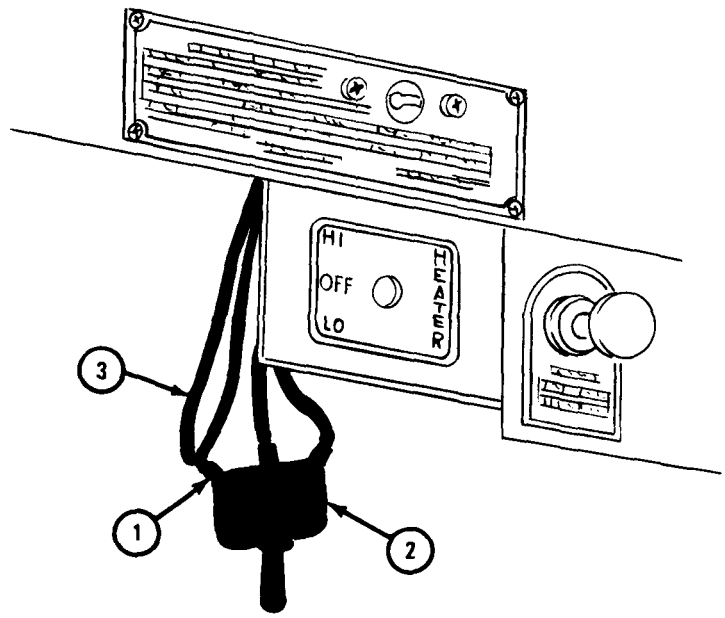
FRAME 2

NOTE

Tag all electrical connectors so they will be put back in the same place.

1. Using screwdriver, unscrew and take out three screws and lockwashers (1) from end of heater control switch (2). Take off four wires (3).

END OF TASK



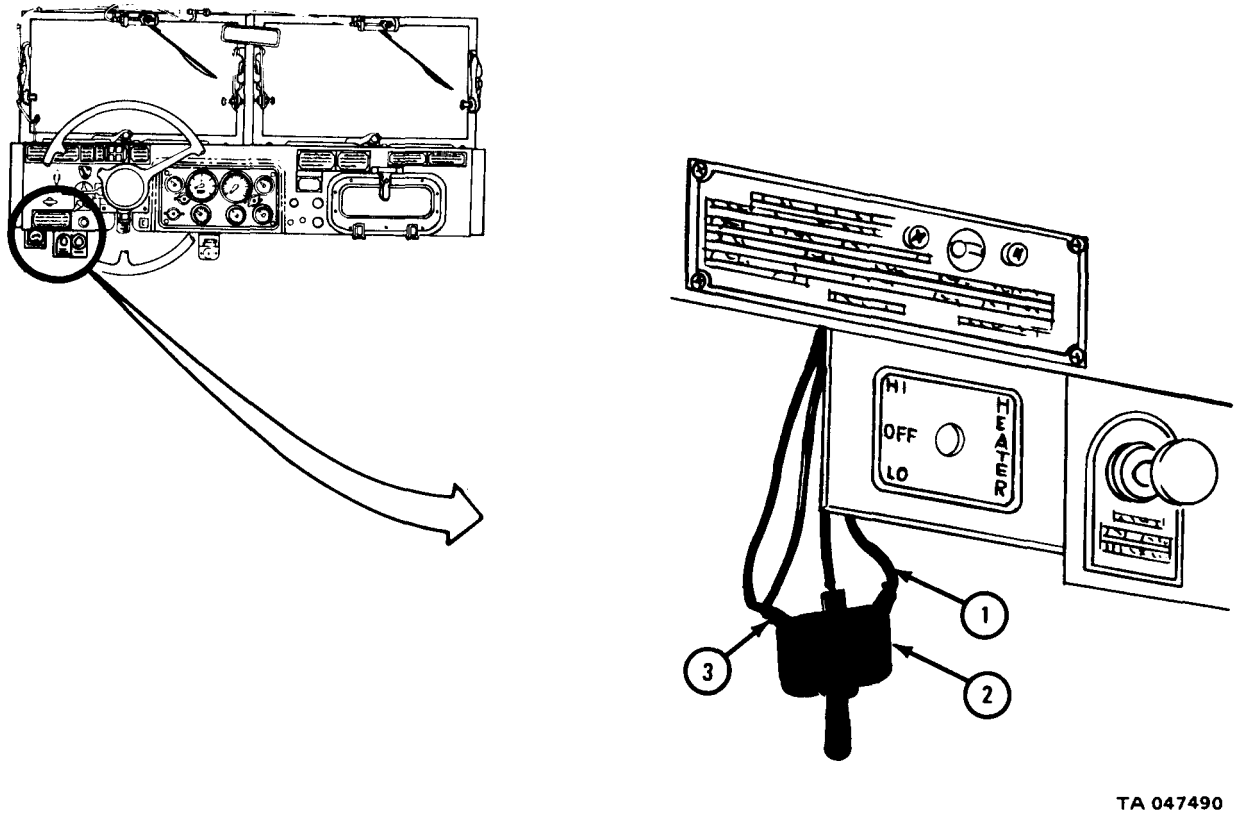
TA 047489

b. Replacement.

FRAME 1

1. Put four wires (1) on heater control switch (2) as tagged.
2. Using screwdriver, screw in and tighten three screws and lockwashers (3). Take off tags.

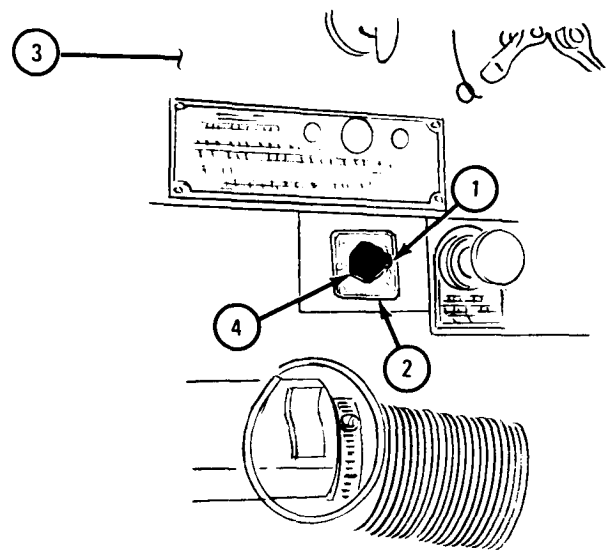
GO TO FRAME 2



FRAME 2

1. Put heater control switch (1) into place on mounting bracket (2) from back of instrument panel (3) in position noted.
2. Using 1-inch wrench, screw on and tighten locking nut (4).

END OF TASK



TA 047491

23-18. HOT WATER PERSONNEL HEATER HOSES AND CLAMPS REMOVAL AND REPLACEMENT.

TOOLS: Flat-tip screwdriver
1-gallon container

SUPPLIES: None

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off and cool, handbrake set.

a. Preliminary Procedure. Open hood and left side panel. Refer to TM 9-2320-209-10.

b. Removal.

FRAME 1

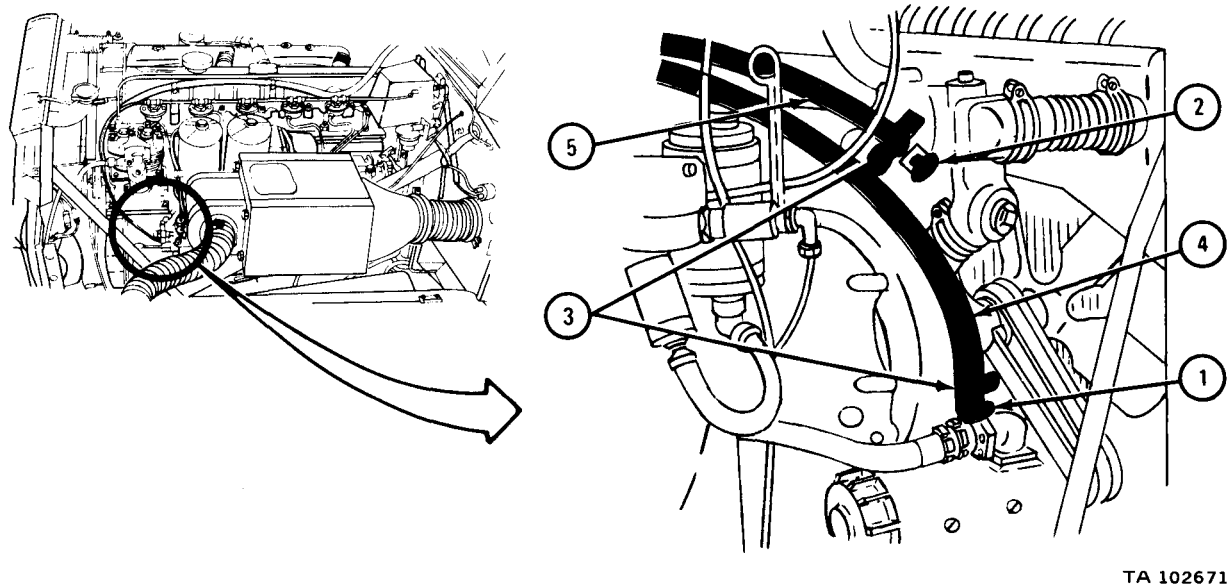
1. Close return shutoff cock (1) and inlet shutoff cock (2) by turning them to the right.
2. Using screwdriver, loosen two hose clamps (3).

NOTE

Note position of hoses (4 and 5) so that they are put back in the same place.

3. One at a time, take off ends of return hose (4) and inlet hose (5) and catch coolant in container.

GO TO FRAME 2

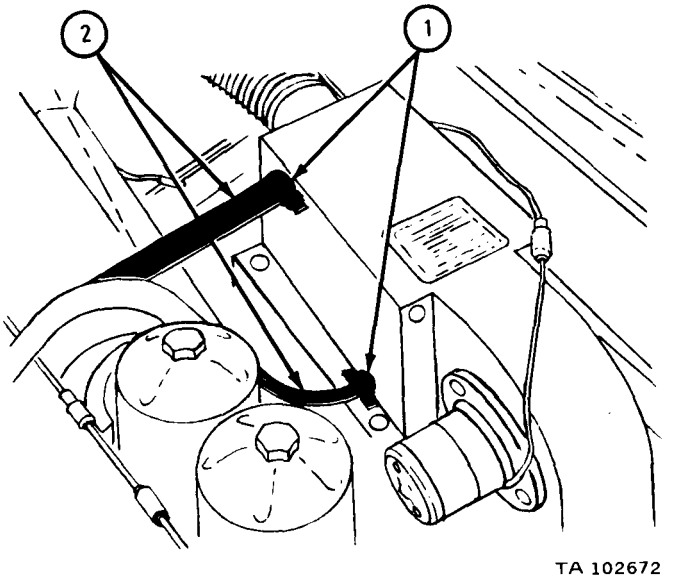


TA 102671

FRAME 2

1. Using screwdriver, loosen two hose clamps (1).
2. Take off two hoses (2).

END OF ASK



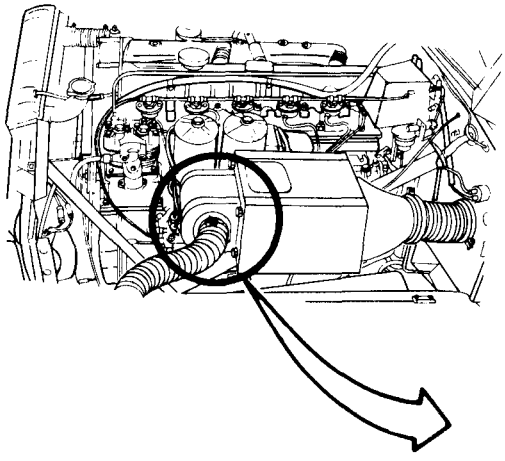
TA 102672

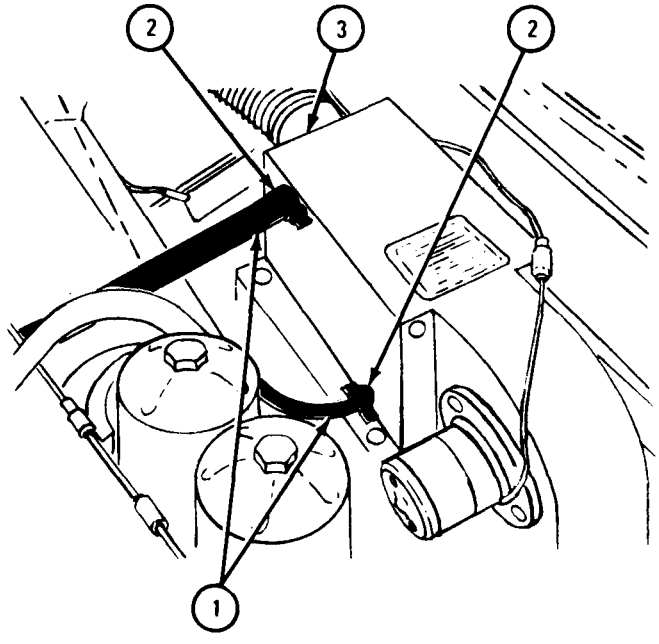
c. Replacement.

FRAME 1

1. Put two hoses (1) with clamps (2) on heater assembly (3) as noted.
2. Using screwdriver, tighten two hose clamps (2).

GO TO FRAME 2





TA 102673

FRAME 2

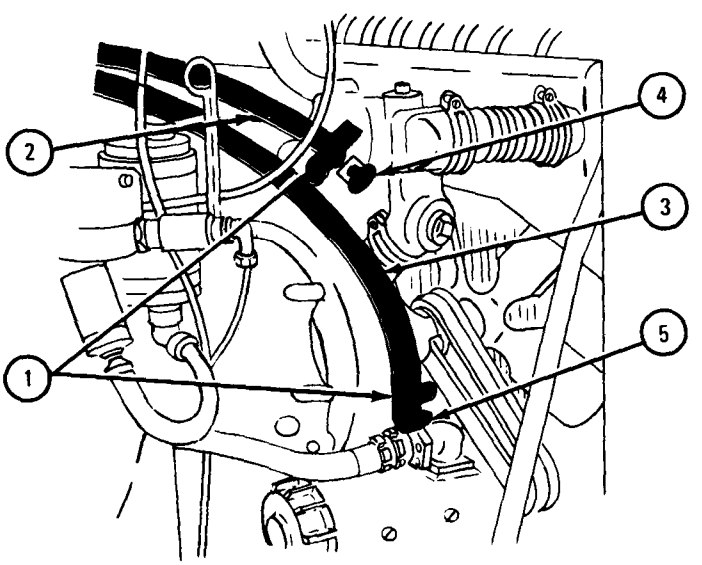
1. Put two clamps (1) on inlet hose (2) and return hose (3).
2. Put inlet hose (2) in place. Put return hose (3) in place.
3. Using screwdriver, tighten two clamps (1).
4. Open inlet shutoff cock (4) and return shutoff cock (5) by turning them to the left.

NOTE

Follow-on Maintenance Action Required:

1. Fill cooling system. Refer to Part 1, para 6-10.
2. Close hood and left side panel. Refer to TM 9-2320-209-10.

END OF TASK



TA 102674

23-19. HOT WATER PERSONNEL HEATER MOTOR RESISTOR REMOVAL AND REPLACEMENT.

TOOLS: Flat-tip screwdriver

SUPPLIES: Tags

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Preliminary Procedure. Disconnect battery ground cable. Refer to Part 1, para 7-58.

b. Removal.

FRAME 1

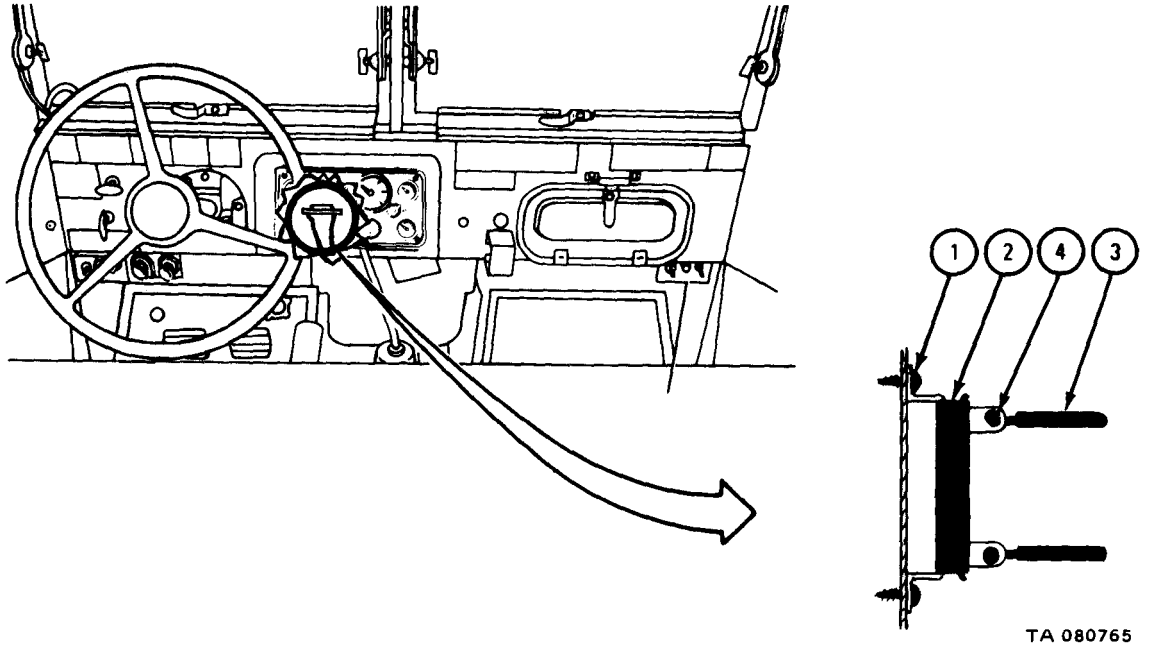
1. Using screwdriver, unscrew and take off two screws (1). Let heater motor resistor (2) hang down.

NOTE

Tag wires (3) so they can be put back in the same places.

2. Using screwdriver, unscrew and take off two screws (4) and two wires (3).
3. Take out heater motor resistor (2).

END OF TASK



c. Replacement.

FRAME 1

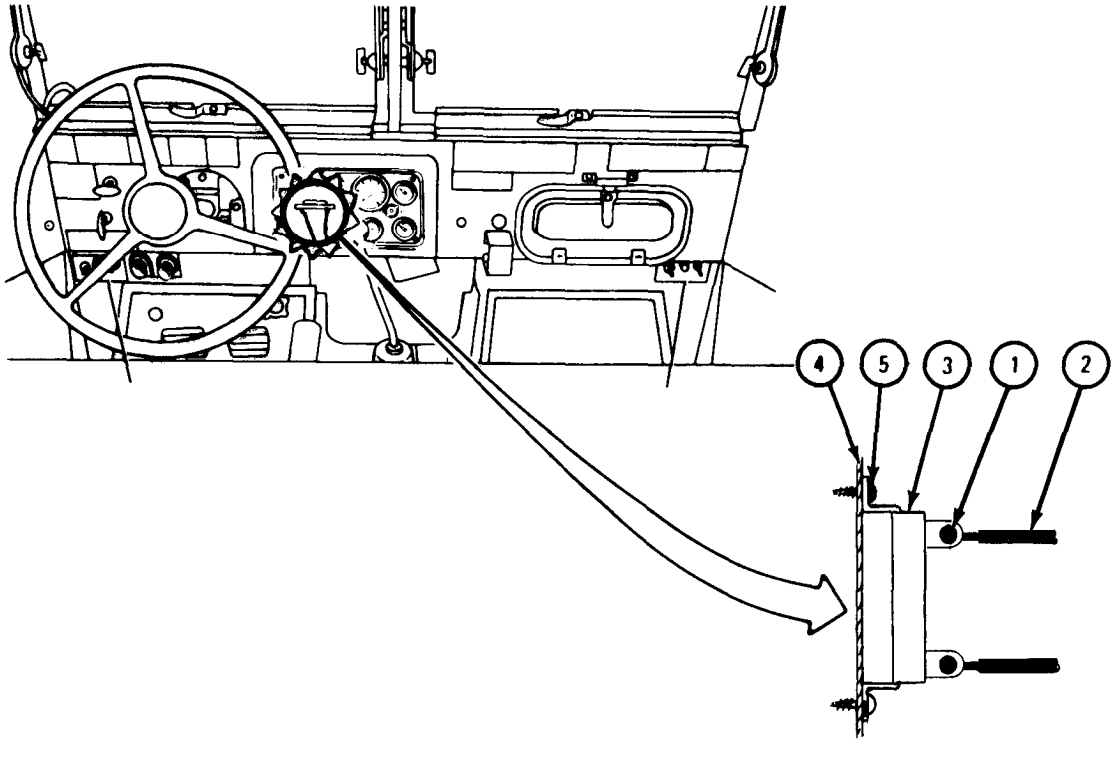
1. Using screwdriver, screw in and tighten two screws (1) with two wires (2) as tagged on heater motor resistor (3). Take off tags.
2. Put heater motor resistor (3) on fire wall (4) and aline screw holes.
3. Using screwdriver, screw in and tighten two screws (5).

NOTE

Follow-on Maintenance Action Required:

Reconnect battery ground cable. Refer to Part 1, para 7-58.

END OF TASK



TA 080766

23-20. HOT WATER PERSONNEL HEATER BLOWER MOTOR REPAIR.

TOOLS: Flat-tip screwdriver

SUPPLIES: None

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

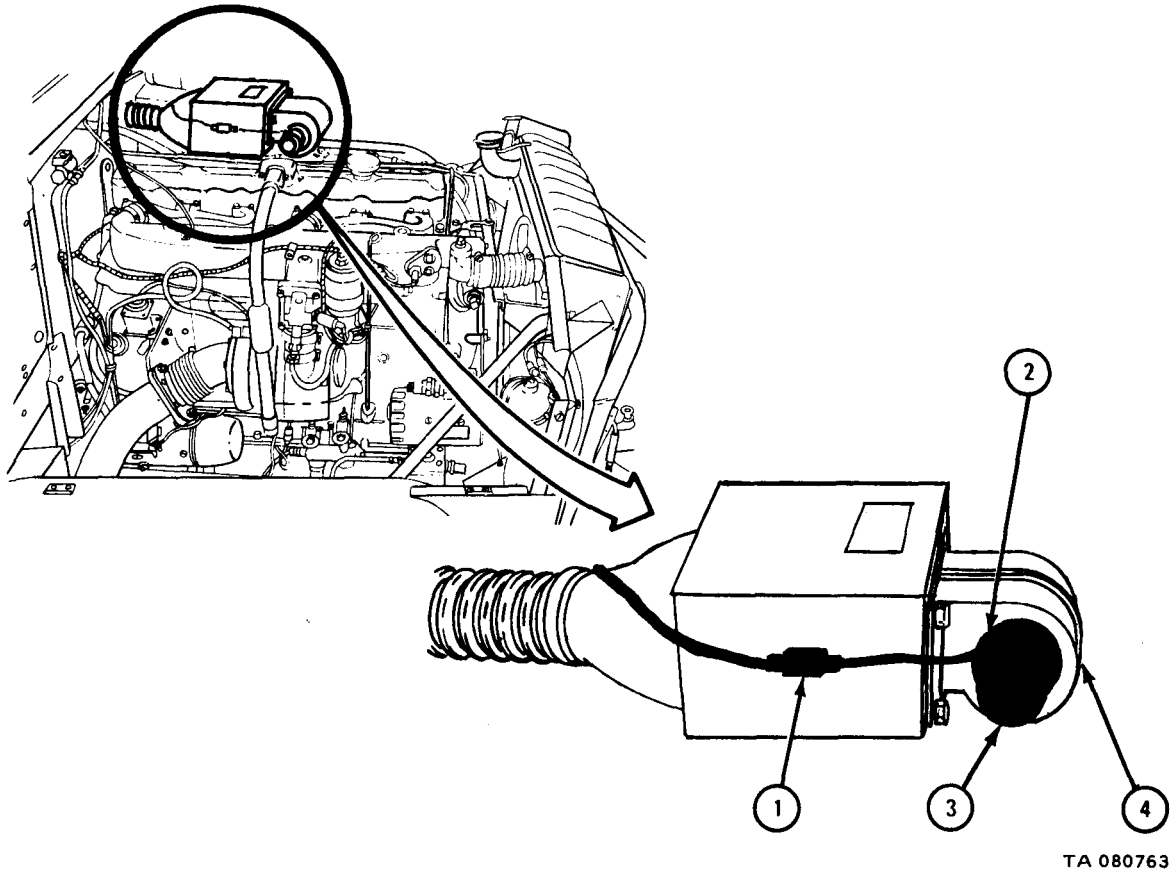
a. Preliminary Procedure. Open hood and left side panel. Refer to TM 9-2920-209-10.

b. Removal.

FRAME 1

1. Unplug electrical lead connector (1).
2. Using screwdriver, unscrew and take out four screws and lockwashers (2).
3. Take blower motor (3) out of blower housing (4).

END OF TASK



c. Replacement.

FRAME 2

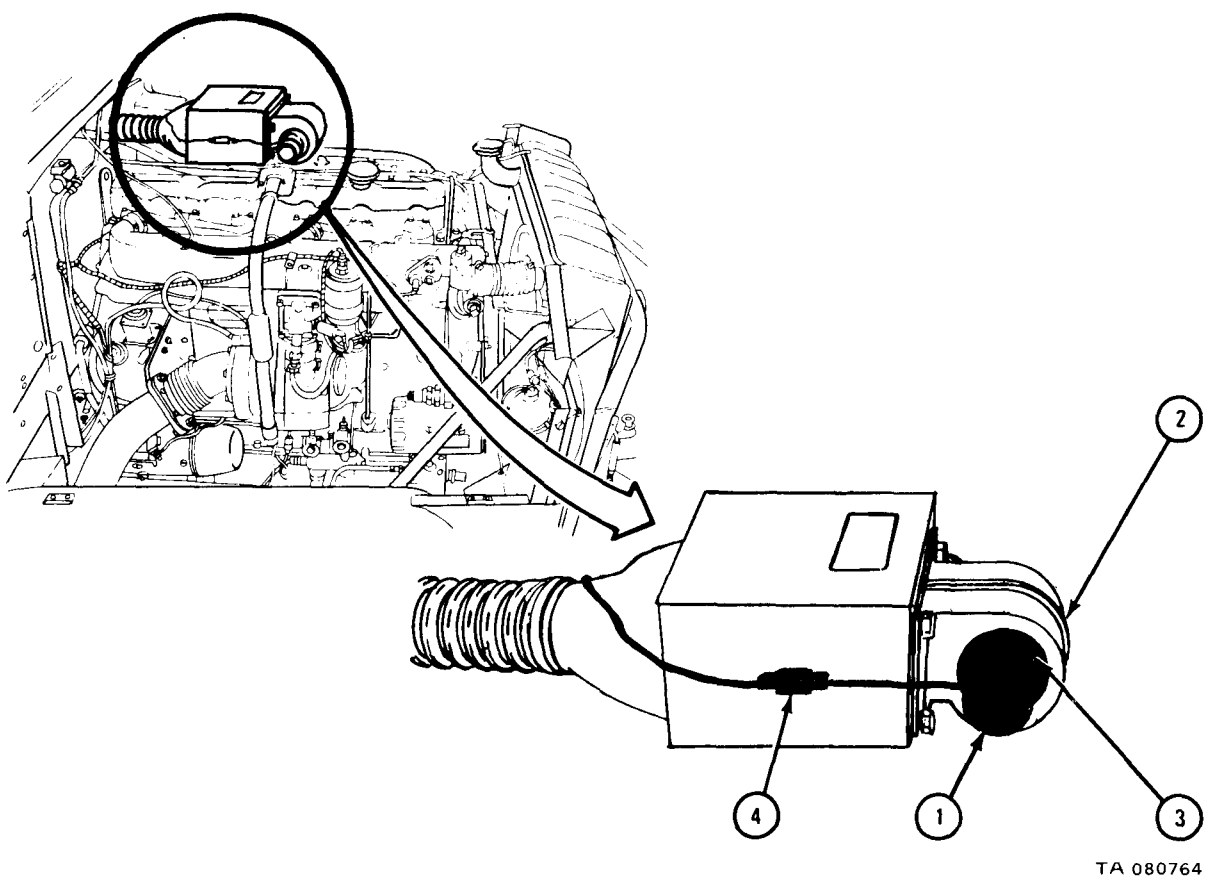
1. Put blower motor (1) in blower housing (2) and aline screw holes.
2. Using screwdriver, screw in and tighten four screws with lockwashers (3).
3. Plug in electrical lead connector (4).

NOTE

Follow -on Maintenance Action Required:

Close hood and left side panel. Refer to TM 9-2320-209-10.

END OF TASK



23-21. WINTERIZATION KIT FUEL PUMP REPAIR.

TOOLS: Open end wrench set, pn GGG-W-636
Flat-tip screwdriver
6-inch pliers
1/2-gallon container

SUPPLIES: Solvent, dry cleaning, type II (SD-2), Fed. Spec P-D-680
Fuel pump cover gasket
Fuel pump cup gasket
Rags

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Preliminary Procedures.

(1) Disconnect battery ground cable. Refer to Part 1, para 7-58.

(2) Turn off personnel heater and powerplant heater. Refer to TM 9-2320-209-10.

WARNING

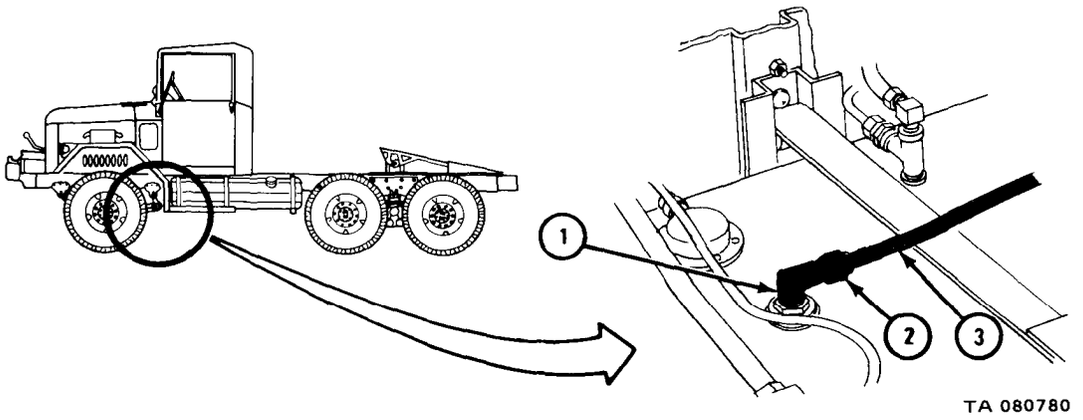
Smoking, sparks, or open flame are not allowed within 50 feet of work area during this task. Fuel could catch fire or explode, causing serious injury to personnel and damage to equipment.

b. Removal.

FRAME 1

1. Using wrenches, hold tube fitting (1) and unscrew tube nut (2).
2. Pull tube (3) with tube nut (2) away from tube fitting (1).
3. Using rags, wipe up any fuel which drains from tube (3) and put rags in approved disposal area.

GO TO FRAME 2



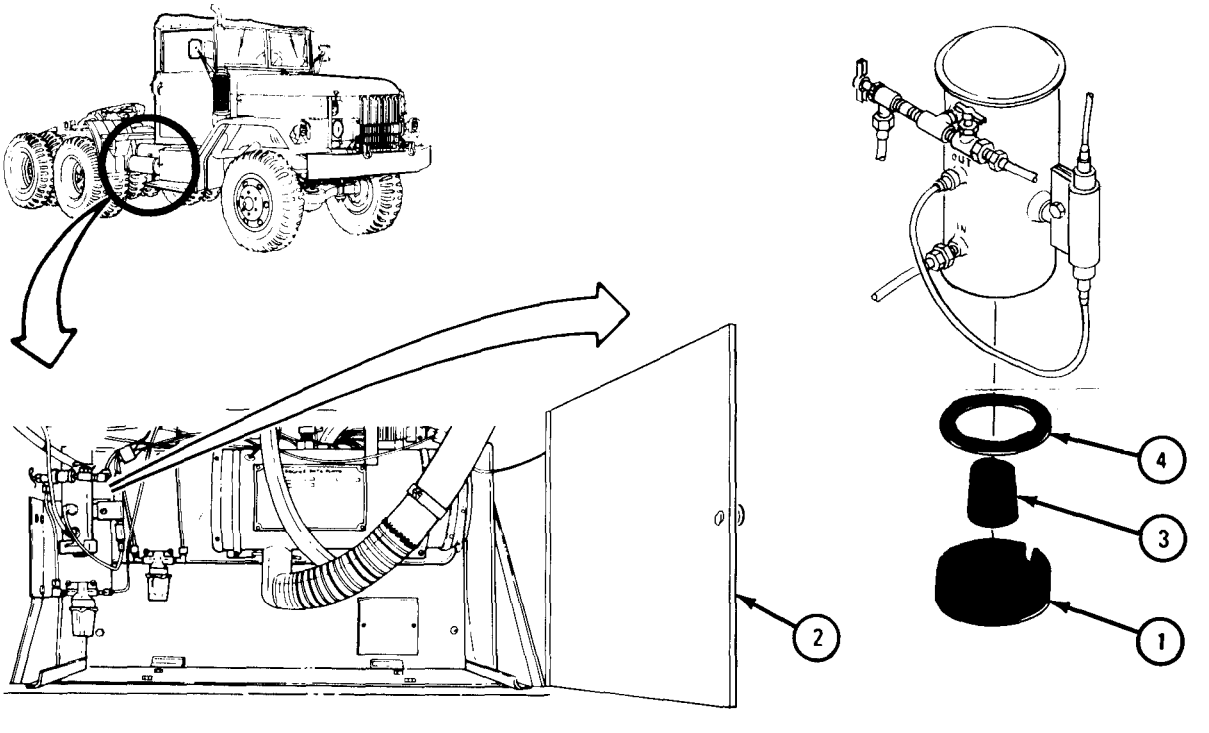
FRAME 2

NOTE

When taking off cover (1), drain fuel into container and put fuel in approved disposal area.

1. Open battery box door (2).
2. Turn cover (1) to left and take it off.
3. Take out sediment strainer (3) and gasket (4). Throw away gasket.

END OF TASK



TA 080781

c. Cleaning, Inspection, and Repair.

FRAME 1

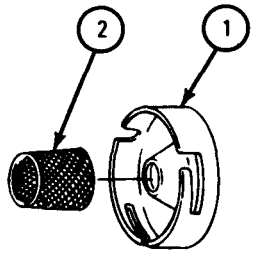
WARNING

Dry cleaning solvent is flammable. Do not use near an open flame. Keep a fire extinguisher nearby when solvent is used. Use only in well-ventilated places. Failure to do this may result in injury to personnel and damage to equipment.

Eye shields must be worn when using compressed air. Eye injury can occur if eye shields are not used.

1. Clean all parts with solvent.
2. Using compressed air, clean magnet inside of cover (1).
3. Check that cover (1) has no cracks or breaks. If cover is damaged, throw it away and get a new one.
4. Check that sediment strainer (2) has no cracks, breaks, tears or bends. If sediment strainer is damaged, throw it away and get a new one.

END OF TASK



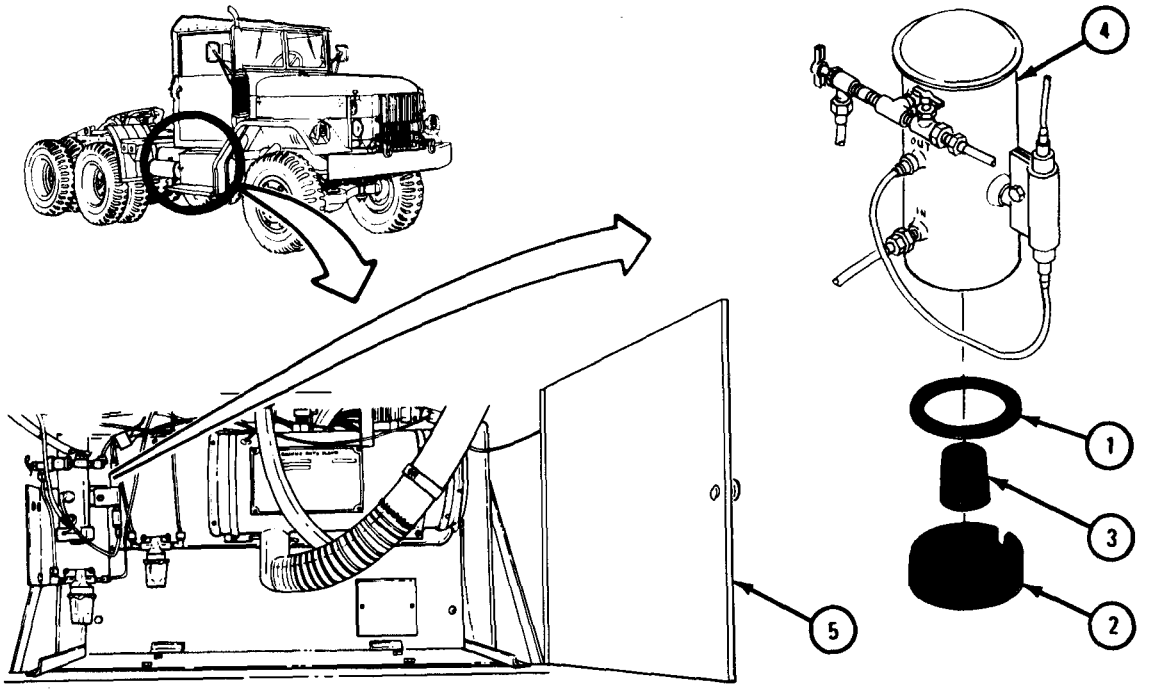
TA 080783

d. Replacement.

FRAME 1

1. Put gasket (1) in cover (2).
2. Put sediment strainer (3) on cone in cover (2).
3. Put cover (2) on fuel pump (4) and turn cover to right to lock.
4. Close battery box door (5).

GO TO FRAME 2



TA 080784

FRAME 2

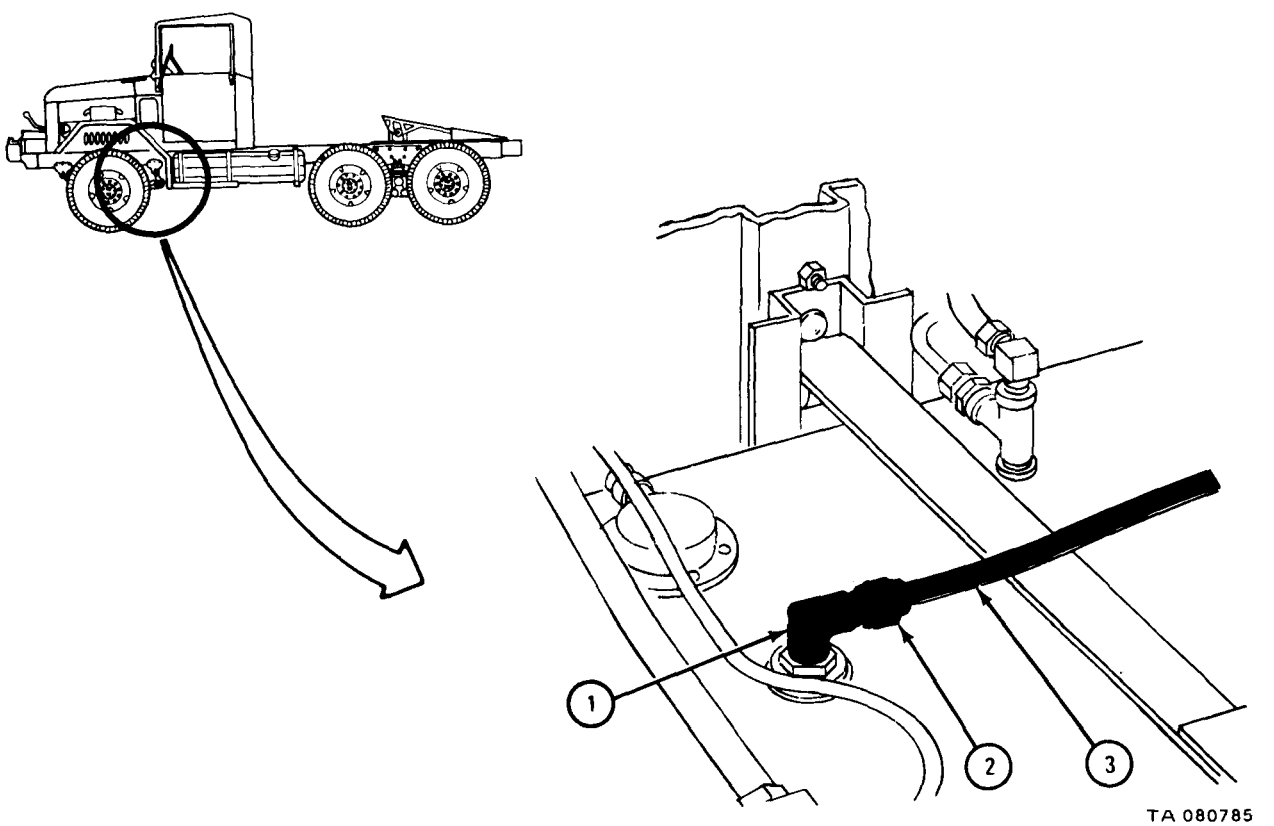
1. Using wrenches, hold tube fitting (1) and screw on and tighten tube nut (2) with tube (3).

NOTE

Follow-on Maintenance Action Required:

Reconnect battery ground cable. Refer to Part 1, para 7-58.

END OF TASK



23-22. BATTERY BOX HEATER PAD REPAIR.

NOTE

Repair of battery box heater pad is limited to putting a new battery box heater pad in place of a damaged one.

TOOLS: Flat-tip screwdriver
1-gallon container

SUPPLIES: None

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off and cool, handbrake set.

a. Preliminary Procedures.

(1) Remove batteries. Refer to Part 1, para 7-56.

(2) Open hood and right side panel. Refer to TM 9-2320-209-10.

WARNING

Do not work on cooling system components until cool. Personnel can be badly burned by hot components.

NOTE

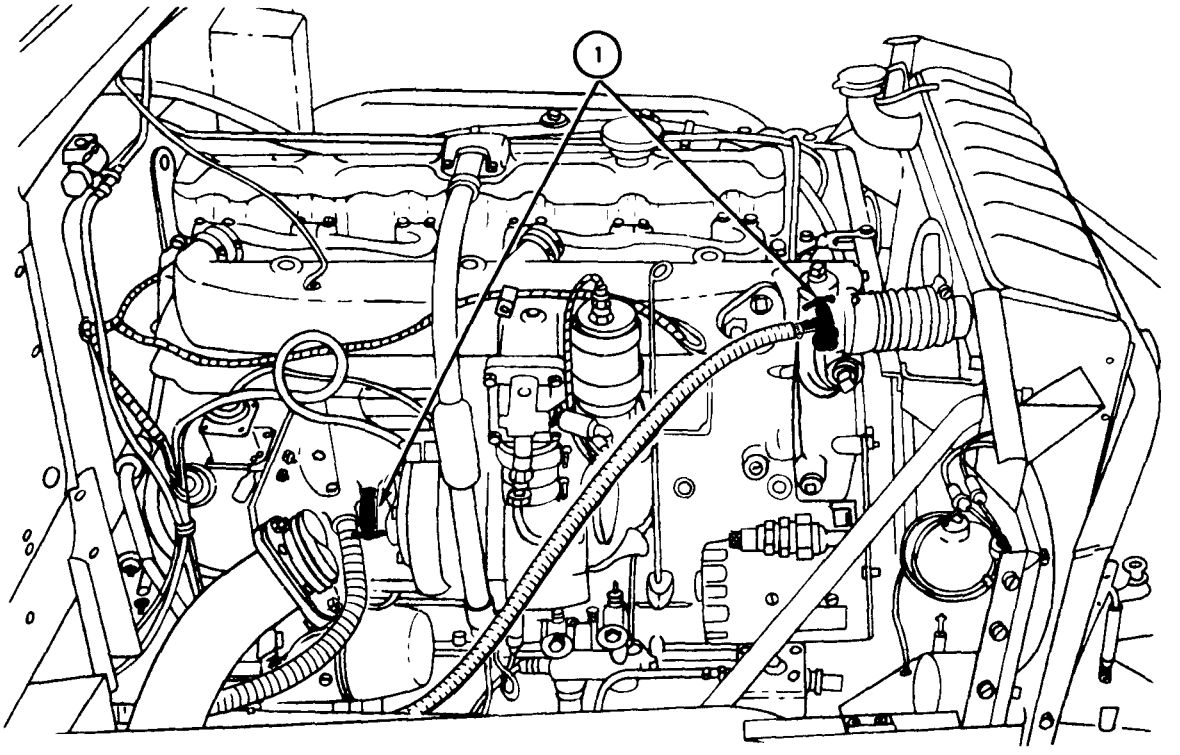
Make sure powerplant heater is off and cool.

b. Removal.

FRAME 1

1. Turn two shutoff cocks (1) to right to stop coolant flow.

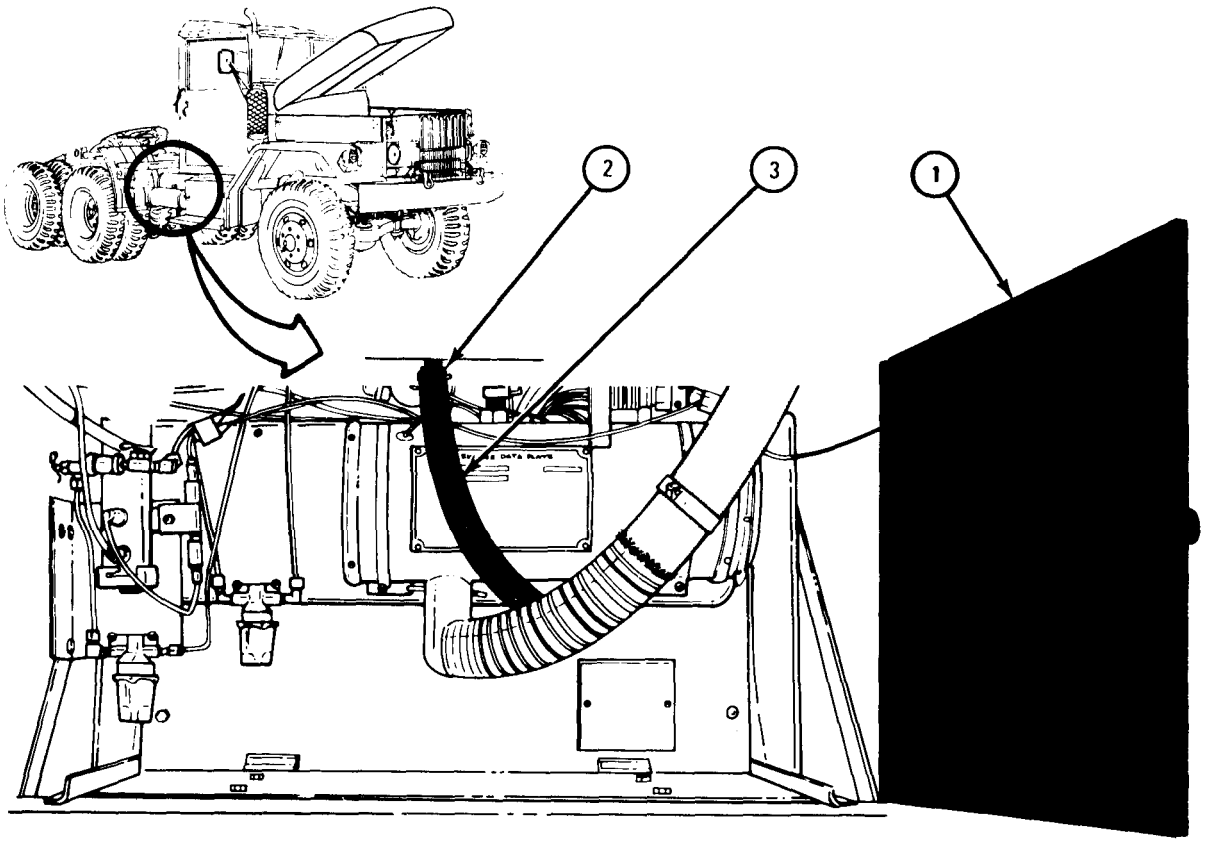
GO TO FRAME 2



FRAME 2

1. Open powerplant heater box door (1).
2. Using screwdriver, loosen hose clamp (2).
3. Turn and pull off heater hose (3). Drain coolant from heater hose into container.

GO TO FRAME 3

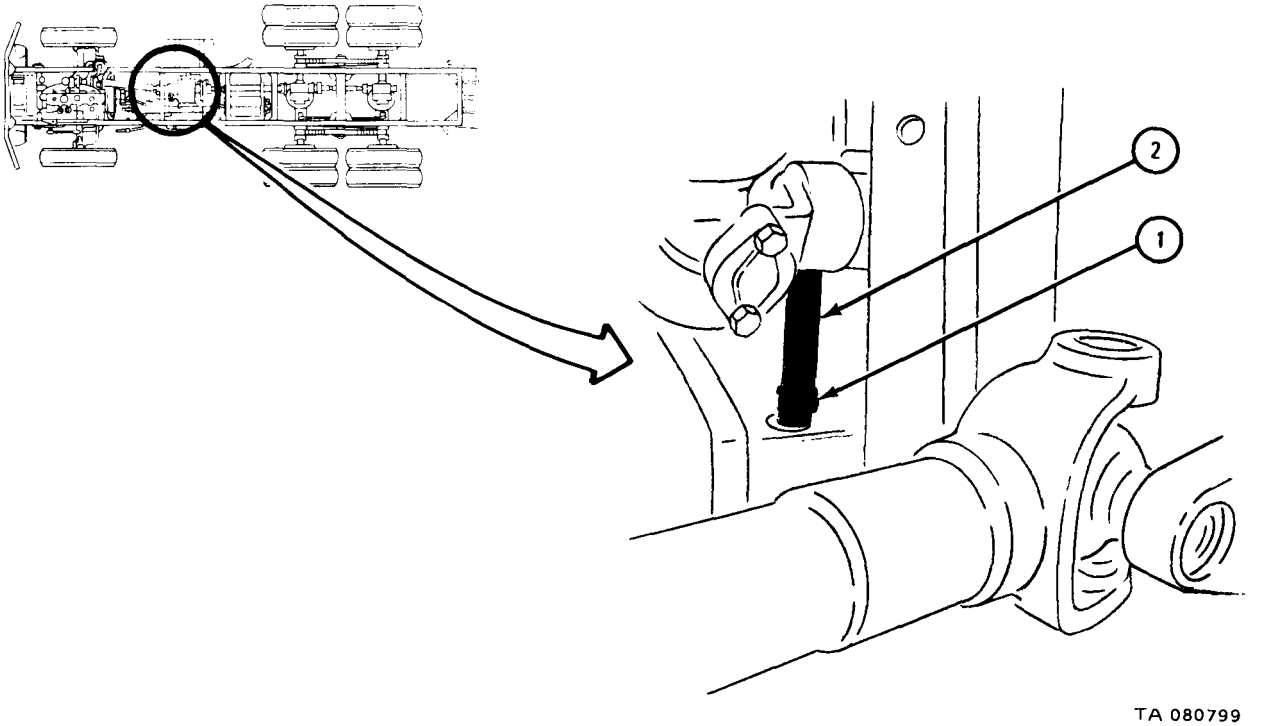


TA 080798

FRAME 3

1. Using screwdriver, loosen hose clamp (1).
2. Turn and pull off heater hose (2). Drain coolant from heater hose into container.
3. Put coolant in container in approved disposal area.

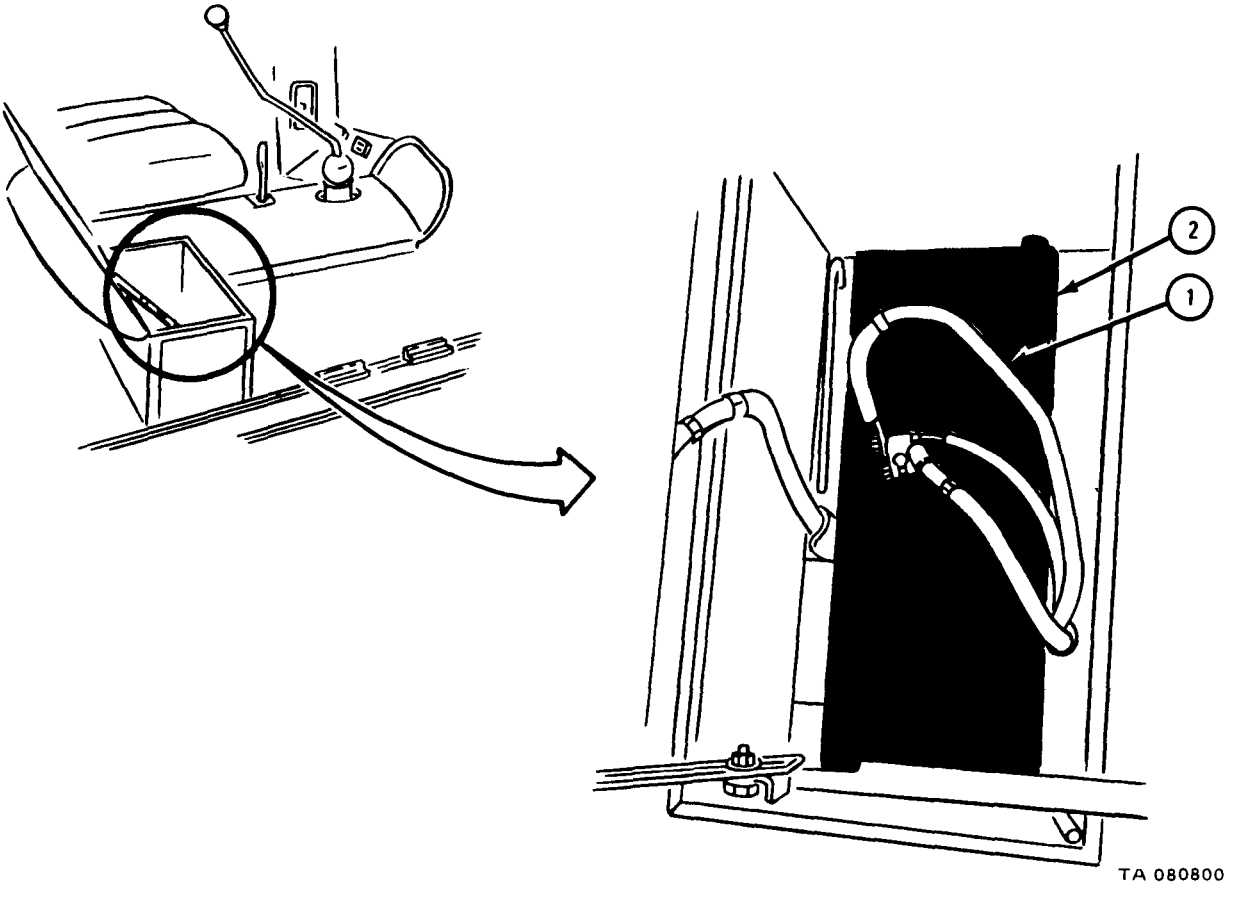
GO TO FRAME 4



FRAME 4

1. Move battery cables (1) out of the way and lift out battery box heater pad (2).

END OF TASK

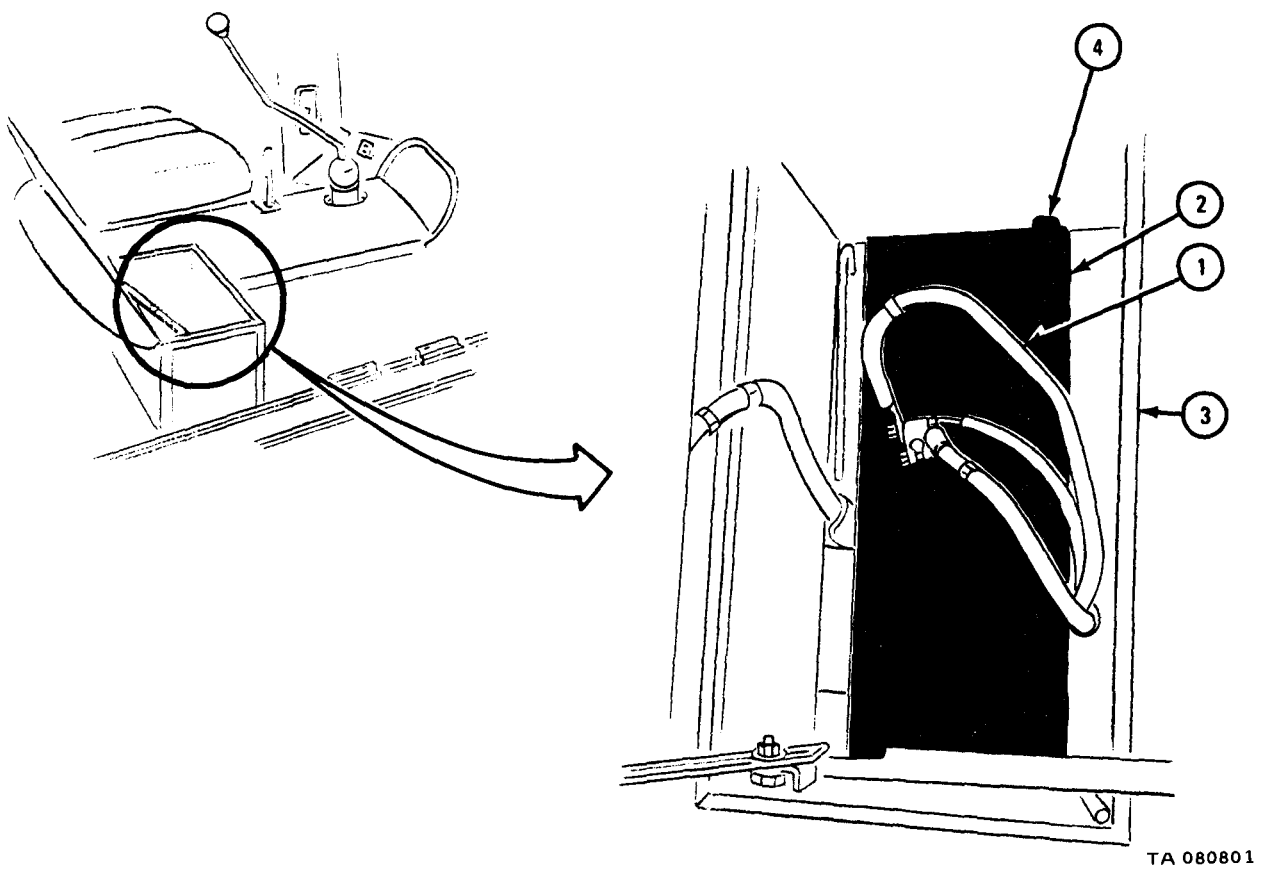


c. Replacement.

FRAME 1

1. Move battery cables (1) out of the way. Put battery box heater pad (2) into battery box (3) with straight hose connection (4) toward driver's seat.

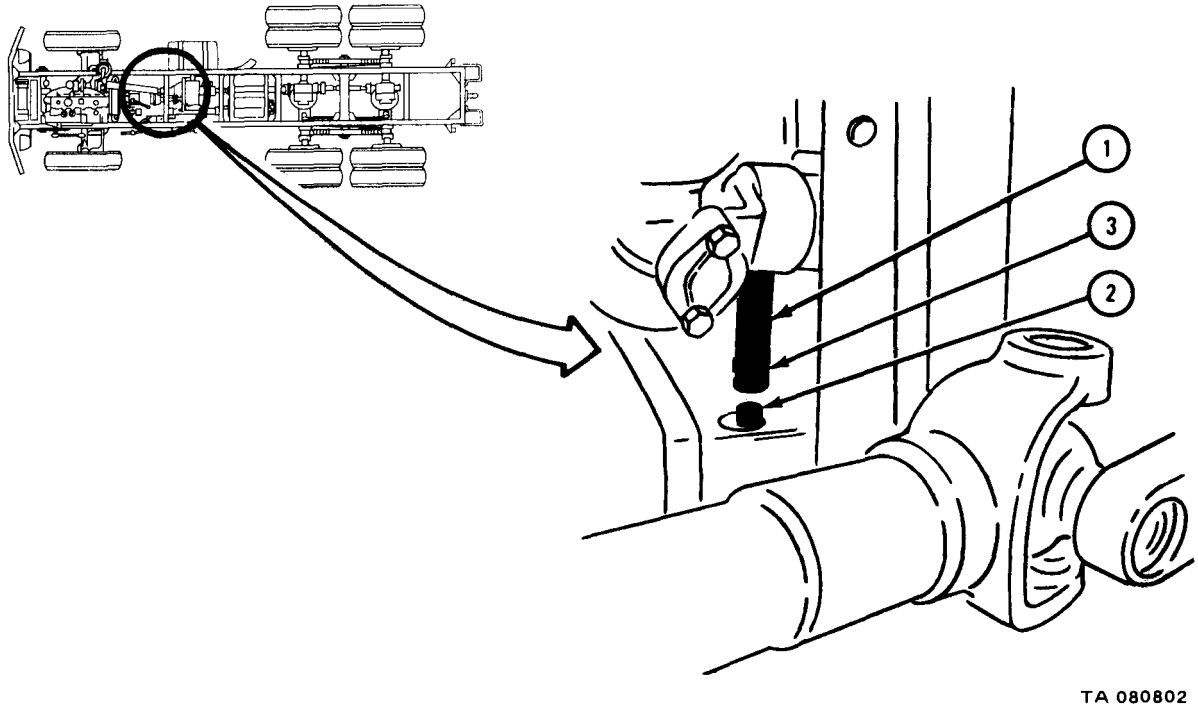
GO TO FRAME 2



FRAME 2

1. Put heater hose (1) on hose connection (2).
2. Using screwdriver, tighten hose clamp (3).

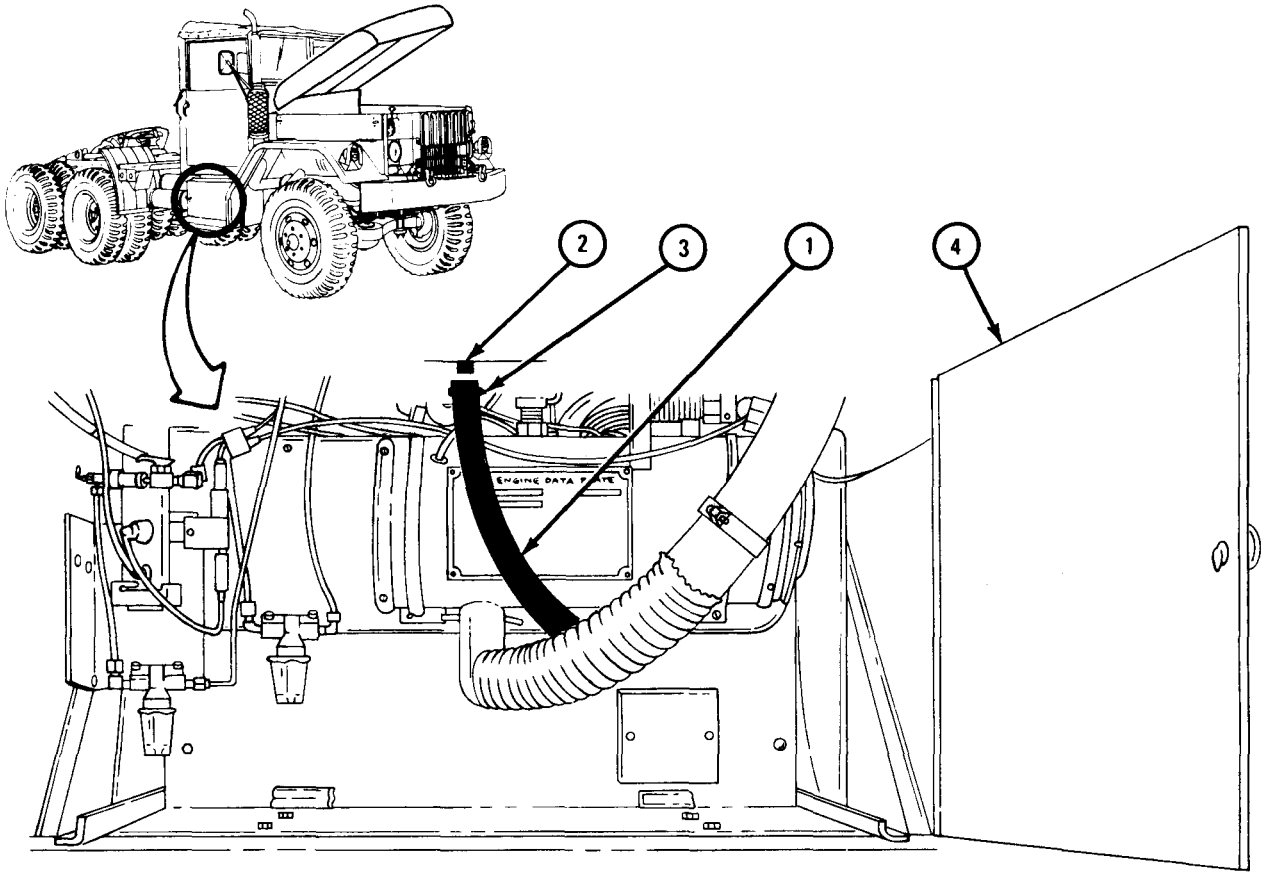
GO TO FRAME 3



FRAME 3

1. Put heater hose (1) on hose connection (2).
2. Using screwdriver, tighten hose clamp (3).
3. Close powerplant heater box door (4).

GO TO FRAME 4



TA 080803

FRAME 4

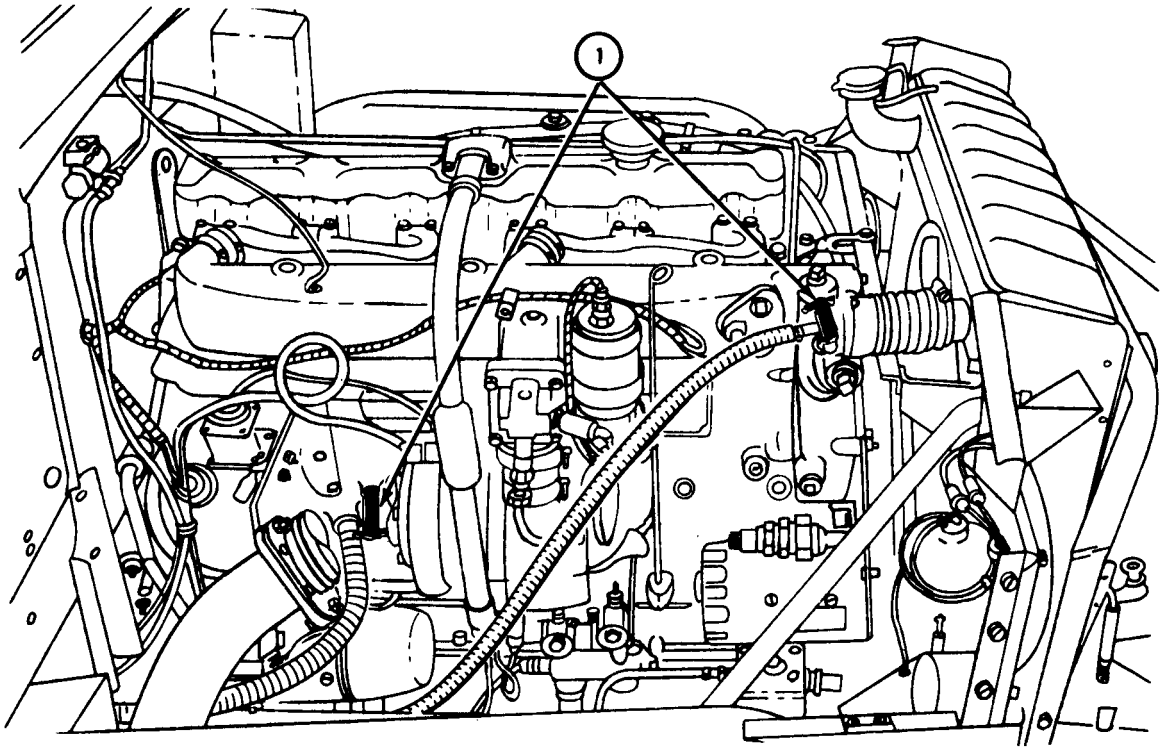
1. Turn two shutoff cocks (1) to left to let coolant flow.

NOTE

Yellow-on Maintenance Action Required:

1. Put batteries in battery box. Refer to Part 1, para 7-56.
2. Refill cooling system. Refer to Part 1, para 6-10.
3. Close hood and right side panel. Refer to TM 9-2320-209-10.

END OF TASK



TA 080797

23-23. HOOD, SIDE PANEL, AND RADIATOR COVERS REMOVAL AND REPLACEMENT.

TOOLS: None

SUPPLIES: None

PERSONNEL: One

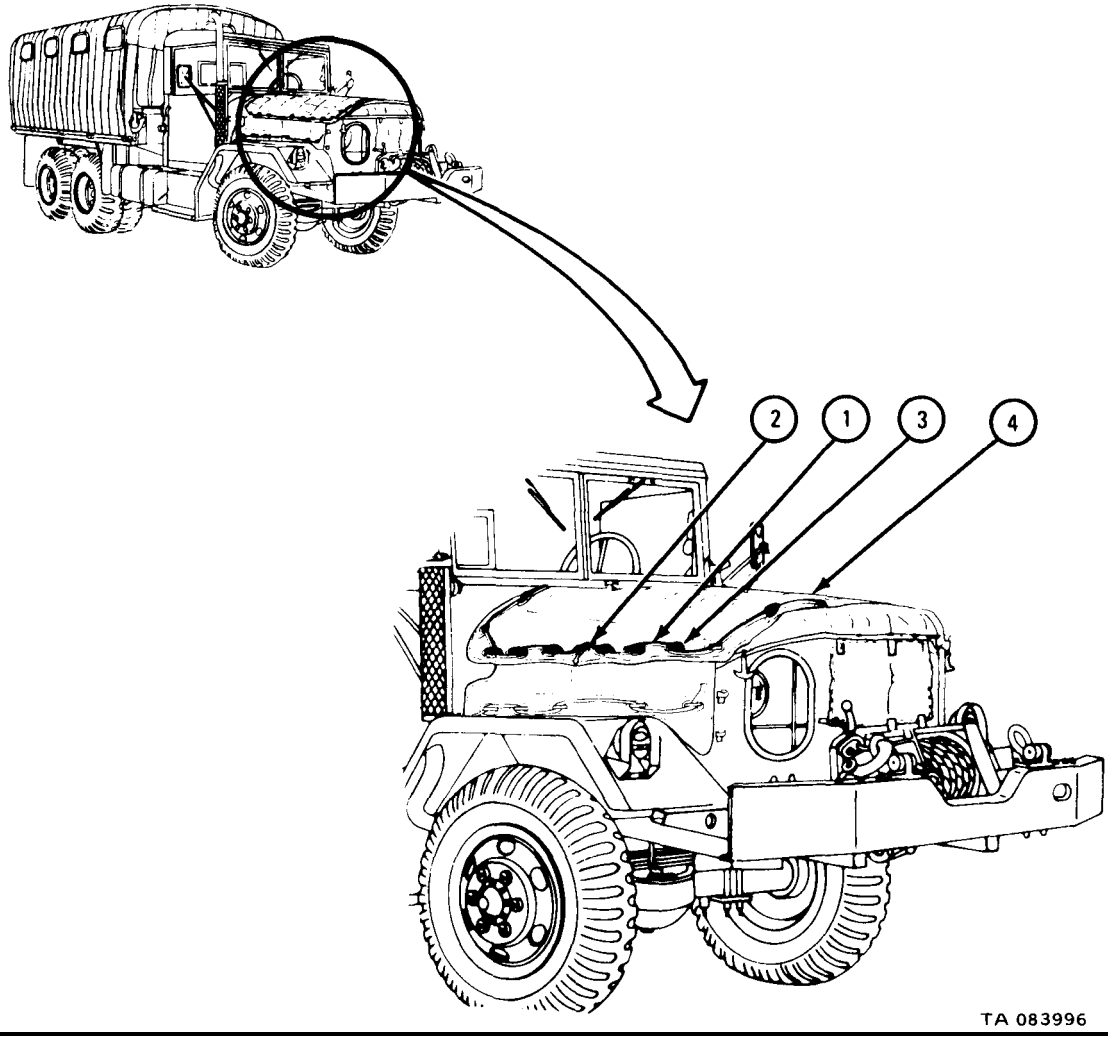
EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Removal.

FRAME 1

1. Working at right side of truck, untie strap (1) at point (2) and pull strap through 16 loops (3).
2. Do step 1 again on left side of truck.
3. Take off hood cover (4).

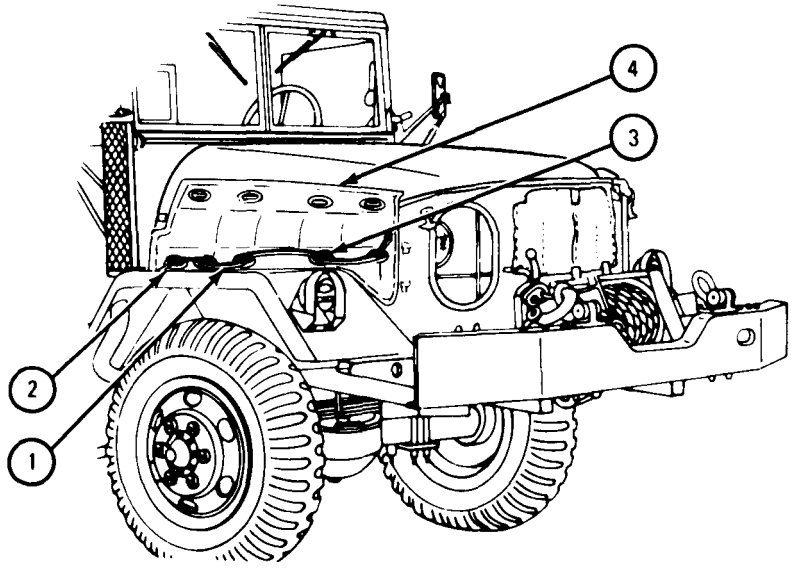
GO TO FRAME 2



FRAME 2

1. Working at right side of truck, untie strap (1) at point (2) and pull strap through eight loops (3).
2. Take off side panel cover (4).
3. Do steps 1 and 2 again on left side of truck.

GO TO FRAME 3

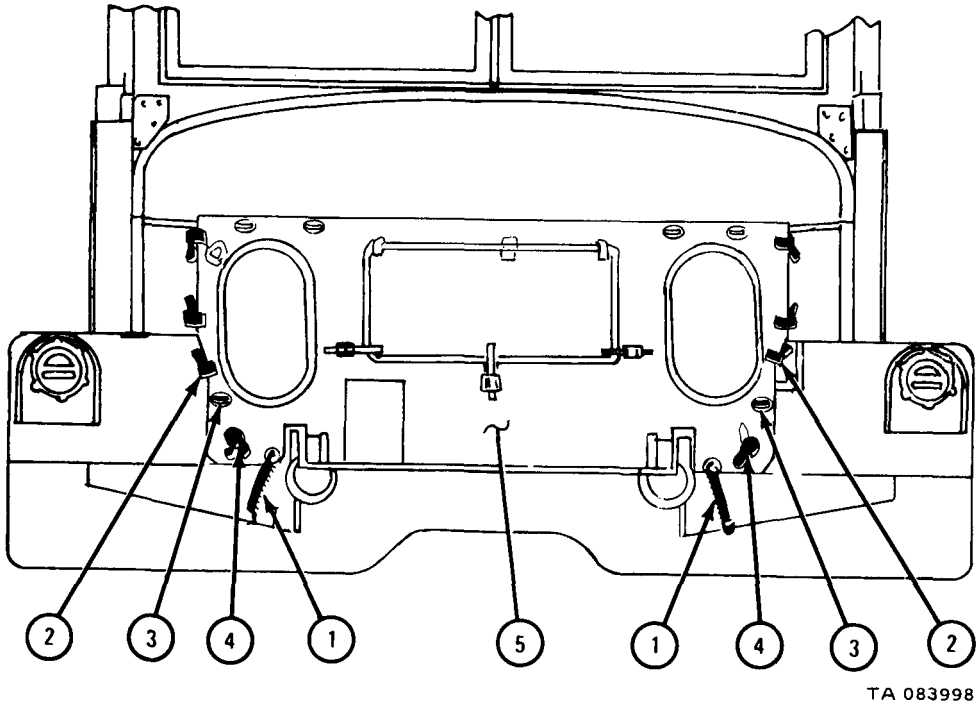


TA 083997

FRAME 3

1. Working at front of truck, unhook two springs (1).
2. Unbuckle straps (2) and pull them through loops (3).
3. Untie straps (4) and take off radiator cover (5).

END OF TASK



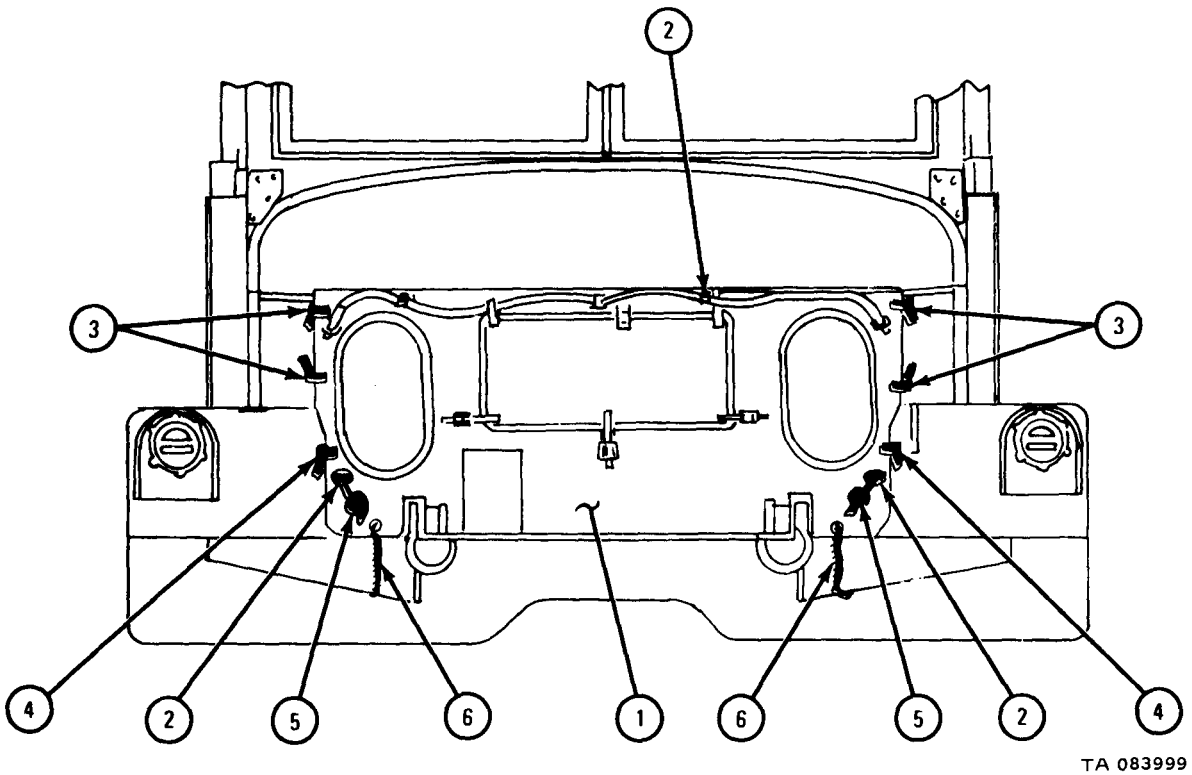
TA 083998

b. Replacement.

FRAME 1

1. Working at front of truck, hang radiator cover (1) over loops (2).
2. Put straps (3) through loops (2) and tie straps down.
3. Put straps (4) through loops (2) and buckle (5) and make straps fast to buckle.
4. Hook up two springs (6) as shown.

GO TO FRAME 2

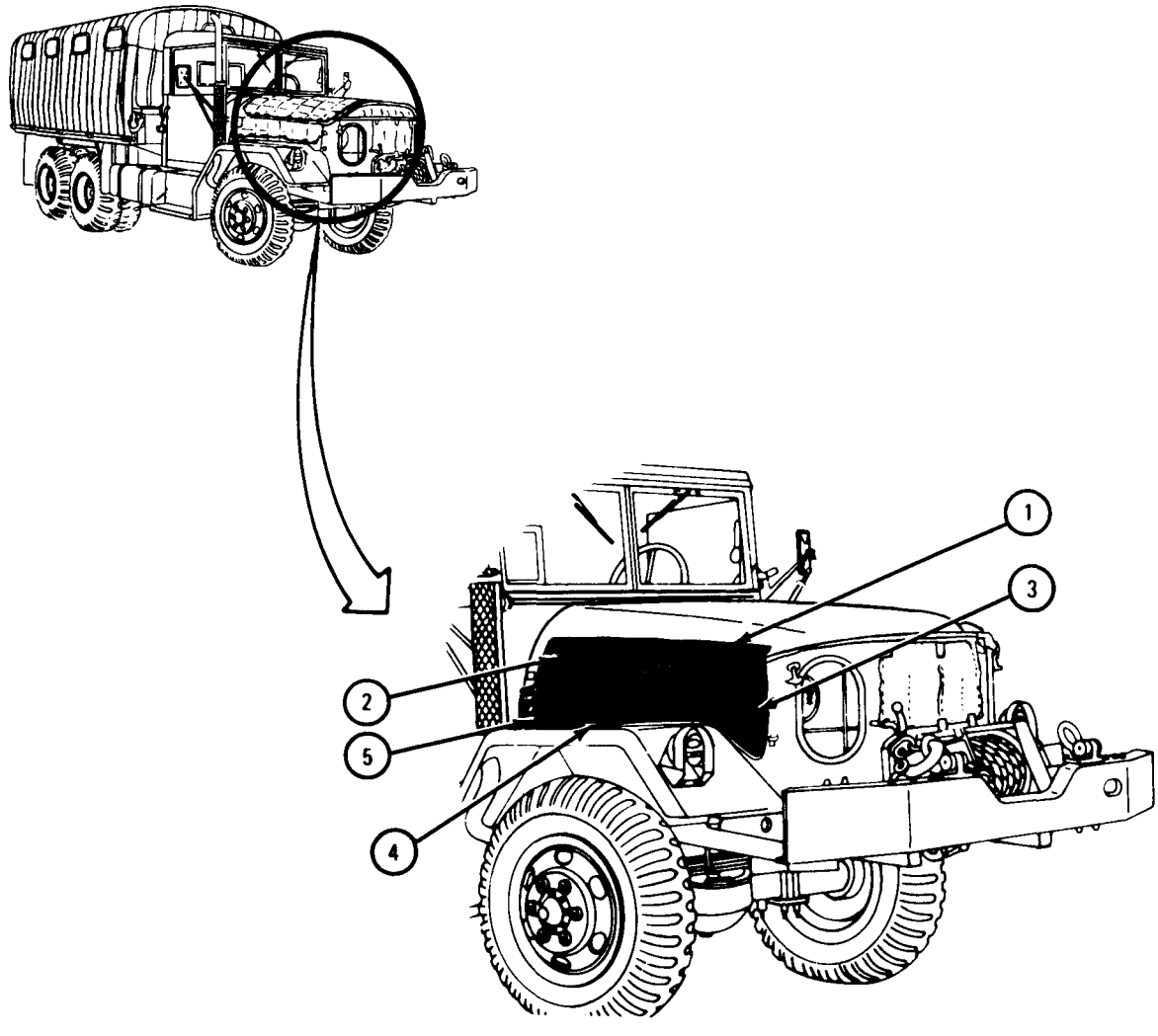


TA 083999

FRAME 2

1. Working at right side of truck, hang side panel cover (1) over loops (2) and loops (3).
2. Push strap (4) through loops (3) and tie strap down at point (5).
3. Do steps 1 and 2 again at left side of truck.

GO TO FRAME 3

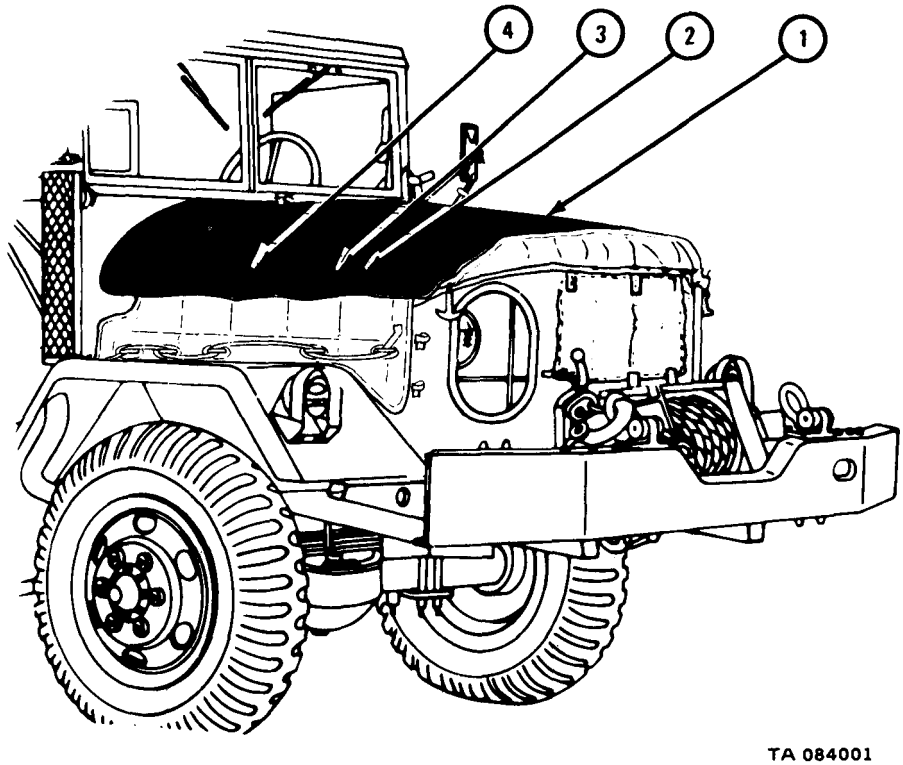


TA 084000

FRAME 3

1. Place hood cover (1) on hood and hook it on loops (2).
2. Working on right side of truck, push straps (3) through loops (2). Tie straps at point (4).
3. Do steps 1 and 2 again on left side of truck.

END OF TASK



TA 084001

23-24. SLAVE RECEPTACLE ASSEMBLY REPAIR.

TOOLS: 9/16-inch wrench (2)
7/16-inch wrench (2)
Soldering iron
Flat-tip screwdriver
6-inch pliers
Cross-tip screwdriver (Phillips type)

SUPPLIES: Solder

PERSONNEL: Two

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Preliminary Procedures.

(1) Open battery box cover.

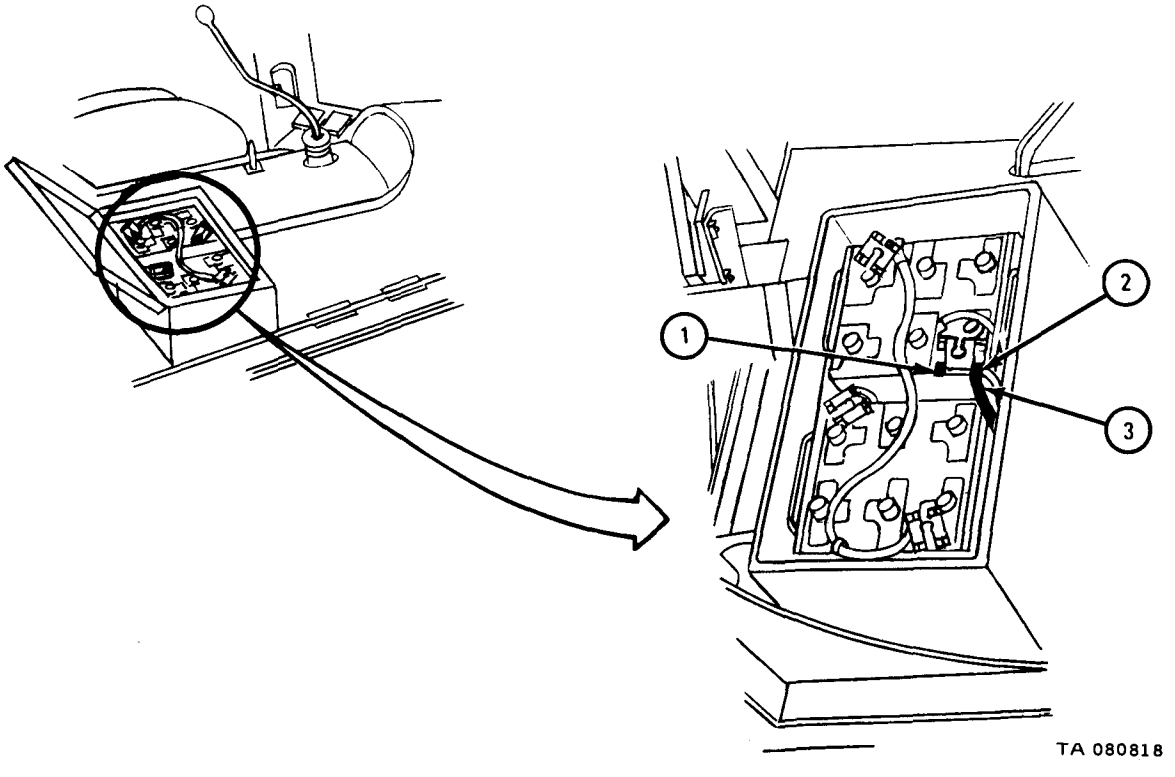
(2) Disconnect battery ground cable. Refer to Part 1, para 7-58.

b. Removal.

FRAME 1

1. Using 9/16-inch wrenches, hold capscrew (1) and unscrew and take off nut (2).
2. Take off positive cable (3).

GO TO FRAME 2



FRAME 2

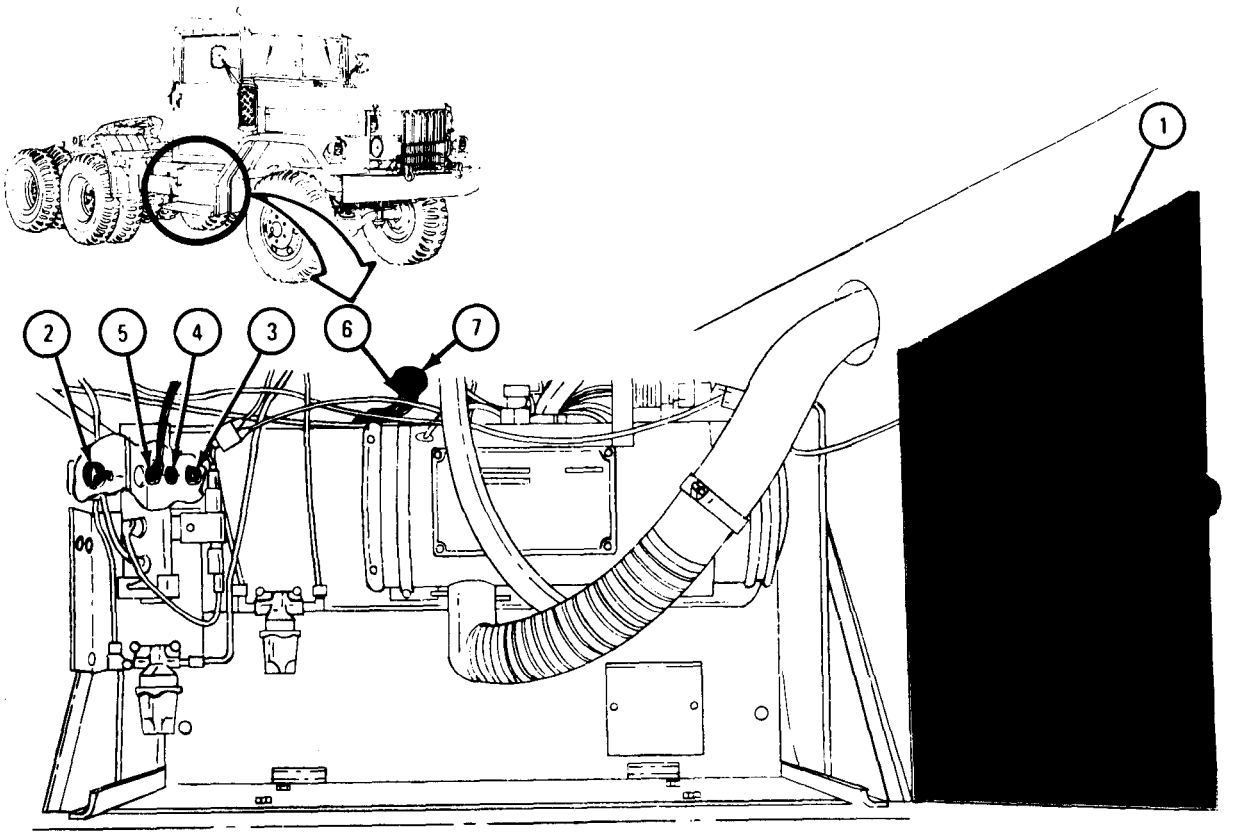
1. Open powerplant heater box door (1).

Soldier A 2. Working under truck and using 9/16-inch wrench, hold capscrew (2).

Soldier B 3. Using 9/16-inch wrench, unscrew and take off nut (3), washer (4), and cable (5).

4. Pull positive cable (6) out of grommet (7).

GO TO FRAME 3

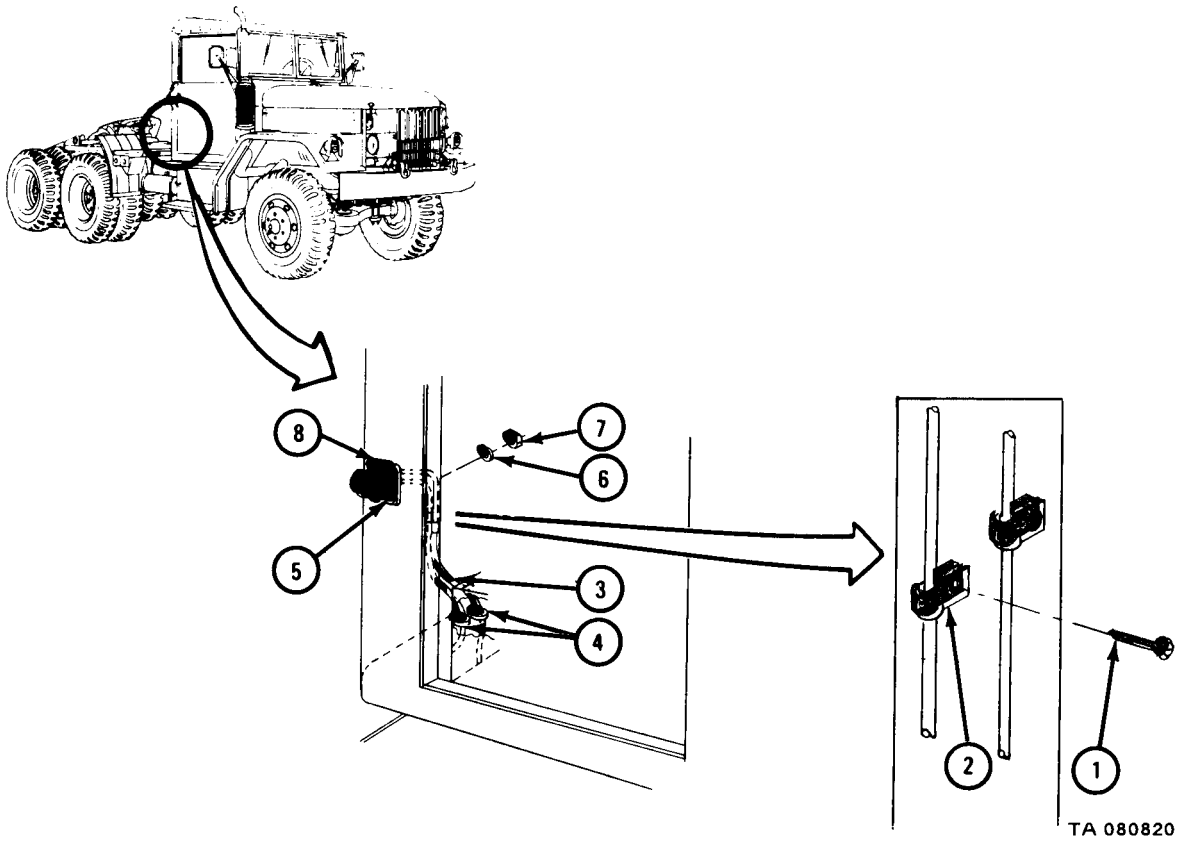


TA 080819

FRAME 3

1. Using phillips screwdriver, unscrew and take out two screws (1). Spread open and take off two clamps (2).
2. Pull two slave receptacle cables (3) out of two grommets (4). Using screwdriver, pry out two grommets.
3. Using 7/16-inch wrenches, unscrew and take out four capscrews (5), four lockwashers (6), and four nuts (7). Take out slave receptacle assembly (8).

END OF TASK

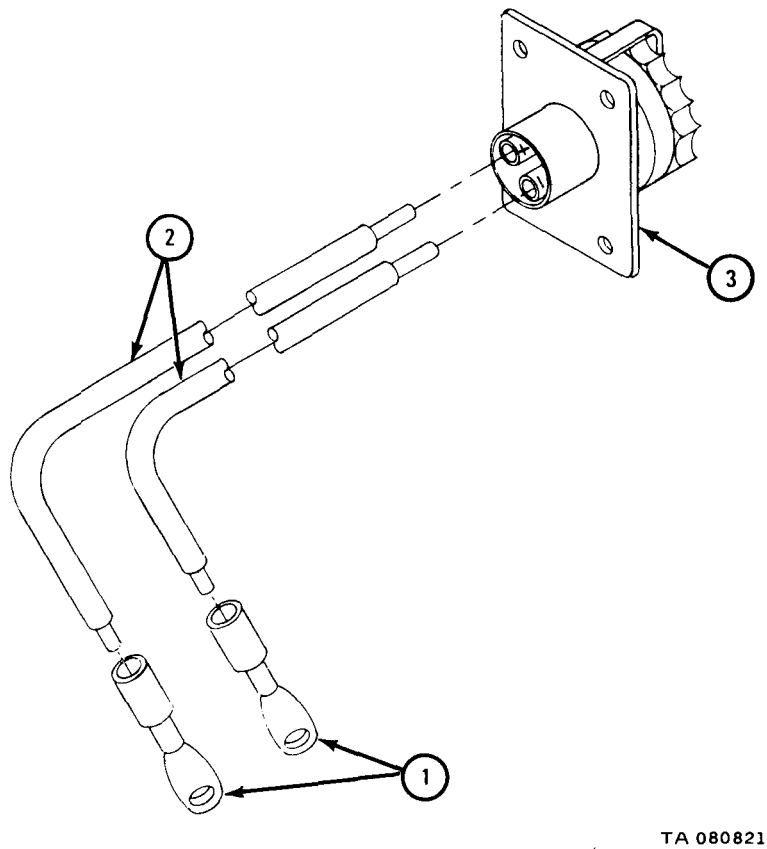


c. Disassembly.

FRAME 1

1. Using pliers, hold two terminal ends (1) and using soldering iron, unsolder and take off terminal ends.
2. Using soldering iron, unsolder and take off two cables (2) from slave receptacle (3).

END OF TASK



d. Inspection and Repair. Check that all parts have no breaks, corrosion or wear. If parts are damaged, get new ones.

e. Assembly.

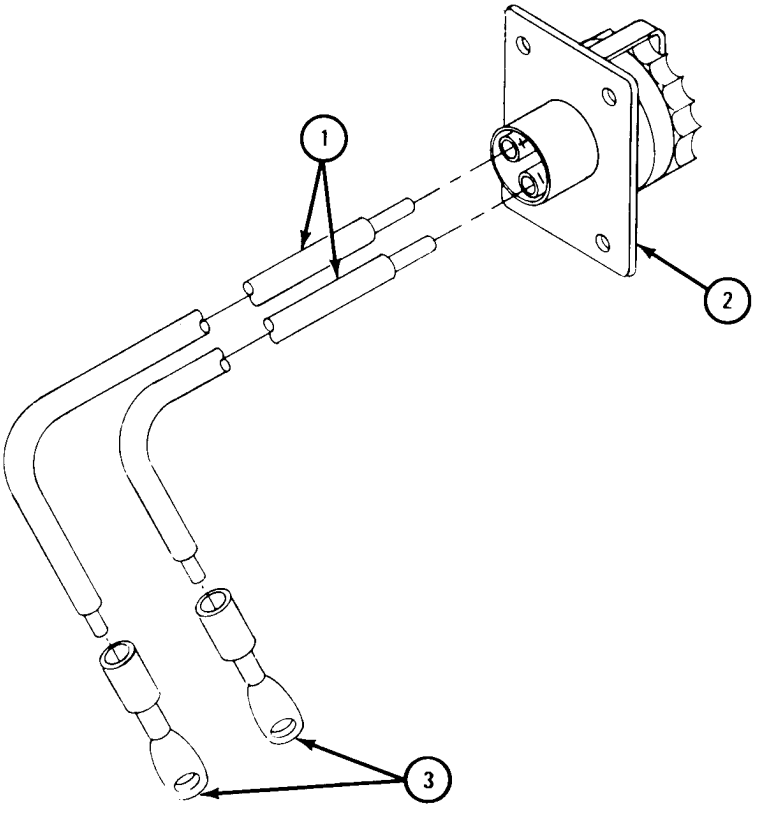
FRAME 1

NOTE

Longer cable goes to terminal marked +.

1. Put two cables (1) into two lugs on slave receptacle (2). Using soldering iron, solder cables in place.
2. Put two terminal ends (3) on two cables (1). Using soldering iron, solder terminal ends in place.

END OF TASK



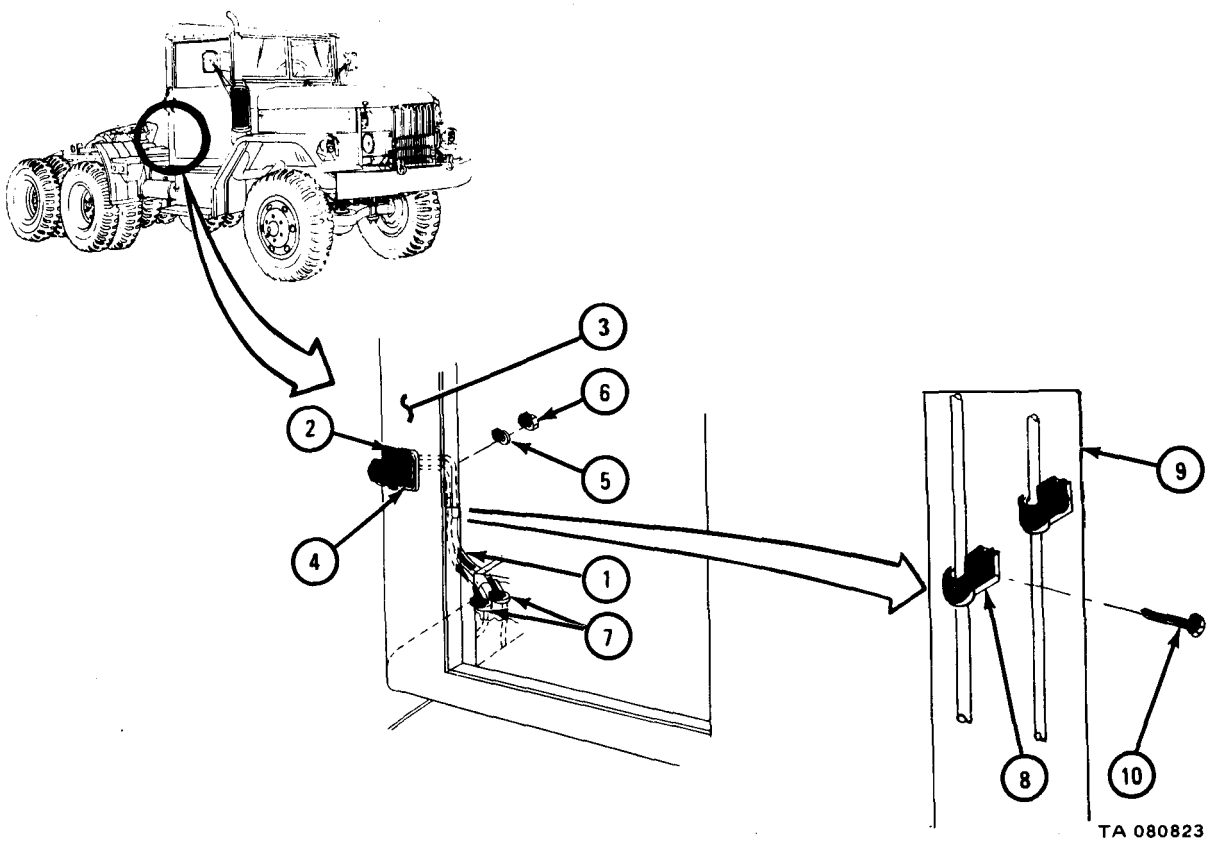
TA 080822

f. Replacement.

FRAME 1

1. Put two cables (1), joined to slave receptacle assembly (2), through hole in cab (3). Aline screw holes in slave receptacle assembly and cab. Using 7/16-inch wrenches, screw in and tighten four capscrews (4), four lockwashers (5), and four nuts (6).
2. Put two grommets (7) in holes on cab floor. Put longer of two cables (1) into grommet closest to door and shorter cable into other grommet.
3. Put two clamps (8) on two cables (1) and line screw holes in clamps with holes on U-channel (9). Using screwdriver, screw in and tighten two screws (10).

GO TO FRAME 2



FRAME 2

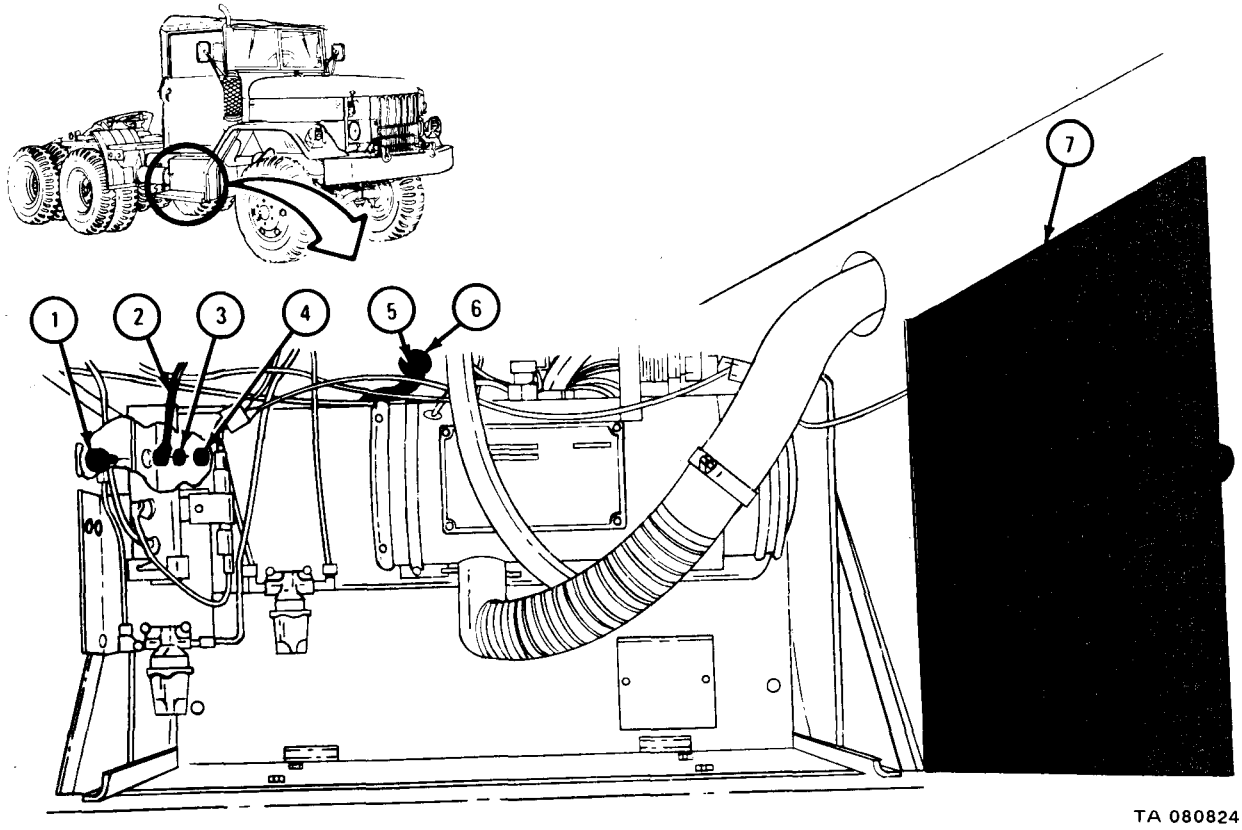
Soldier A 1. Working under truck and using 9/16-inch wrench, hold capscrew (1).

Soldier B 2. Put cable (2) and washer (3) on cap screw (1). Using 9/16-inch wrench, screw on and tighten nut (4).

3. Put positive cable (5) up into grommet (6).

4. Close powerplant heater door (7).

GO TO FRAME 3



FRAME 3

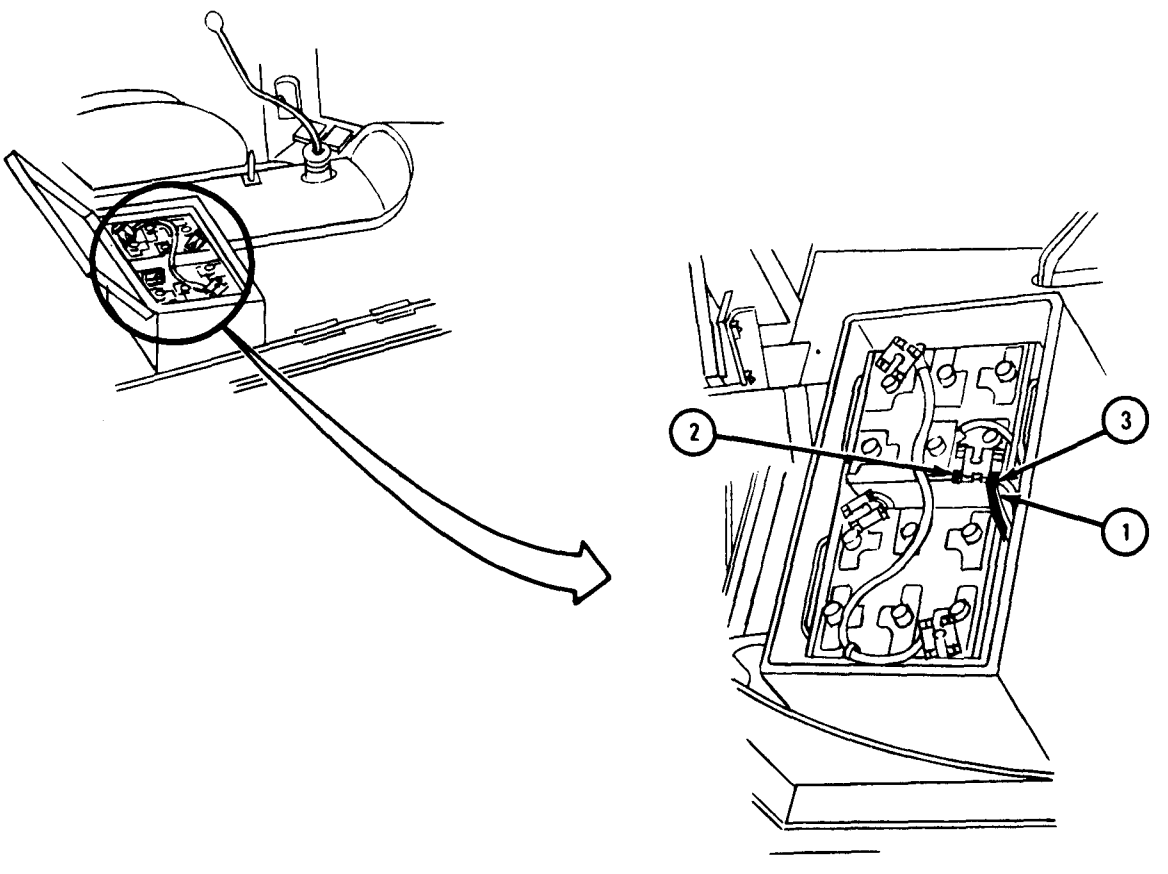
1. Put positive cable (1) on end of capscrew (2).
2. Using 9/16-inch wrenches, hold capscrew (2) and screw on and tighten nut (3).

NOTE

Follow-on Maintenance Action Required:

1. Reconnect battery ground cable. Refer to Part 1, para 7-58.
2. Close battery box cover.

END OF TASK



TA 080825

23-25. VAN BODY PERSONNEL HEATER ASSEMBLY REPAIR (TRUCKS M109A2 AND M109A3).

TOOLS: Flat-tip screwdriver
Open end wrench set, pn GGG-W-636
1/2-gallon container

SUPPLIES: None

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Preliminary Procedures.

(1) Make sure van body personnel heater is off and cool.

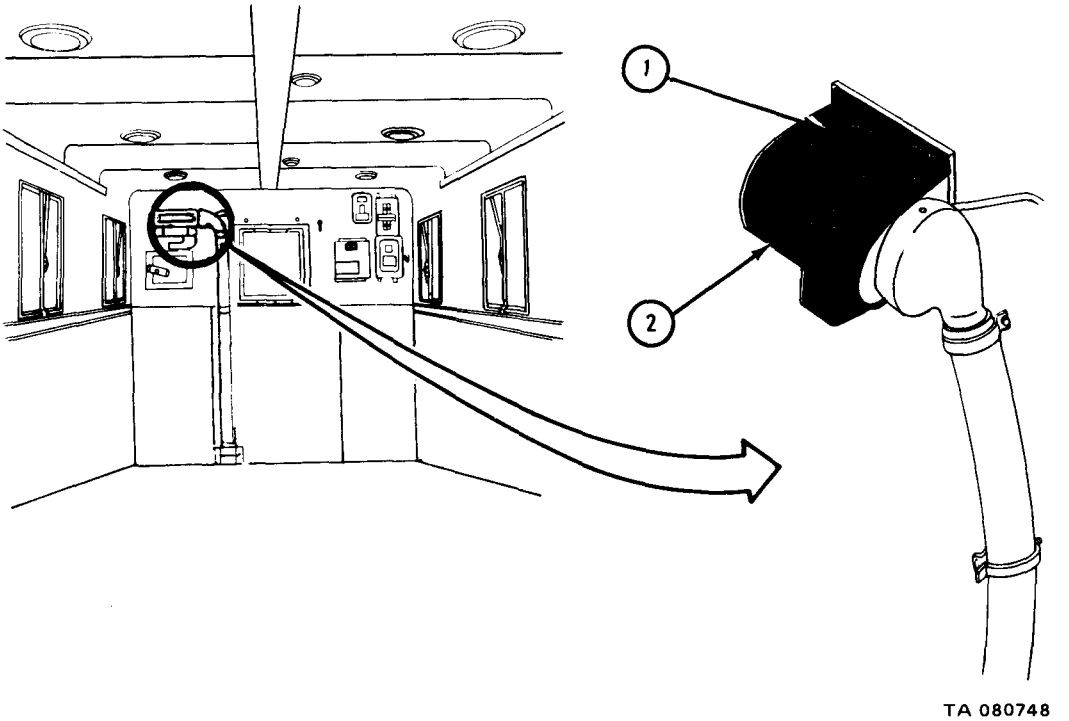
(2) Disconnect battery ground cable. Refer to Part 1, para 7-58.

b. Removal.

FRAME 1

1. Using wrench, unscrew and take off capscrew (1) and cover (2).

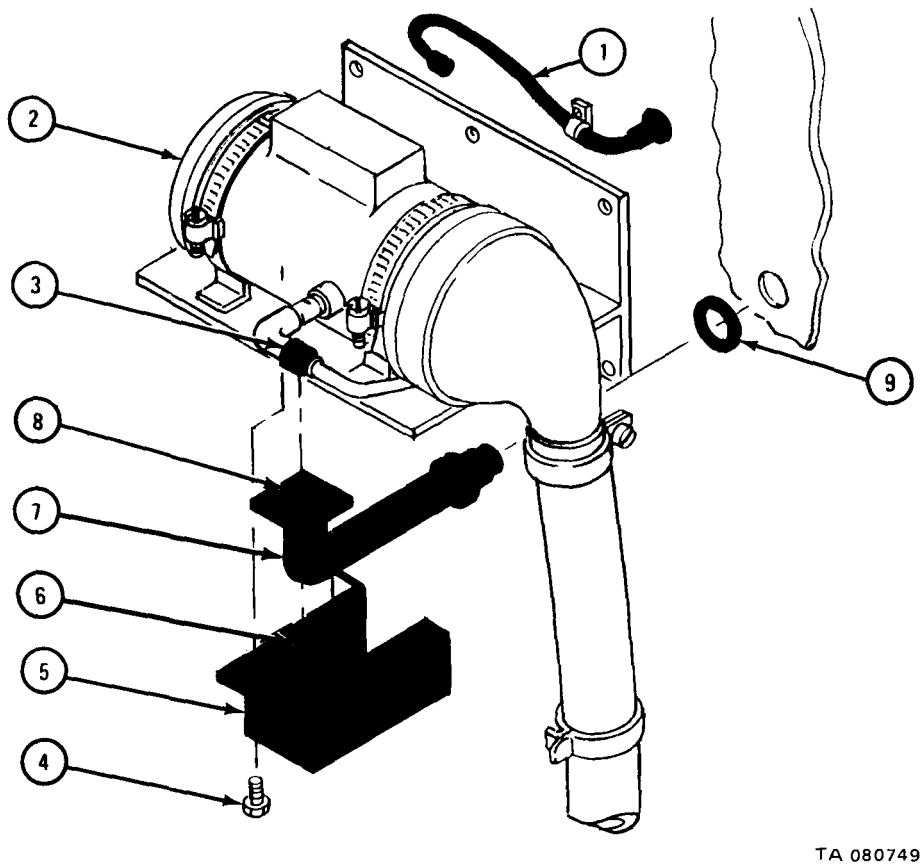
GO TO FRAME 2



FRAME 2

1. Unplug electrical cable (1) from back of heater (2).
2. Using wrenches, unscrew and take off tube nut (3). Use container to catch fuel and put fuel in approved disposal area.
3. Using wrench, unscrew and take off capscrew (4). Take off guard (5).
4. Using wrench, unscrew and take off four capscrews (6). Take off exhaust pipe (7) and gaskets (8 and 9).

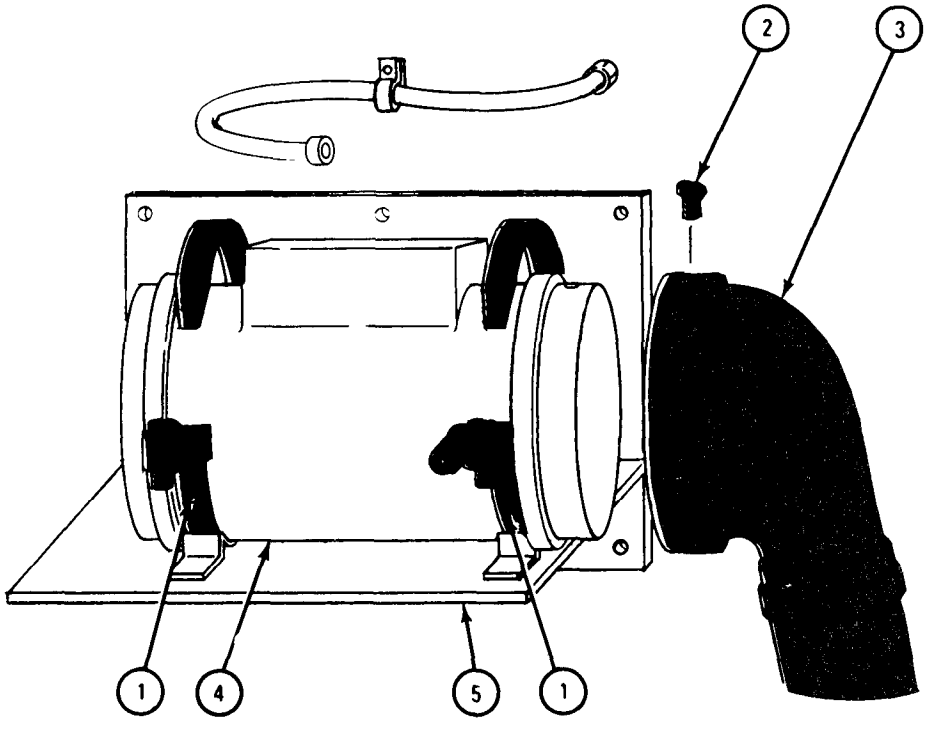
GO TO FRAME 3



FRAME 3

1. Using screwdriver, unscrew and spread open two hose clamps (1).
2. Using wrench, unscrew and take off capscrew (2).
3. Move heater adapter (3) away from heater (4) and take heater off support (5).

END OF TASK



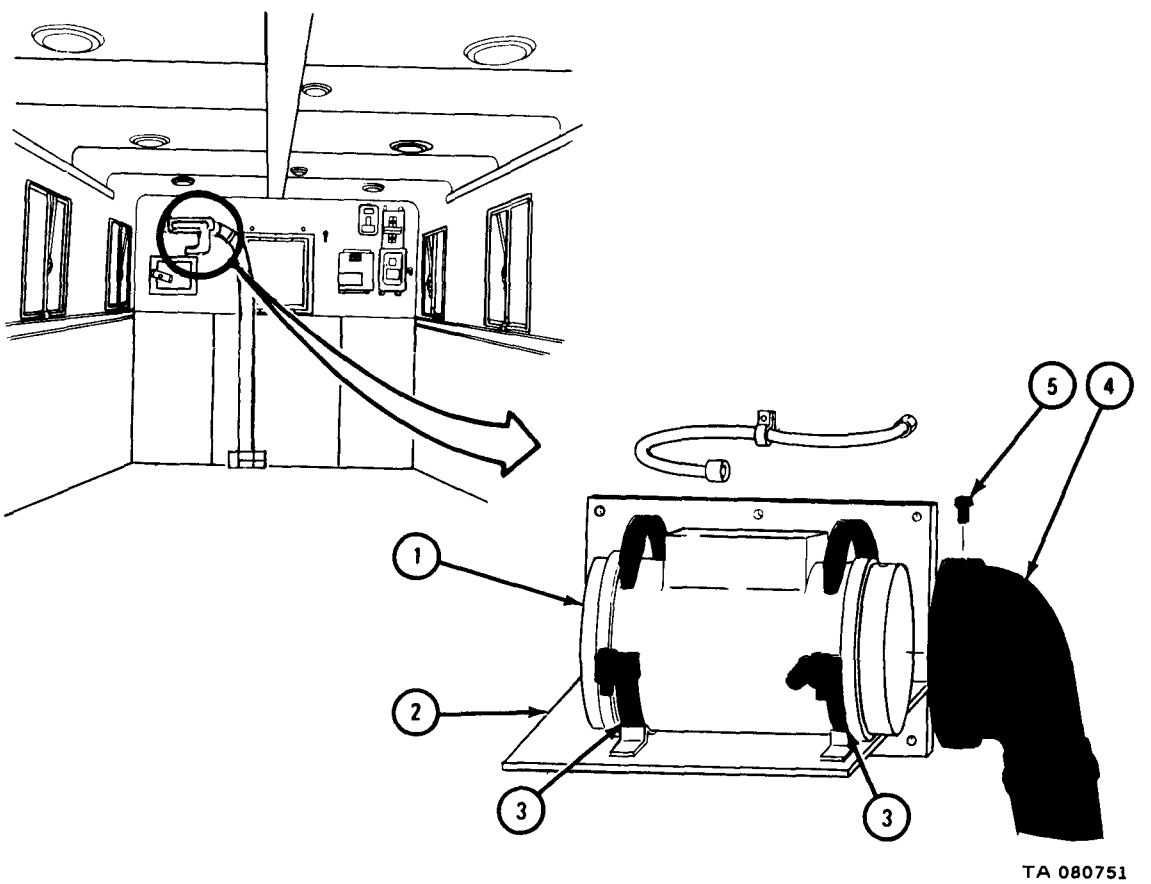
TA 080750

c. Replacement.

FRAME 1

1. Put heater (1) on support (2) between two hose clamps (3) as shown.
2. Put heater adapter (4) on heater (1) and aline screw holes.
3. Using wrench, screw in and tighten cap screw (5).
4. Using screwdriver, screw in and tighten two hose clamps (3).

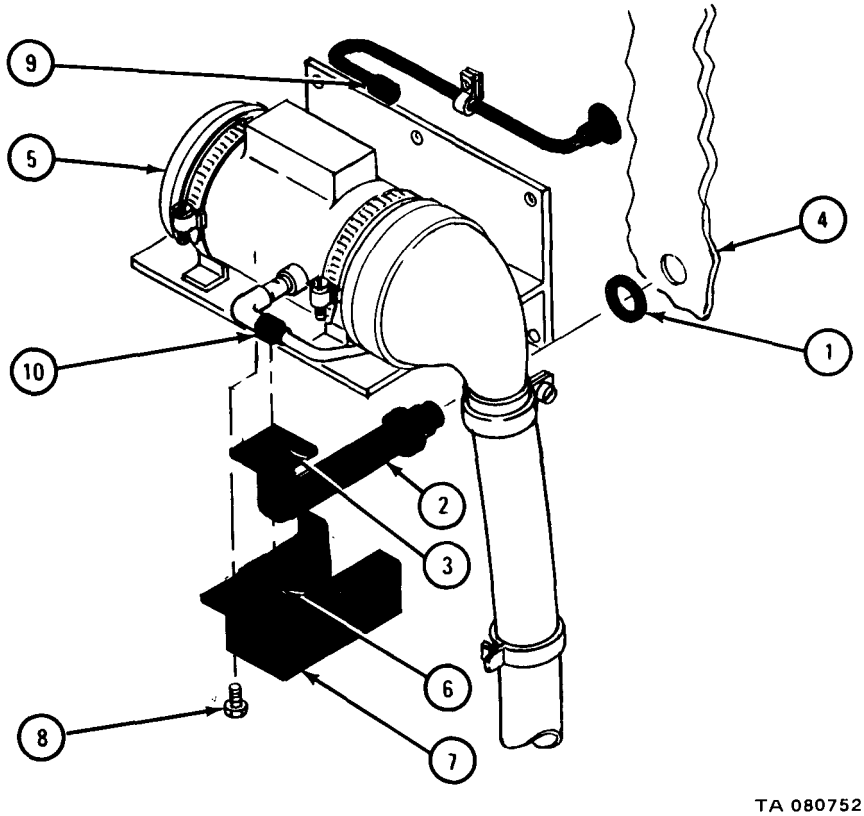
GO TO FRAME 2



FRAME 2

1. Put gasket (1) on end of exhaust pipe (2) and put gasket (3) on top of exhaust pipe. Put one end of exhaust pipe in body (4) and other end in heater (5).
2. Using wrench, screw in and tighten four cap screws (6).
3. Put guard (7) over exhaust pipe (2) and using wrench, screw in and tighten capscrew (8).
4. Plug electrical cable (9) into back of heater (5).
5. Using wrenches, screw on and tighten tube nut (10).

GO TO FRAME 3



TA 080752

FRAME 3

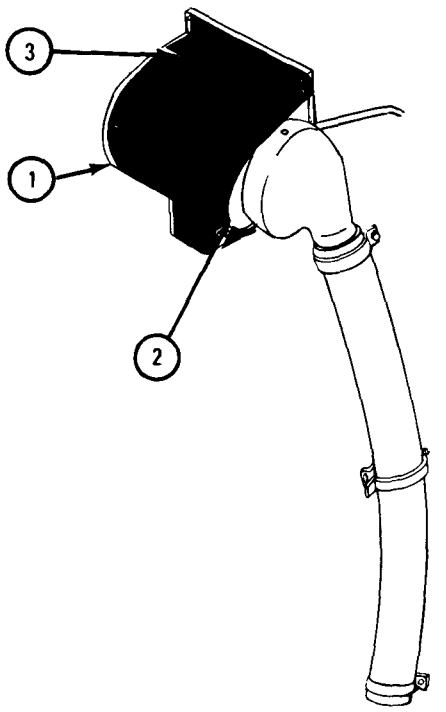
1. Put cover (1) over heater (2) and aline screw holes.
2. Using wrench, screw in and tighten capscrew (3).

NOTE

Follow-on Maintenance Action Required:

Reconnect battery ground cable. Refer to Part 1, para 7-58.

END OF TASK



TA 080753

23-26. VAN BODY PERSONNEL HEATER DUCT REMOVAL AND REPLACEMENT (TRUCKS M109A2 and M109A3).

TOOLS: Open end wrench set, pn GGG-W-636

SUPPLIES: None

PERSONNEL: One

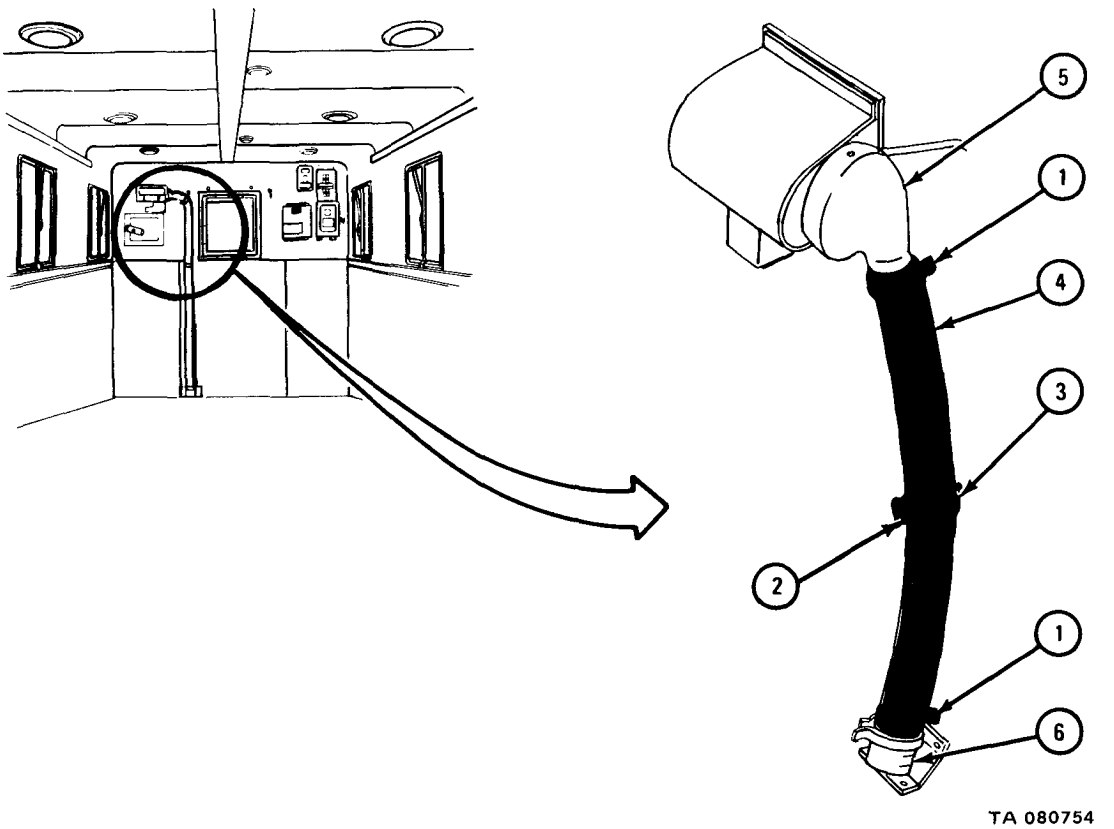
EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Removal.

FRAME 1

1. Using wrenches, loosen two capscrews (1).
2. Using wrench, unscrew and take out capscrew (2). Spread open and take off strap (3).
3. Slide duct (4) off heater adapter (5) and adapter (6).

END OF TASK

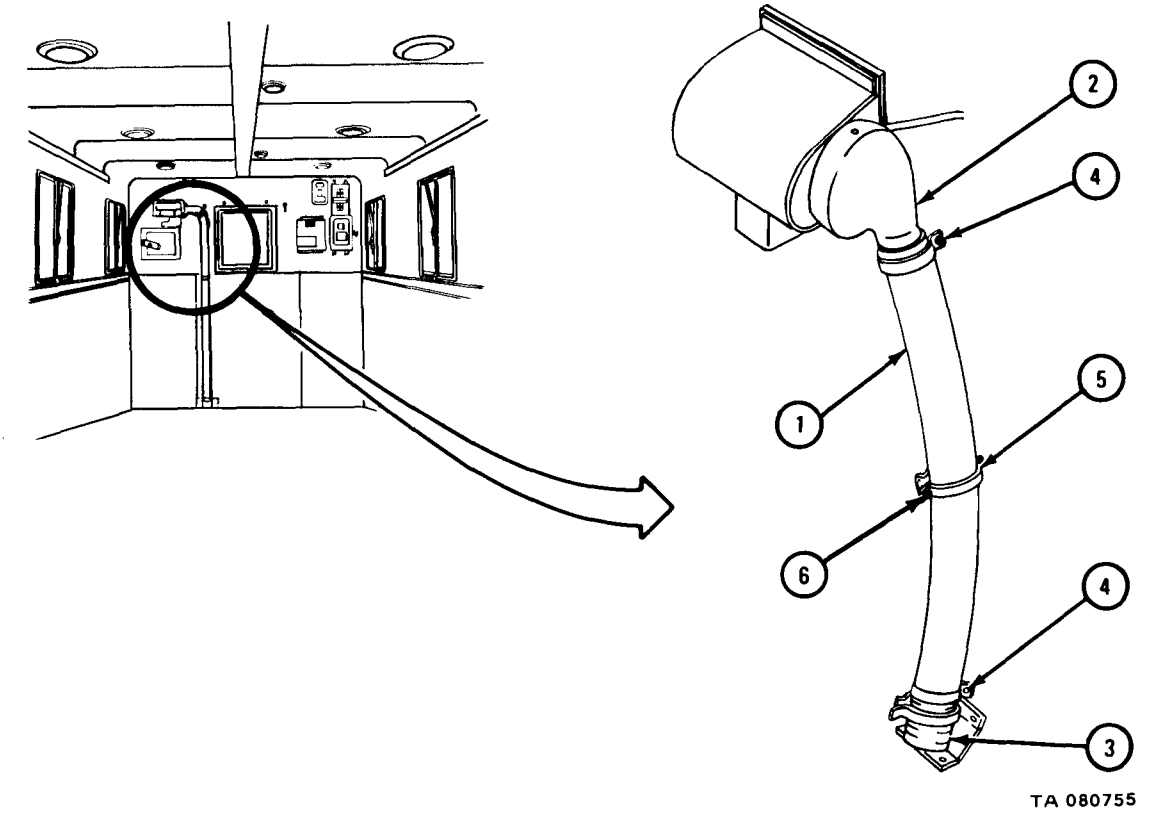


b. Replacement.

FRAME 1

1. Slide duct (1) on heater adapter (2) and adapter (3).
2. Using wrench, tighten two capscrews (4).
3. Put strap (5) over duct (1) and aline screw holes.
4. Using wrench, screw in and tighten capscrew (6).

END OF TASK



23-27. VAN BODY PERSONNEL HEATER SWITCHES REPAIR (TRUCKS M109A2 AND M109A3).

TOOLS: Flat-tip screwdriver

SUPPLIES: Tags

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Preliminary Procedures.

(1) Disconnect battery ground cable. Refer to Part 1, para 7-58.

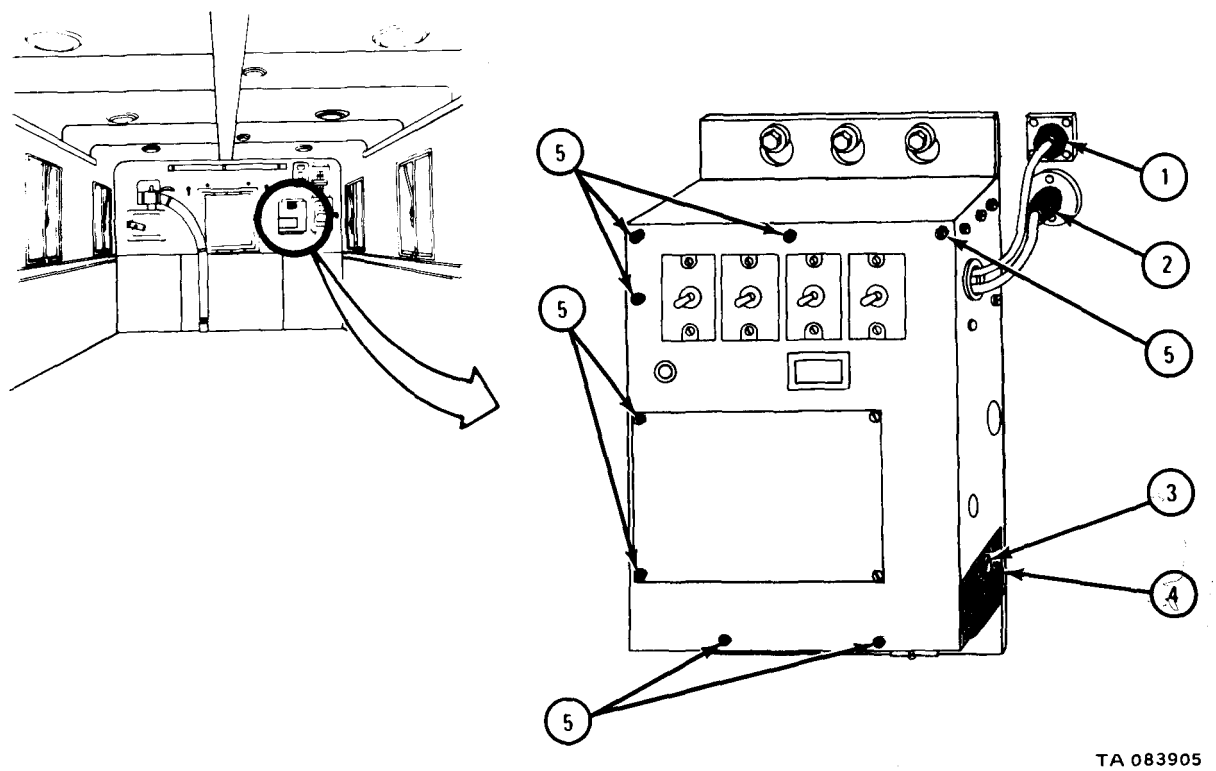
(2) If connected, unplug 115-volt power line from entrance receptacle. Refer to TM 9-2320-209-10.

b. Removal.

FRAME 1

1. Unscrew and unplug electrical connector (1).
2. Unplug electrical plug (2).
3. Using screwdriver, turn screw (3) 1/4 turn to left and open door (4).
4. Using screwdriver, unscrew and take out eight screws (5).

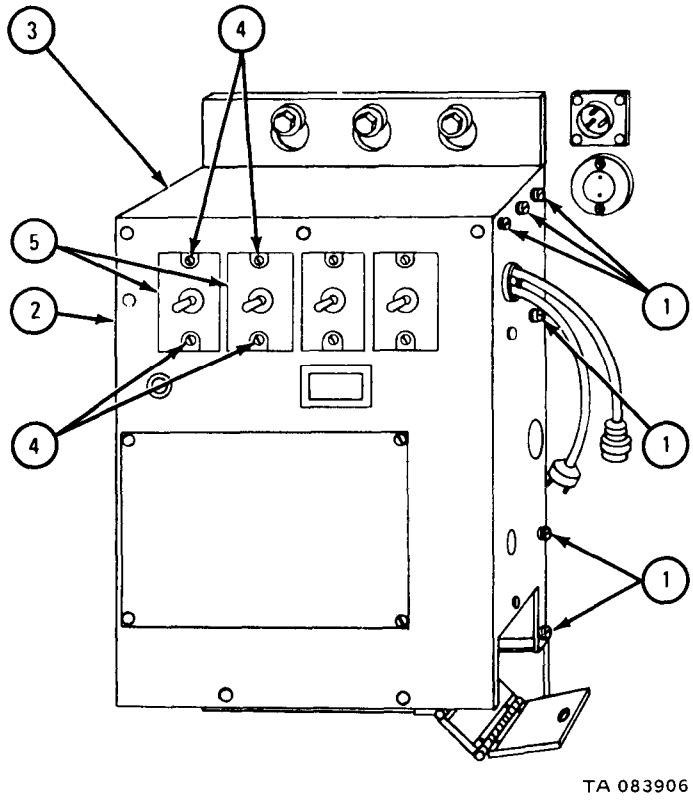
GO TO FRAME 2



FRAME 2

1. Using screwdriver, unscrew and take out six screws (1).
2. Pull front cover (2) off switch box (3) and let front cover hang.
3. Using screwdriver, unscrew and take off four screws (4) and two data plates (5).

GO TO FRAME 3



TA 083906

FRAME 3

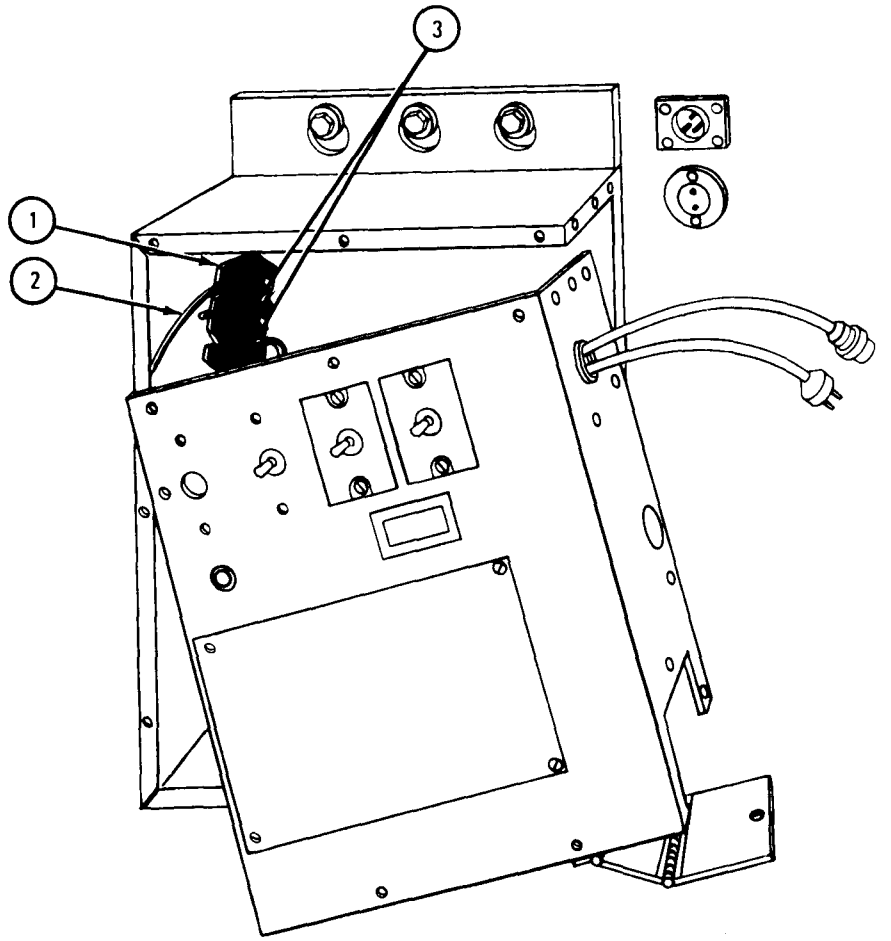
1. Pull out and turn around HI-LO switch (1).

NOTE

Tag two wires (2) so they can be put back in the right place.

2. Using screwdriver, unscrew and take out two screws (3) and HI-LO switch (1).

GO TO FRAME 4



TA 083907

FRAME 4

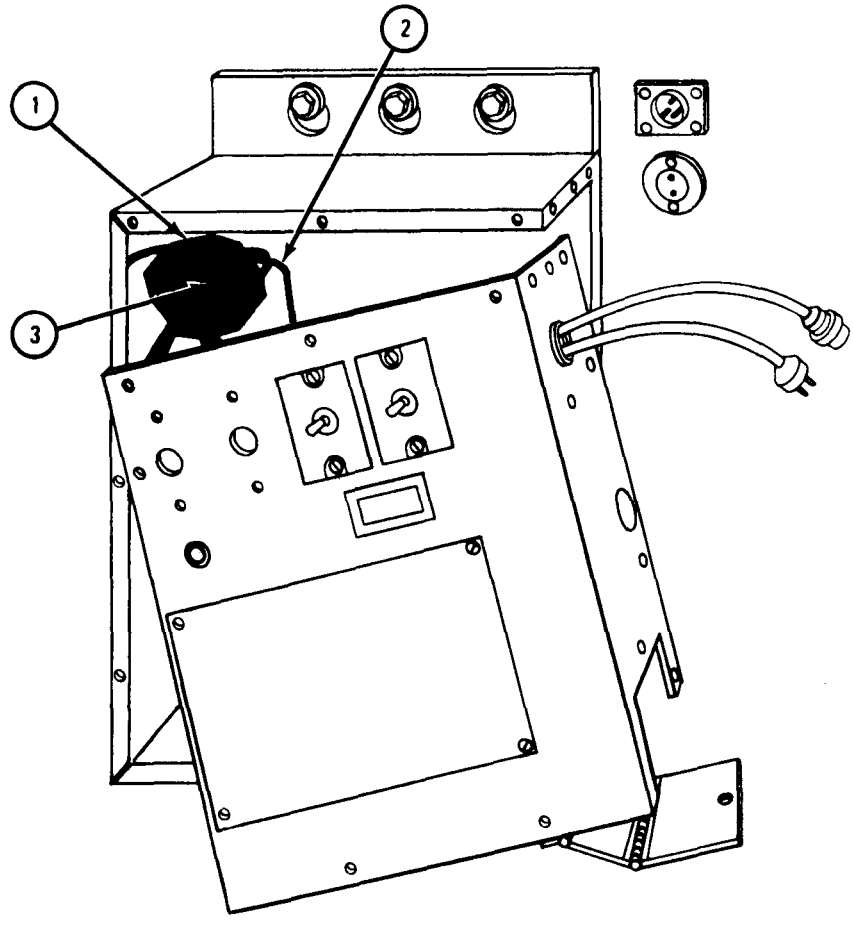
1. Pull out and turn around HEATER switch (1).

NOTE

Tag five wires (2) so they can be put back in the right place.

2. Using screwdriver, unscrew and take out five screws (3) and HEATER switch (1).

END OF TASK



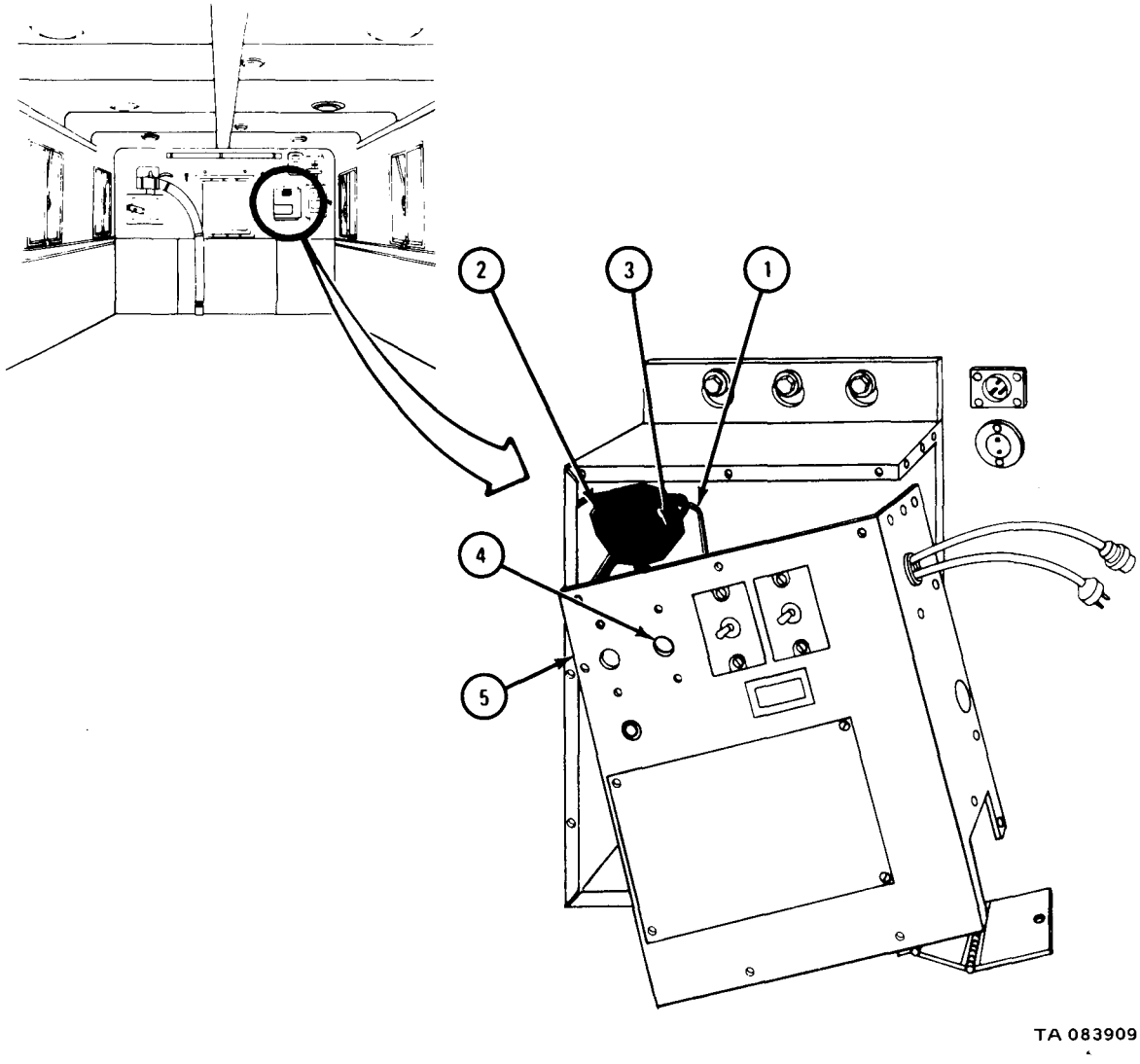
TA 083908

c. Replacement.

FRAME 1

1. Put five wires (1) on HEATER switch (2) as tagged.
2. Using screwdriver, screw in and tighten five screws (3). Take off tags.
3. Turn around HEATER switch (2) and put toggle on HEATER switch through hole (4) in front cover (5).

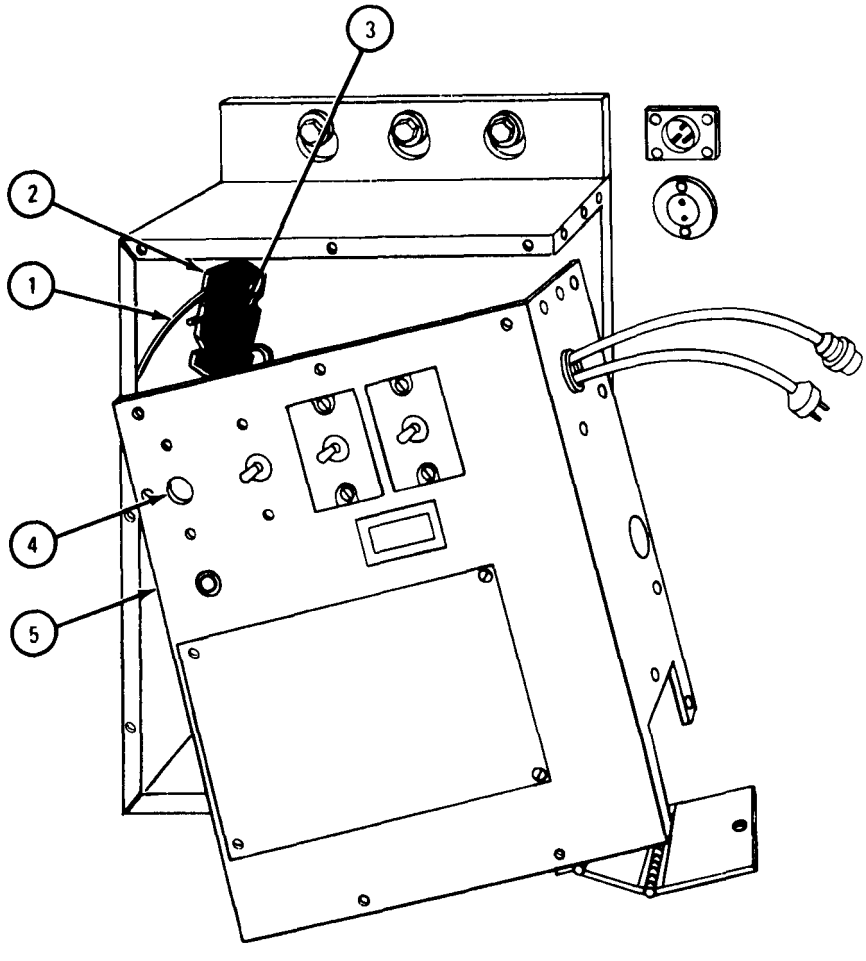
GO TO FRAME 2



FRAME 2

1. Put two wires (1) on HI-LO switch (2) as tagged.
2. Using screwdriver, screw in and tighten two screws (3). Take off tags.
3. Turn around HI-LO switch (2) and put toggle on HI-LO switch through hole (4) in front cover (5).

GO TO FRAME 3

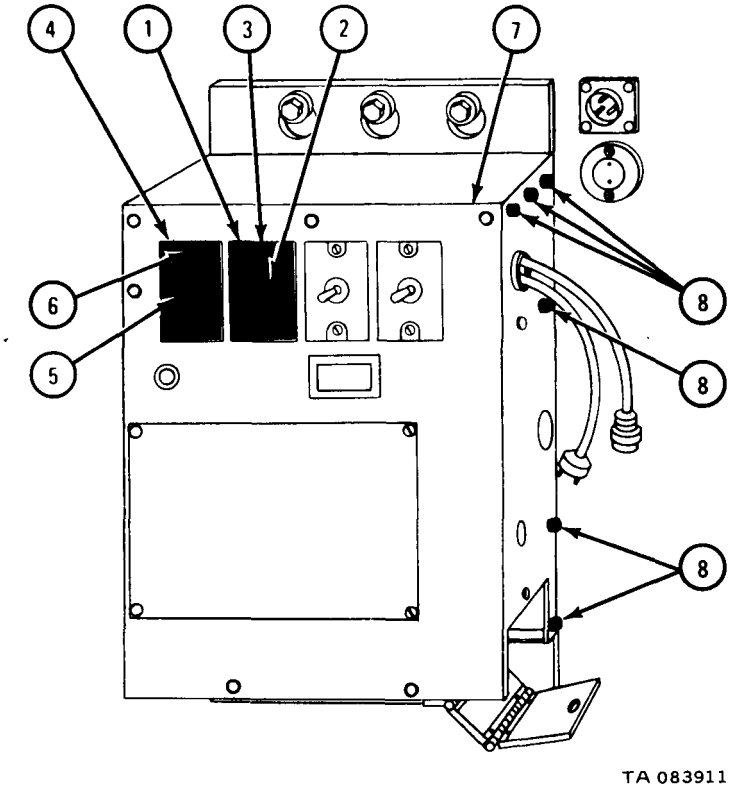


TA 083910

FRAME 3

1. Put HEATER data plate (1) over HEATER switch (2) and screw in two screws (3).
2. Put HI-LO data plate (4) over HI-LO switch (5) and screw in two screws (6).
3. Put front cover (7) in place and aline screw holes.
4. Using screwdriver, screw in and tighten six screws (8).
5. Using screwdriver, tighten two screws (3) and two screws (6).

Go TO FRAME 4



FRAME 4

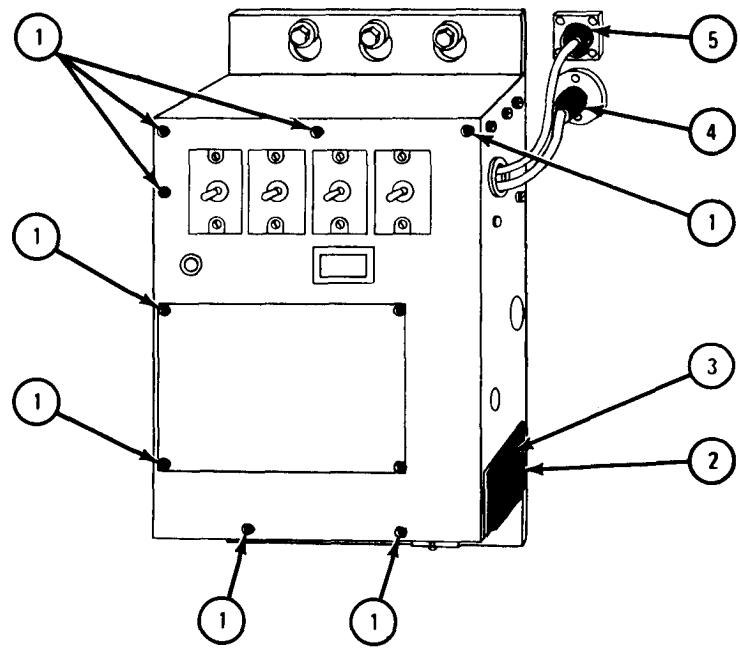
1. Using screwdriver, screw in and tighten eight screws (1).
2. Close door (2). Using screwdriver, turn screw (3) 1/4 turn to right.
3. Plug in electrical plug (4).
4. Plug in and screw on and tighten electrical connector (5).

NOTE

Follow-on Maintenance Action Required:

1. If it was connected, plug in 115-volt power line to entrance receptacle. Refer to TM 9-2320-209-10.
2. Reconnect battery ground cable. Refer to Part 1, para 7-58.

END OF TASK



TA 083912

Section III. DEEP WATER FORDING KIT

23-28. DEEP WATER FORDING KIT EXHAUST EXTENSION REMOVAL, REPAIR, AND REPLACEMENT.

TOOLS: Open end wrench set, pn GGG-W-636

SUPPLIES: Lubricating oil, ICE, OE/HDO 30, MIL-L-2104

PERSONNEL: One

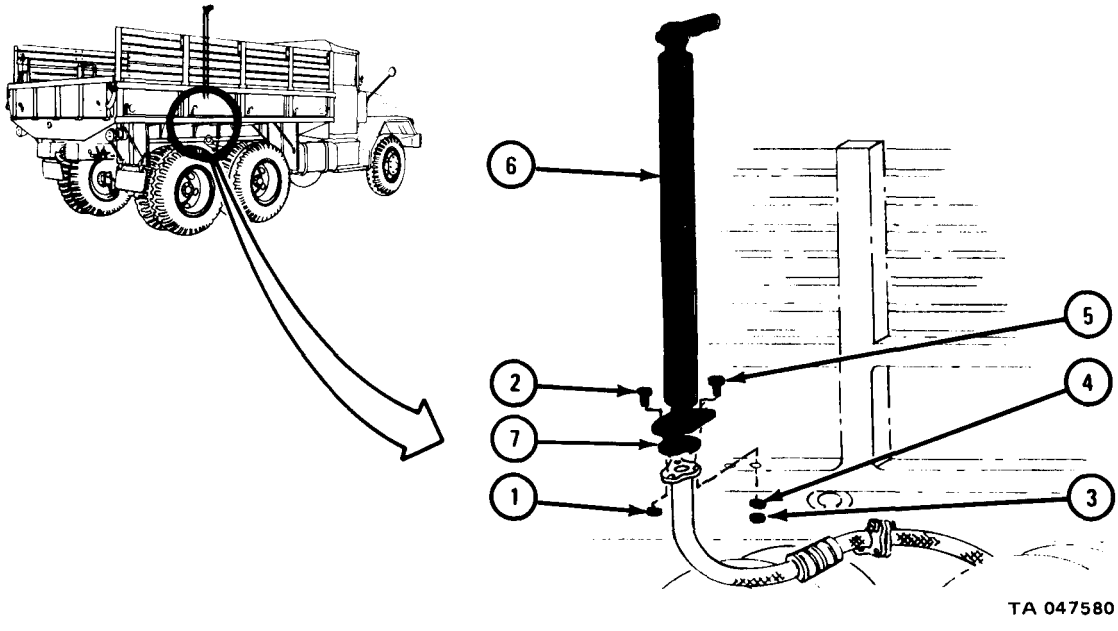
EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Removal.

FRAME 1

1. Using wrenches, unscrew and take off three nuts (1). Take out screws (2).
2. Using wrenches, unscrew and take off two nuts (3) and flat washers (4). Take out screws (5) and lift off exhaust extension (6).
3. Take off and throw away gasket (7).

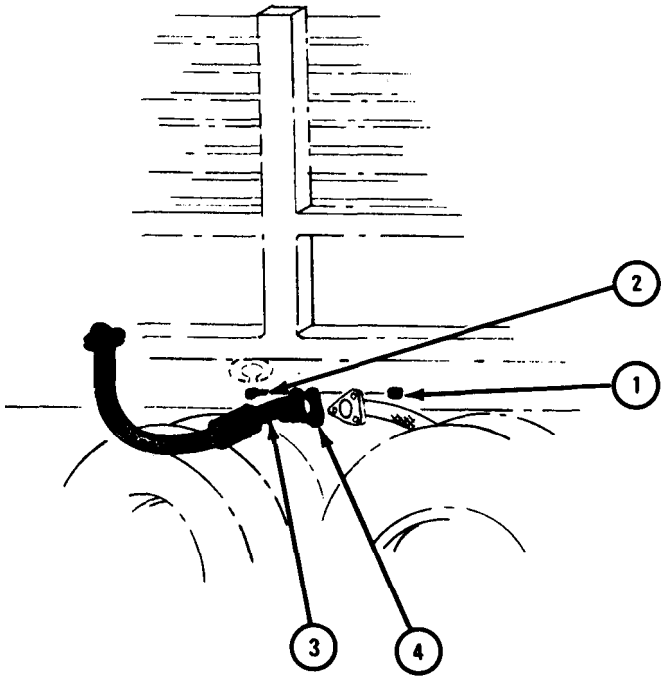
GO TO FRAME 2



FRAME 2

1. Using wrenches, unscrew and take off three nuts (1).
2. Take out three screws (2) and take off lower exhaust extension (3).
3. Take off and throw away gasket (4).

END OF TASK



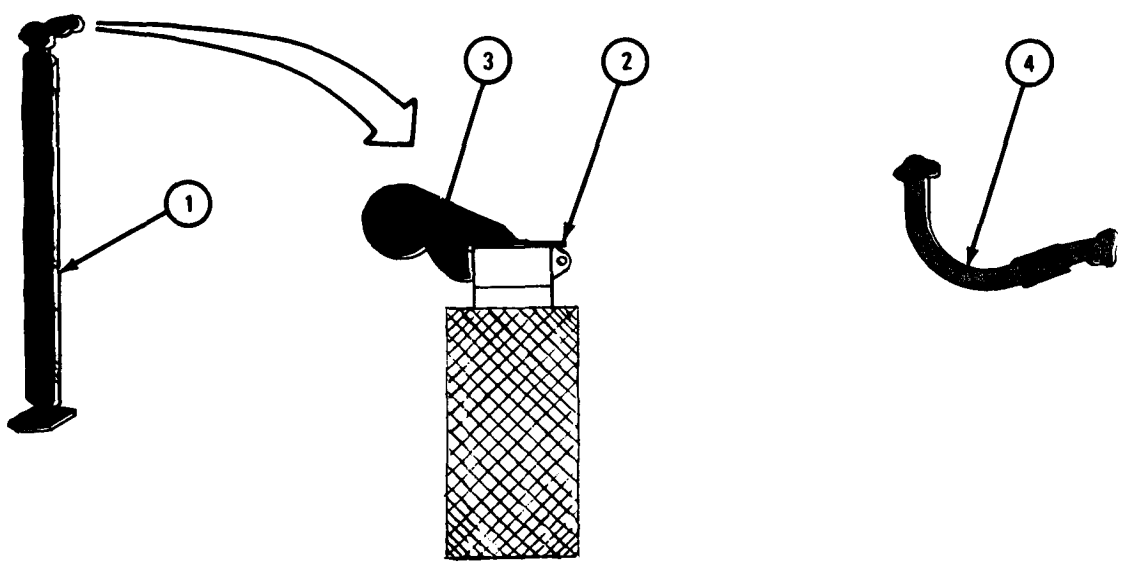
TA 047581

b. Repair.

FRAME 1

1. Check that upper exhaust extension (1) has no cracks, dents or holes. If upper exhaust extension is damaged, get a new one.
2. Check that weather cap (2) opens and closes freely. Put lubricating oil on hinge (3) if needed.
3. Check that lower exhaust extension (4) has no cracks, dents or holes. If lower exhaust extension is damaged, get a new one.

END OF TASK



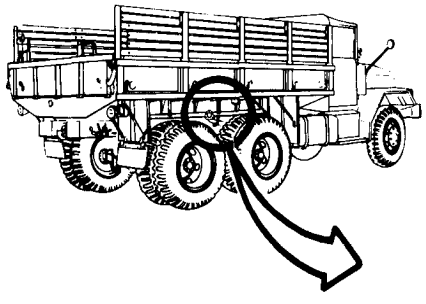
TA 047582

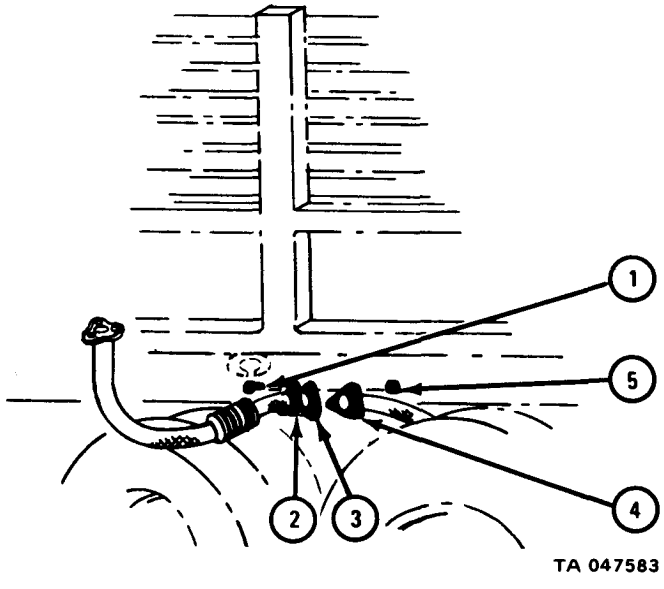
c. Replacement.

FRAME 1

1. Put three screws (1) through holes in flange (2), gasket (3), and flange (4) as shown.
2. Using wrenches, screw on and tighten three nuts (5).

GO TO FRAME 2

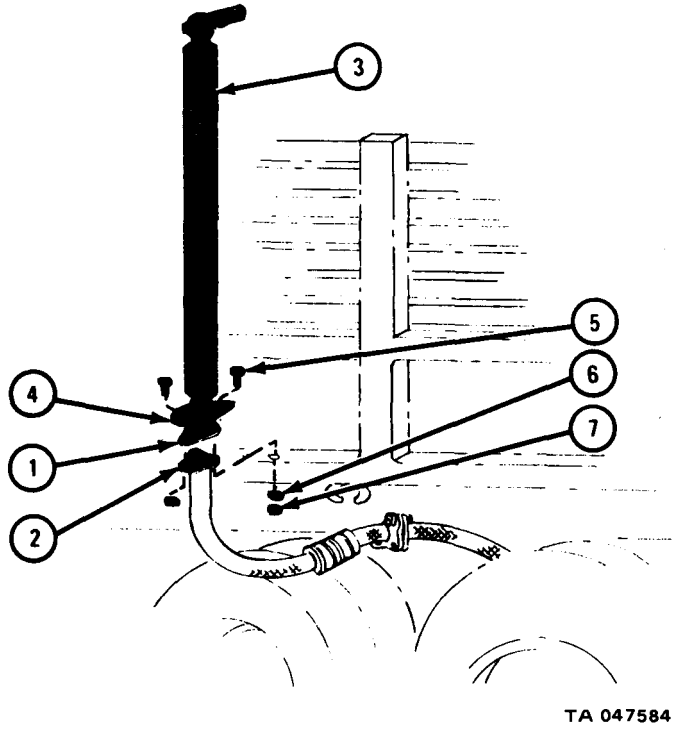




FRAME 2

1. Place gasket (1) on flange (2).
2. Place exhaust extension (3) on flange (2) so that holes in straight side of plate (4) aline with holes in truck body.
3. Put five screws (5) in place.
4. Put on washers (6). Using wrenches, screw on and tighten five nuts (7).

END OF TASK



TA 047584

23-29. DEEP WATER FORDING KIT TRANSMISSION BREATHER REMOVAL, REPAIR, AND REPLACEMENT.

TOOLS: 7/16-inch open end wrench

SUPPLIES: Solvent, dry cleaning, type II (SD-2), Fed. Spec P-D-680
Rag
Lubricating oil, ICE, OE/HDO 10, MIL-L-2104

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

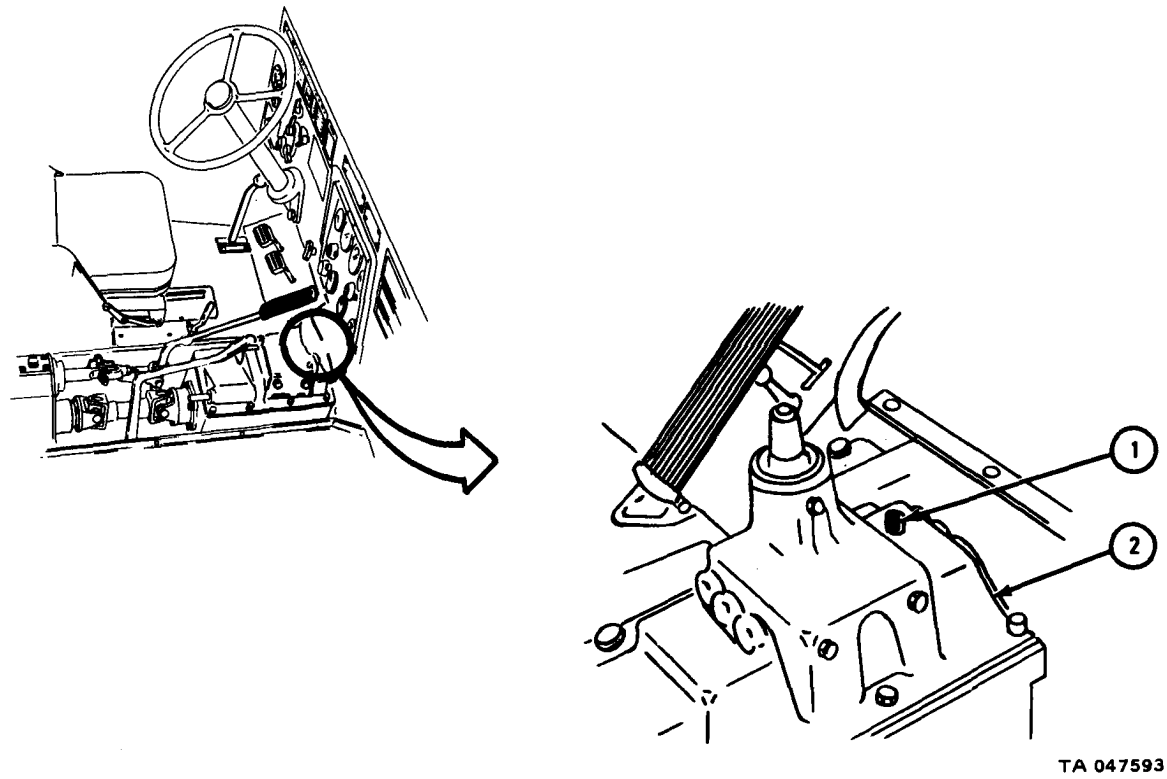
a. Preliminary Procedure. Remove intermediate tunnel. Refer to Part 3, para 18-5.

b. Removal.

FRAME 1

1. Using 7/16-inch wrench, unscrew and take out transmission breather (1) from transmission housing cover (2).

END OF TASK



c. Repair.

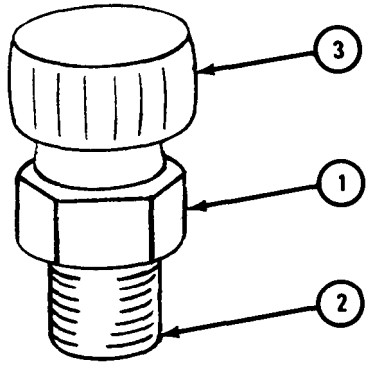
FRAME 1

WARNING

Dry cleaning solvent is flammable. Do not use near an open flame. Keep a fire extinguisher nearby when solvent is used. Use only in well-ventilated places. Failure to do this may result in injury to personnel and damage to equipment.

1. Soak transmission breather (1) in solvent.
2. Using wire brush, brush all dirt from transmission breather (1).
3. Clean passage (2) and make sure valve cap (3) moves freely.
4. Use clean lubricating oil to lubricate transmission breather (1).

END OF TASK



TA 047594

d. Replacement.

FRAME 1

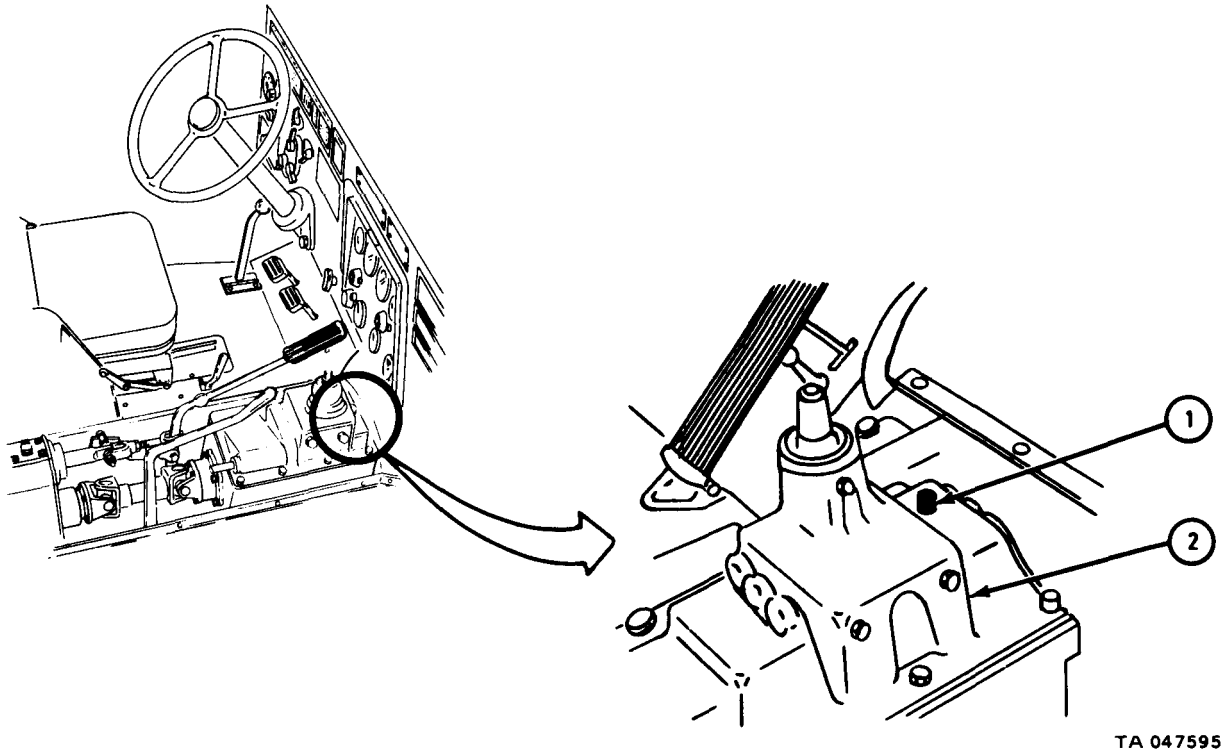
1. Using rag, wipe surface clean around mounting hole for transmission breather (1) in transmission housing cover (2).
2. Using 7/16-inch wrench, screw in transmission breather (1).

NOTE

Follow-on Maintenance Action Required:

Replace intermediate tunnel. Refer to Part 3, para 18-5.

END OF TASK



23-30. DEEP WATER FORDING KIT CONTROL VALVE REMOVAL, REPAIR, AND REPLACEMENT.

NOTE

There are two deep water fording kit control valves, one for trucks with front wheel drive lever, and the other for trucks without front wheel drive lever. This procedure shows both models.

TOOLS: Open end wrench set, pn GGG-W-636
Cross-tip screwdriver (Phillips type)
Sockethead screw key set, pn GGG-K-275 (Allen wrenches or equivalent)

SUPPLIES: Tags

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

a. Preliminary Procedure. Vent air system pressure. Refer to Part 2, para 13-20.

b. Removal.

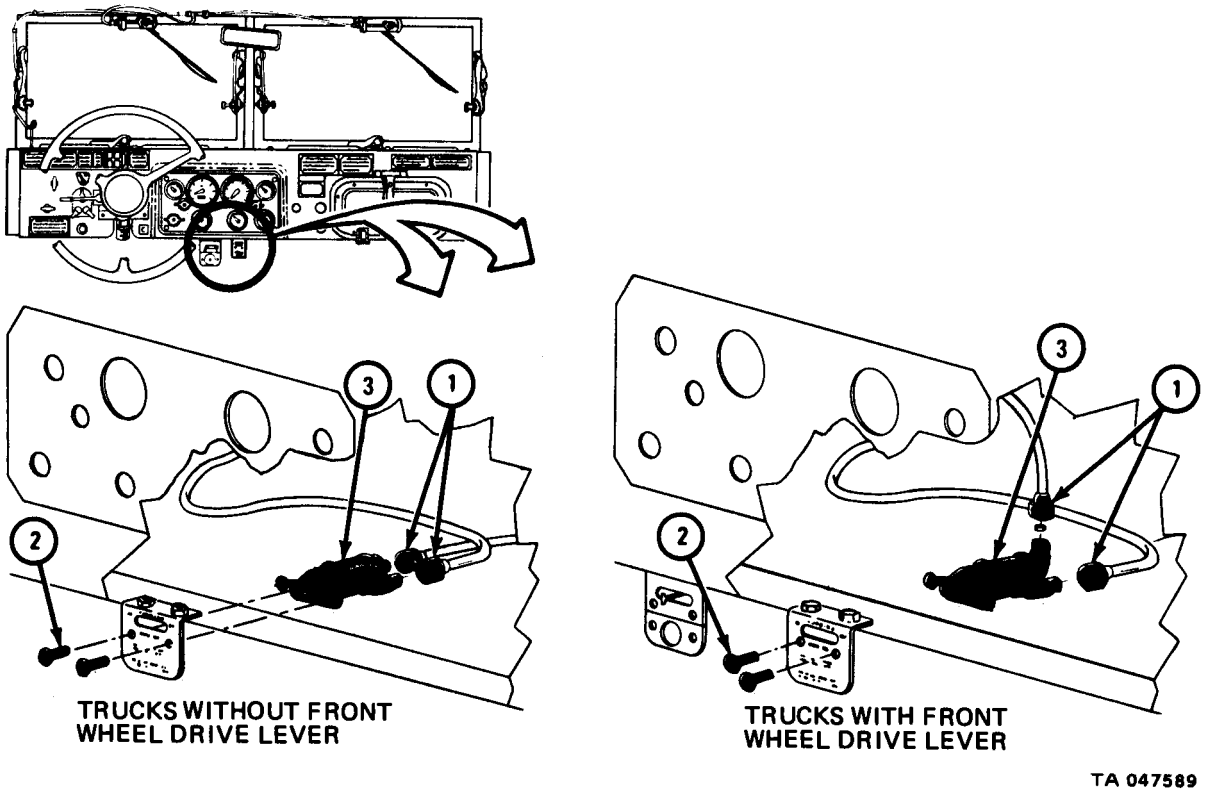
NOTE

Tag air lines before taking them off to be sure they are put back in the same place.

FRAME 1

1. Using wrench, unscrew and take off two coupling nuts (1).
2. Using screwdriver, unscrew and take out two screws (2).
3. Take out control valve (3).

END OF TASK

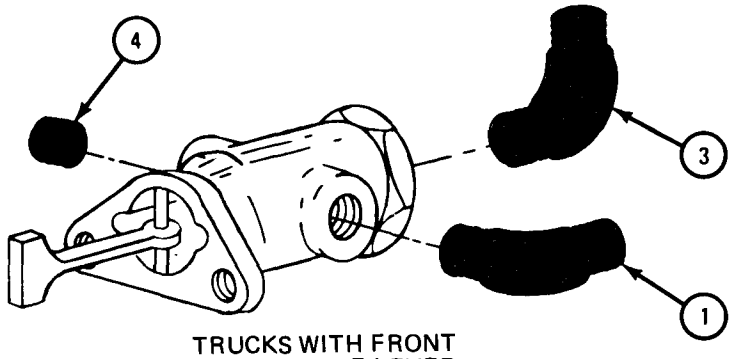


c. Repair.

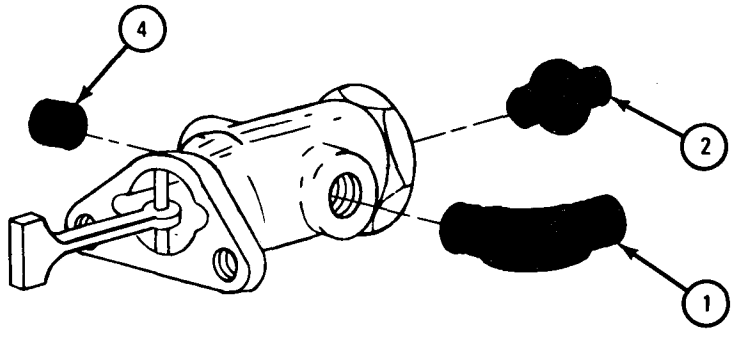
FRAME 1

1. Using wrench, unscrew and take out elbow (1).
2. Using wrench, unscrew and take out reducer pipe (2) or elbow (3).
3. Using allen wrench, unscrew and take out pipe plug (4).
4. Check that all parts have no damage or wear. If part is damaged, get a new one.

GO TO FRAME 2



TRUCKS WITH FRONT WHEEL DRIVE LEVER



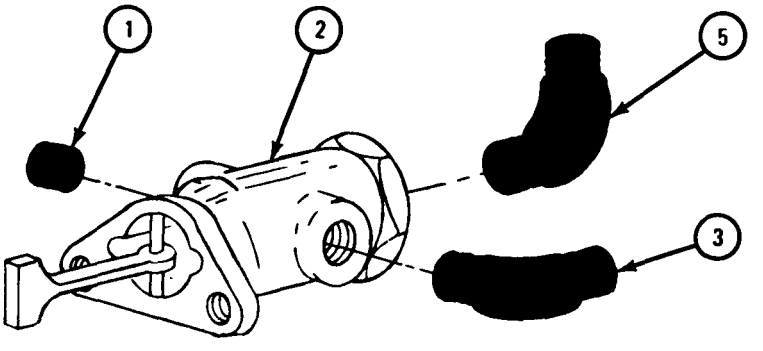
TRUCKS WITHOUT FRONT WHEEL DRIVE LEVER

TA 047590

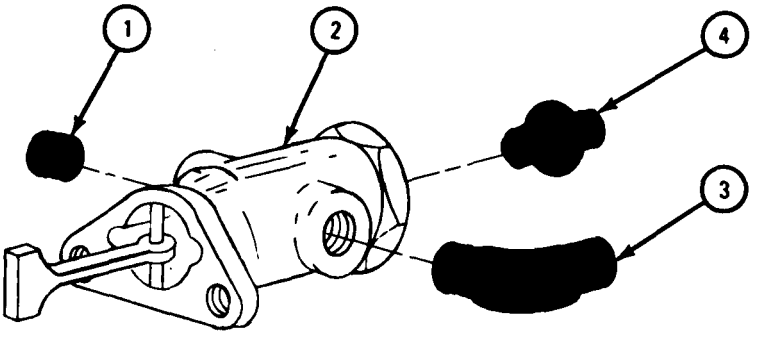
FRAME 2

1. Using allen wrench, screw in and tighten pipe plug (1) in control valve (2).
2. Using wrench, screw in and tighten elbow (3) as shown.
3. Using wrench, screw in and tighten reducer pipe (4) or elbow (5) as shown.

END OF TASK



TRUCKS WITH FRONT WHEEL DRIVE LEVER



TRUCKS WITHOUT FRONT WHEEL DRIVE LEVER

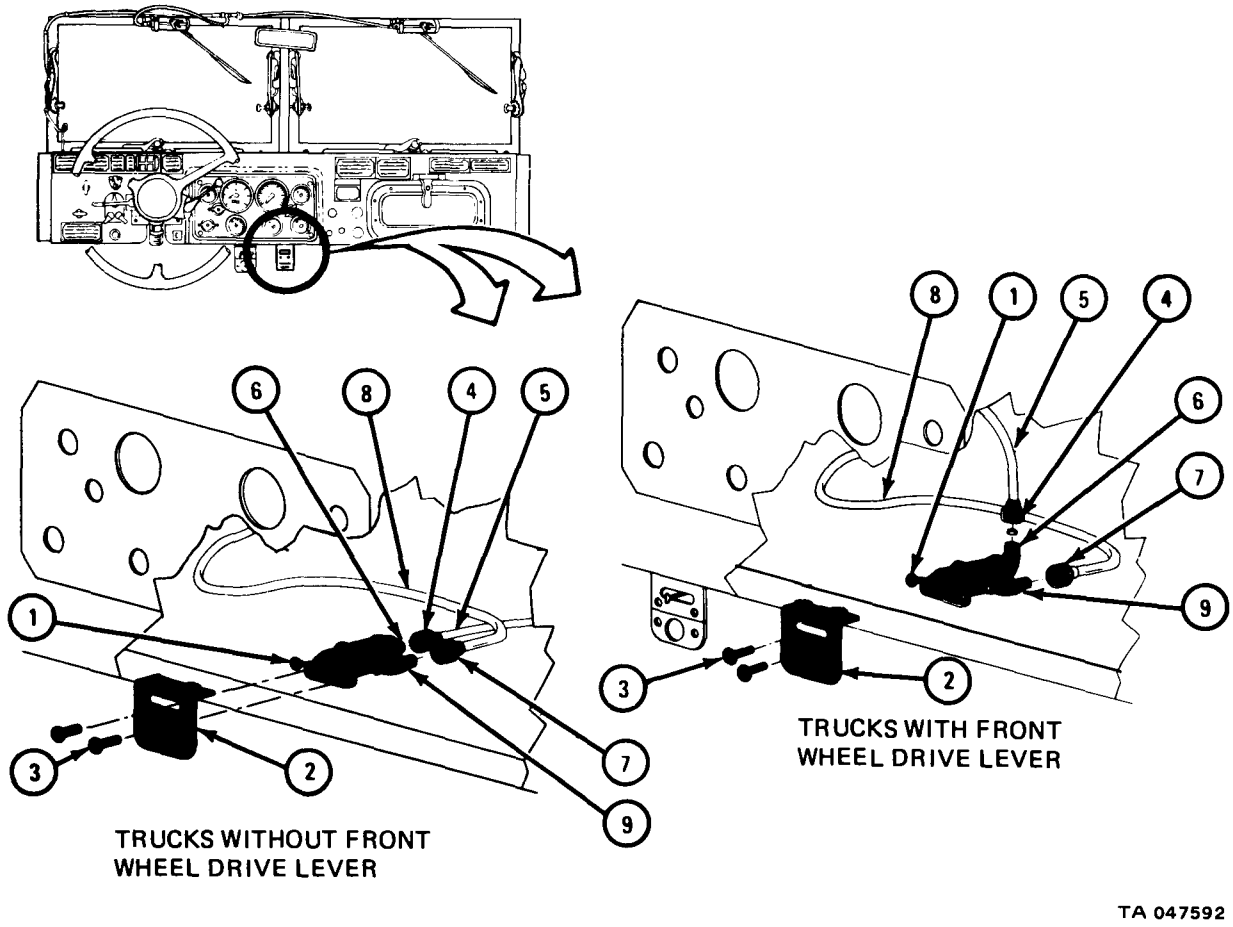
TA 047591

d. Replacement.

FRAME 1

1. Put control valve lever (1) through slot in bracket (2). Using screwdriver, screw in and tighten two screws (3).
2. Using wrench, screw in and tighten coupling nut (4) on hose (5) onto elbow or reducer (6) as tagged. Take off tag.
3. Using wrench, screw in and tighten coupling nut (7) on hose (8) onto elbow (9) as tagged. Take off tag.

END OF TASK



23-31. DEEP WATER FORDING KIT PRESSURIZATION VALVE HAND CONTROL ASSEMBLY REMOVAL AND REPLACEMENT.

TOOLS: Flat-tip screwdriver
Open end wrench set, pn GGG-W-636

SUPPLIES: None

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

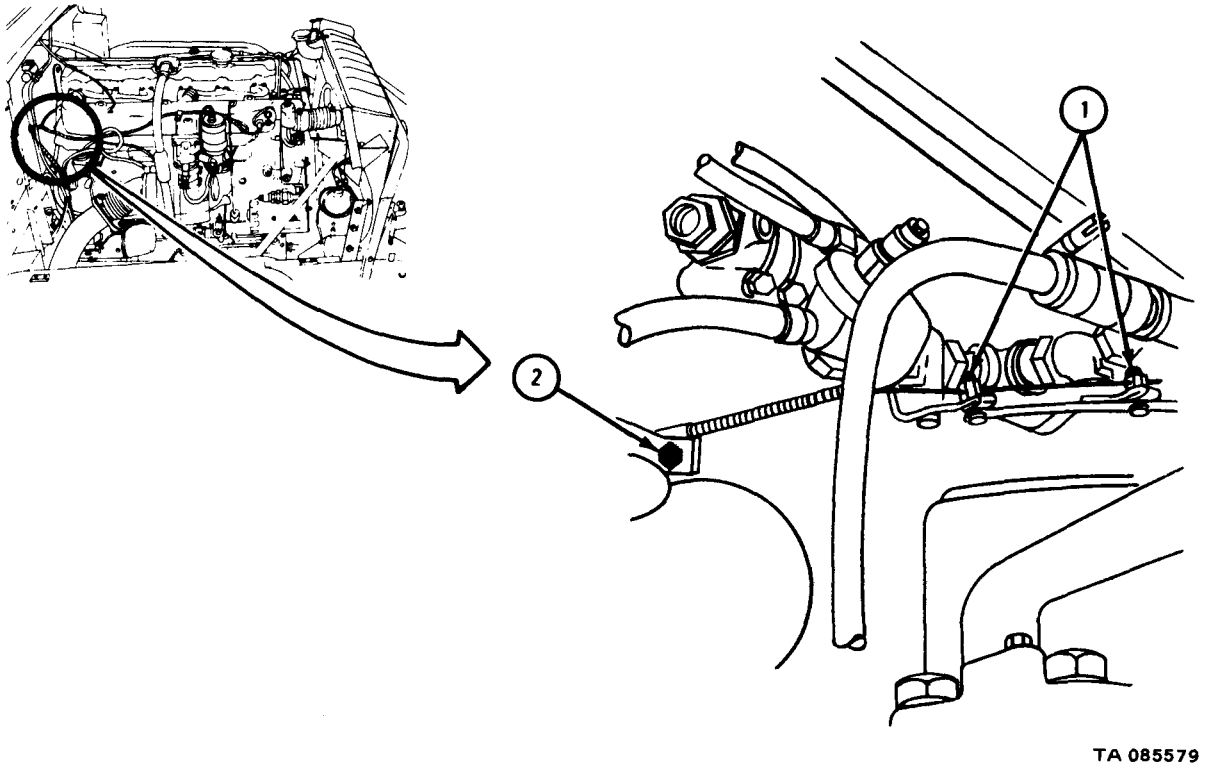
a. Preliminary Procedure. Open hood. Refer to TM 9-2320-209-10.

b. Removal.

FRAME 1

1. Using screwdriver, loosen two setscrews (1).
2. Using wrenches, loosen capscrew and nut (2).

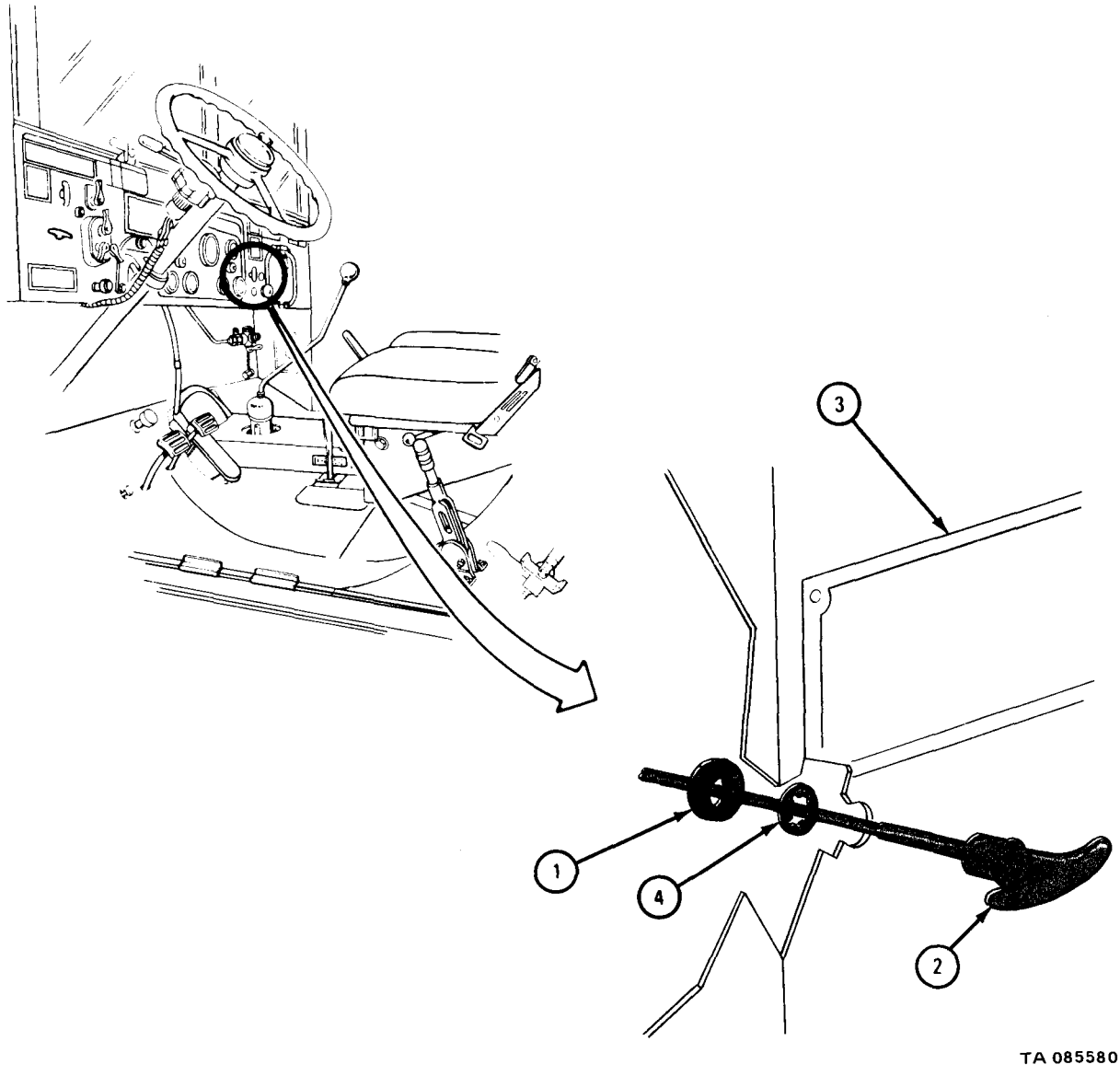
GO TO FRAME 2



FRAME 2

1. Using wrench, unscrew nut (1).
2. Pull pressurization valve hand control assembly (2) out of instrument panel (3) and take off nut (1) and washer (4).

END OF TASK

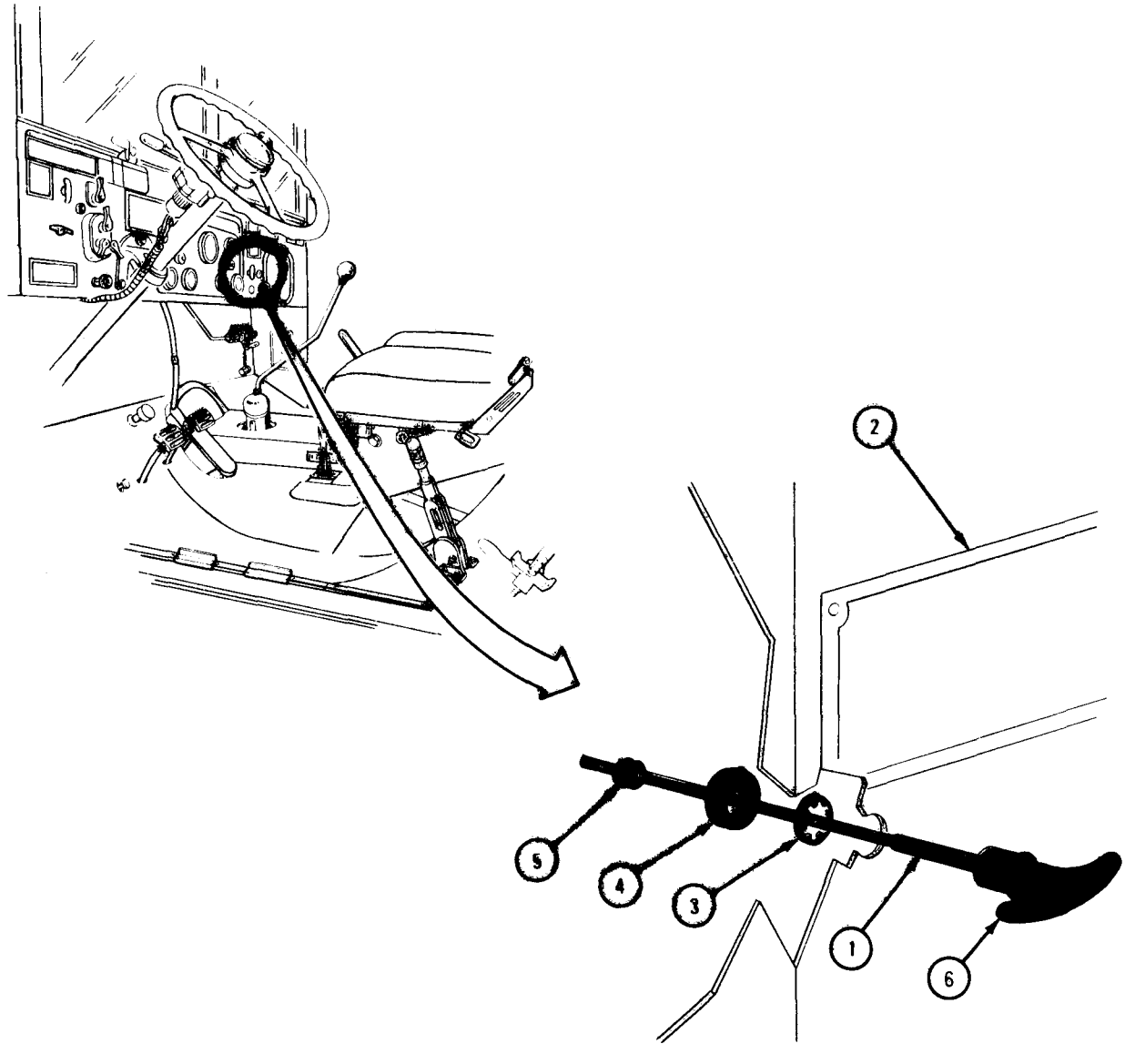


c. Replacement.

FRAME 1

1. Put pressurization valve hand control assembly (1) through hole in instrument panel (2), washer (3), nut (4), and grommet (5).
2. Using wrench, screw on and tighten nut (4).
3. Push knob (6) all the way in.

GO TO FRAME 2



FRAME 2

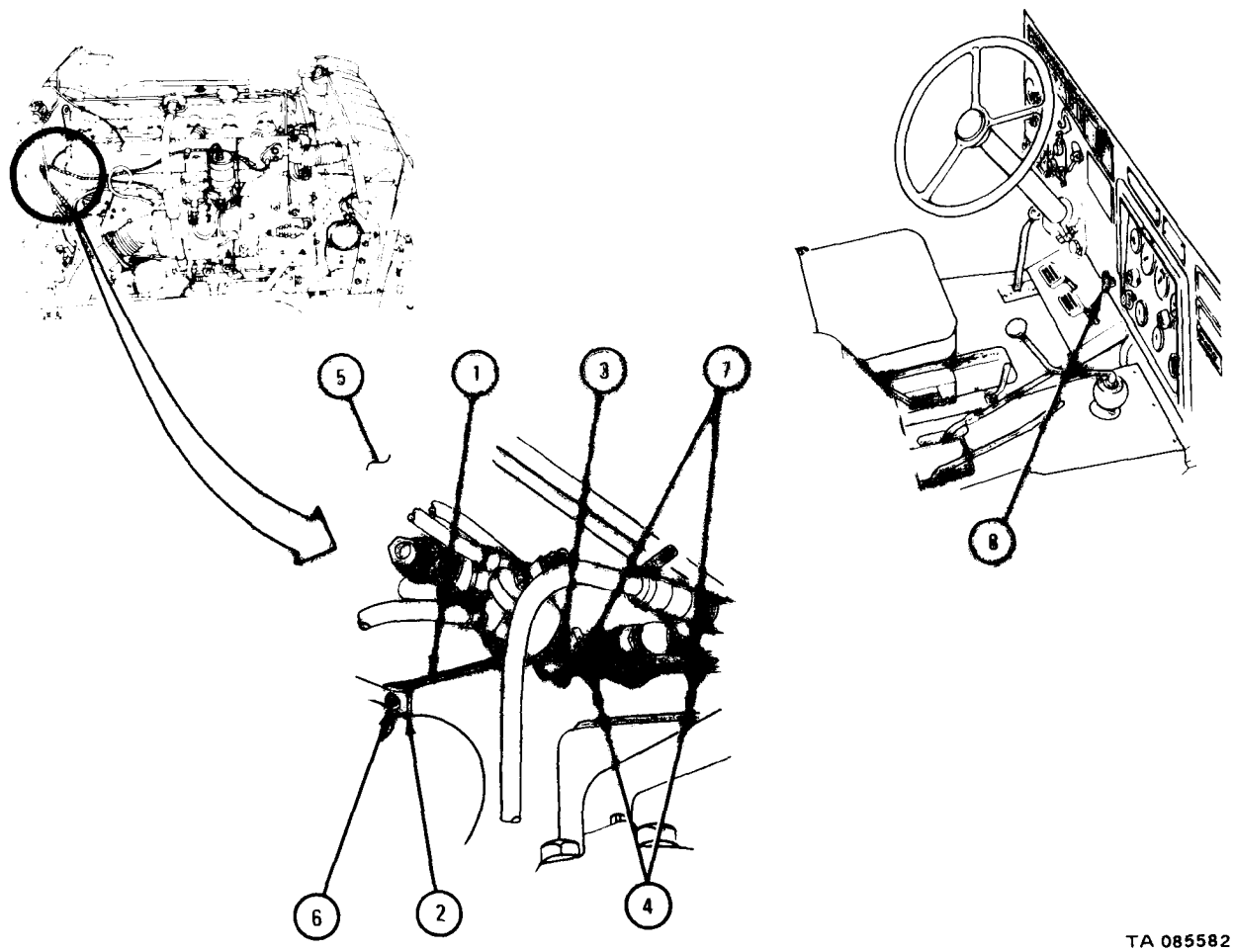
1. Put pressurization valve hand control assembly cable housing (1) in clamp (2) and control cable (3) in two swivels (4).
2. Push swivels (4) all the way toward firewall (5).
3. Slide pressurization valve hand control assembly cable housing (1) in clamp (2) so there is no less than 1/2 inch between swivels (4) and pressurization valve hand control assembly cable housing (1).
4. Using wrenches, tighten capscrew and nut (6). Push swivels (4) all the way away from firewall (5).
5. Using screwdriver, tighten two setscrews (7).
6. From inside cab, move pressurization valve hand control knob (8) out and in several times to make sure all parts move smoothly without binding.

NOTE

Follow-on Maintenance Action Required:

Close hood. Refer to TM 9-2320-209-10.

END OF TASK



Section IV. SPECIAL PURPOSE KITS

23-32. DECONTAMINATION APPARATUS MOUNTING BRACKET REMOVAL AND REPLACEMENT.

TOOLS: 7/16-inch wrench
11/16-inch open end wrench
5/8-inch open end wrench
9/16-inch wrench (2)

SUPPLIES: None

PERSONNEL: One

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

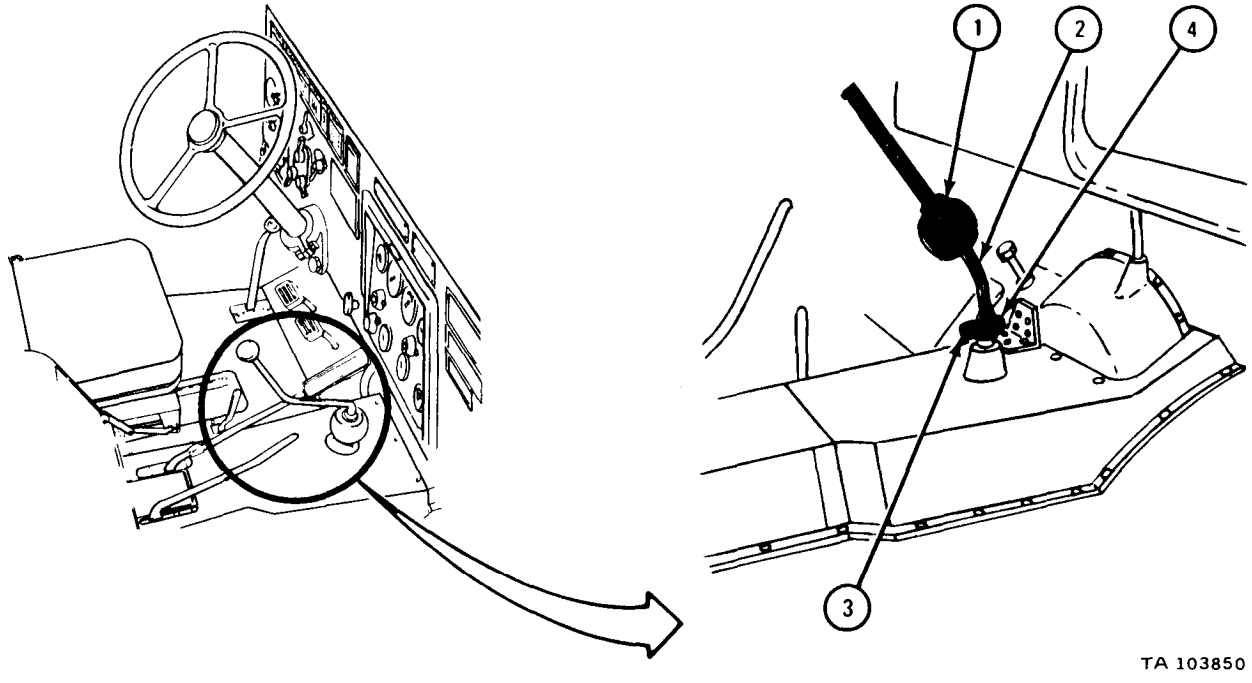
a. Preliminary Procedure. Remove decontamination apparatus bracket assembly. Refer to TM 3-4230-204-12&P.

b. Removal.

FRAME 1

1. Slide rubber boot (1) up gearshift lever (2) as shown.
2. Using 11/16-inch and 5/8-inch wrenches, unscrew and take off nut with flat washer (3) from bolt (4). Take out bolt and lift off gearshift lever (2).

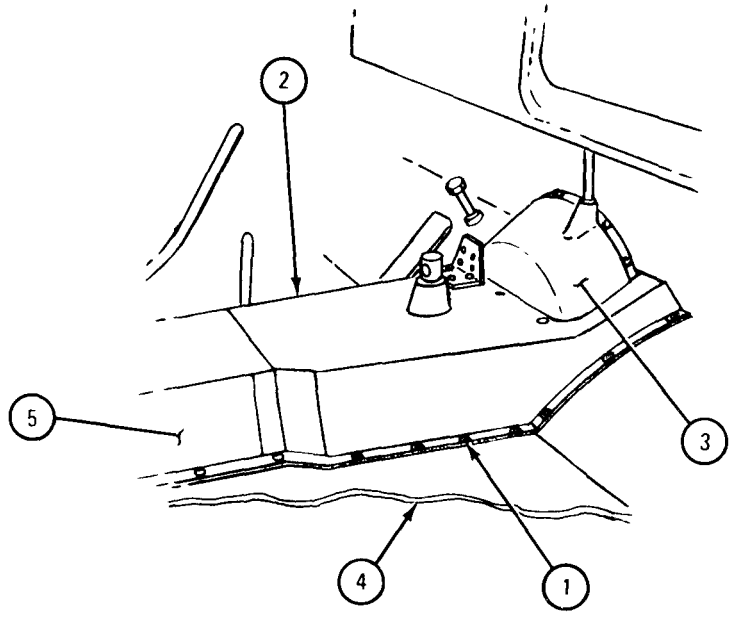
GO TO FRAME 2



FRAME 2

1. Using 7/16-inch wrench, unscrew and take out 13 screws (1) holding intermediate tunnel (2) to front tunnel (3), cab floor (4), and rear tunnel (5).
2. Lift off intermediate tunnel (2) and take it out of cab.

GO TO FRAME 3

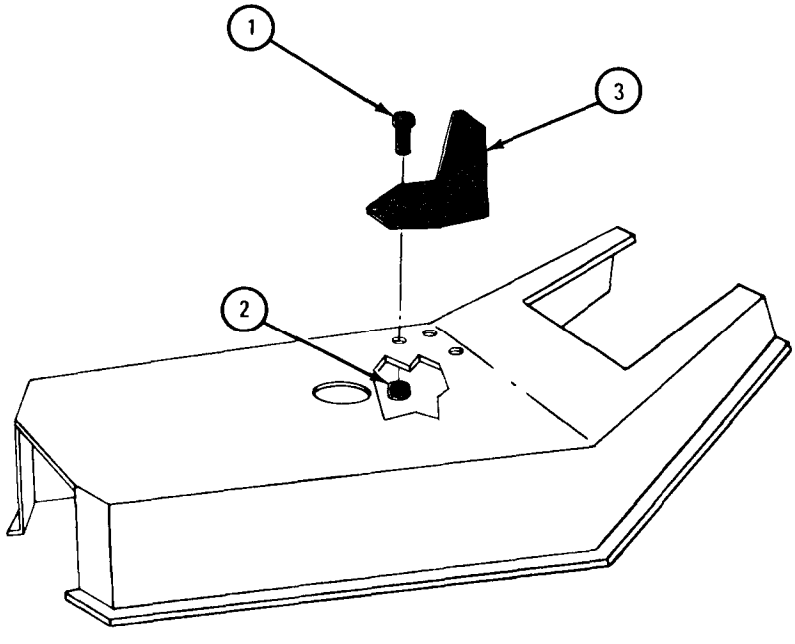


TA 103851

FRAME 3

1. Using 9/16-inch wrenches, unscrew and take out four screws (1) and nuts (2). Take off bracket (3).

END OF TASK



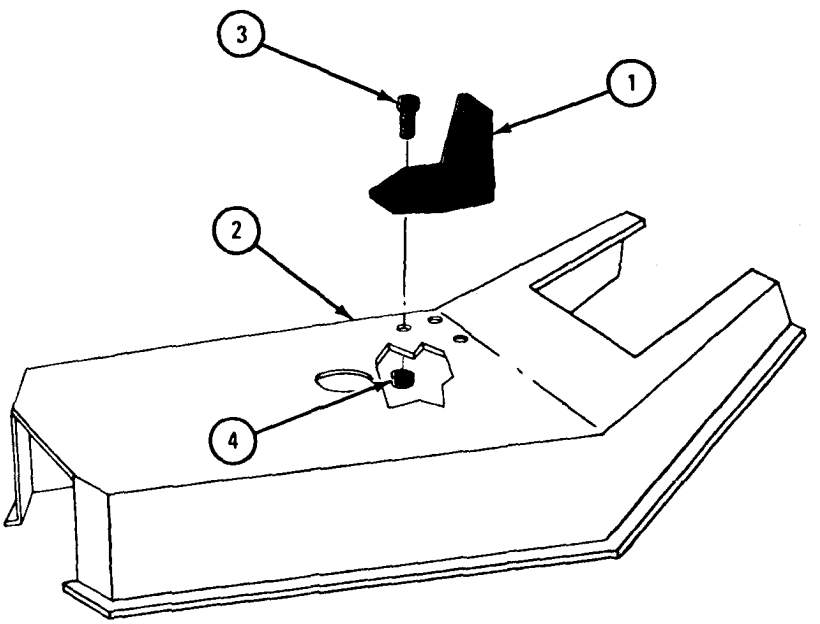
TA 103852

c. Replacement.

FRAME 1

1. Put decontamination apparatus bracket (1) on intermediate tunnel (2) and aline screw holes. Using 9/16-inch wrenches, screw in and tighten four screws (3) and nuts (4).

GO TO FRAME 2

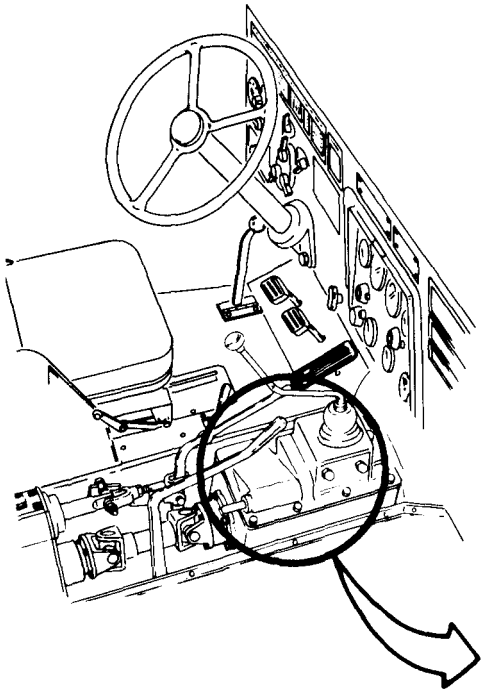


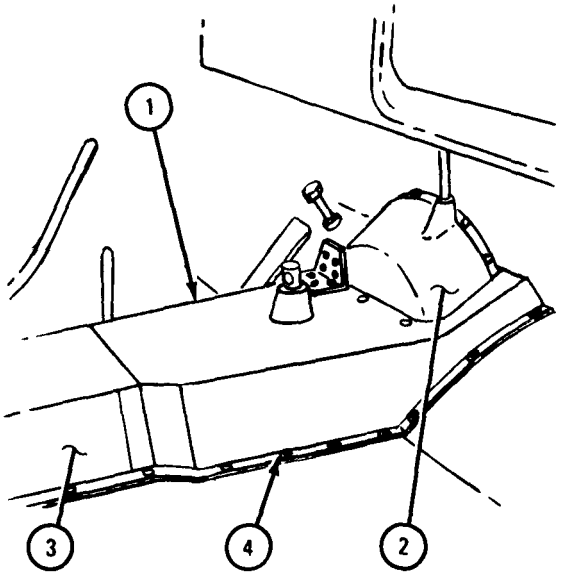
TA 103459

FRAME 2

1. Working inside cab, place intermediate tunnel (1) over front tunnel (2) and rear tunnel (3) as shown. Aline mounting holes and using 7/16-inch wrench, screw in and tighten 13 screws (4).

GO TO FRAME 3





TA 103853

FRAME 3

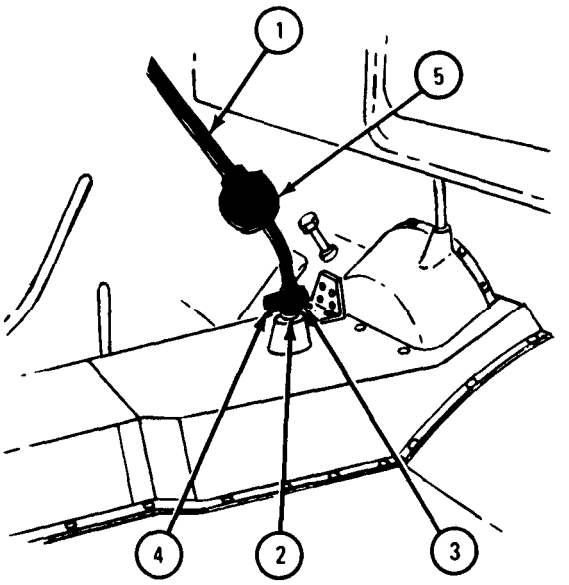
1. Put gearshift lever (1) over stub shaft (2).
2. Put bolt (3) through split flange holes at bottom of gearshift lever (1).
3. Using 5/8-inch and 11/16-inch wrenches, screw on and tighten locknut and flat washer (4).
4. Slide rubber boot (5) down over end of gearshift lever (1).

NOTE

Follow-on Maintenance Action Required:

Replace decontamination apparatus bracket assembly. Refer to TM 3-4230-204-12&P.

END OF TASK



TA 103461

23-33. A-FRAME KIT SPREADER TUBE REPAIR.

TOOLS: Open end wrench set, pn GGG-W-636
6-inch pliers

SUPPLIES: None

PERSONNEL: Three

EQUIPMENT CONDITION: Truck parked, engine off, handbrake set.

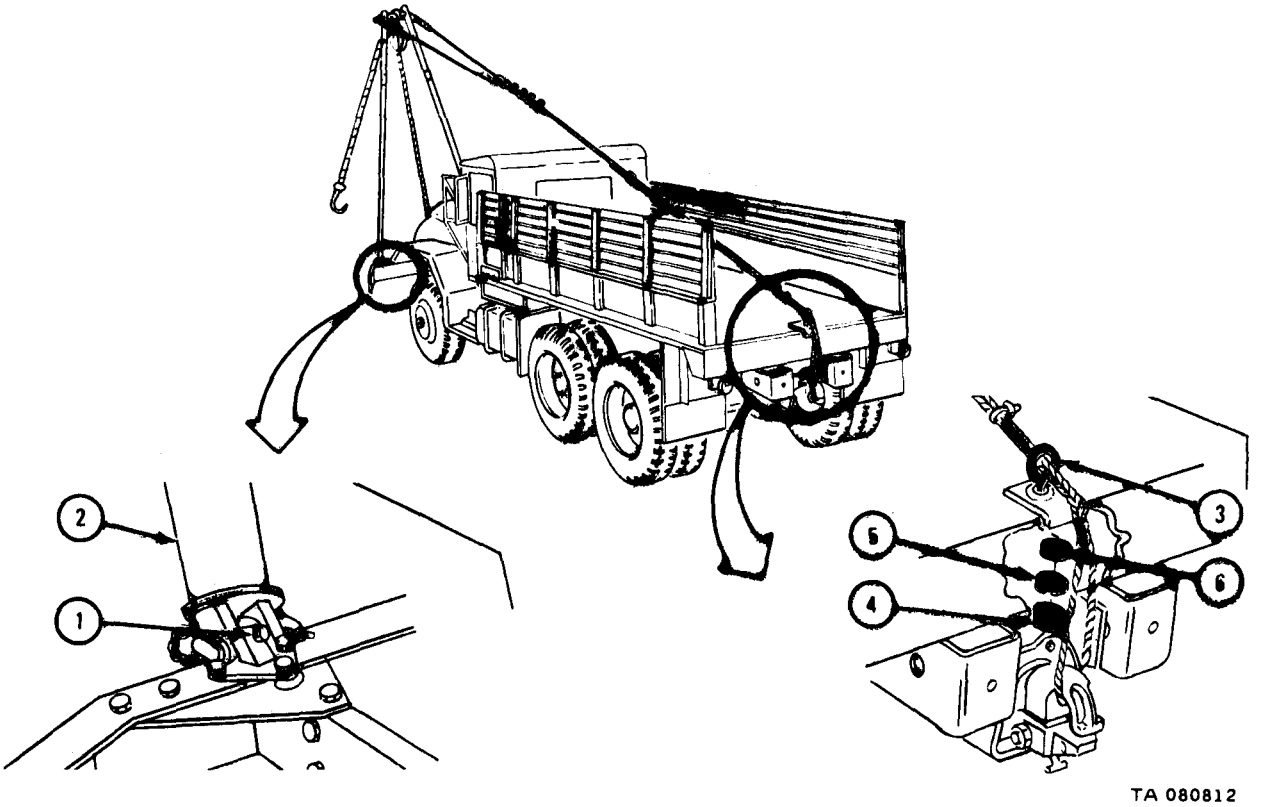
a. Preliminary Procedure. Using front winch, lower cable hook to ground.
Refre to 9-2320-209-10

b. Removal.

FRAME 1

1. Using wrench, unscrew and take out two adjusting screws (1), one from each leg (2).
2. Using pliers and wrench, hold eyebolt (3) and unscrew and take off nut (4), lockwasher (5), and flat washer (6).

GO TO FRAME 2



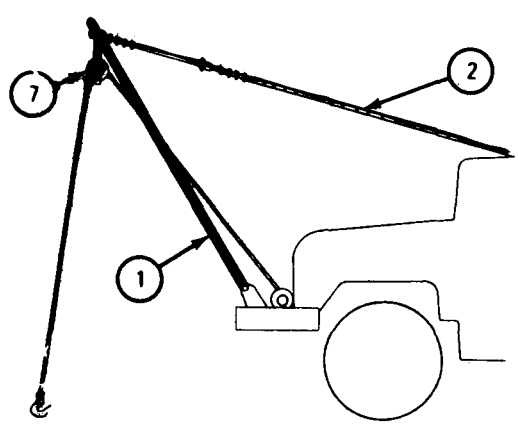
FRAME 2

Soldiers A and B 1. Push A-frame (1) toward cab until cable (2) goes slack and hold A-frame in place.

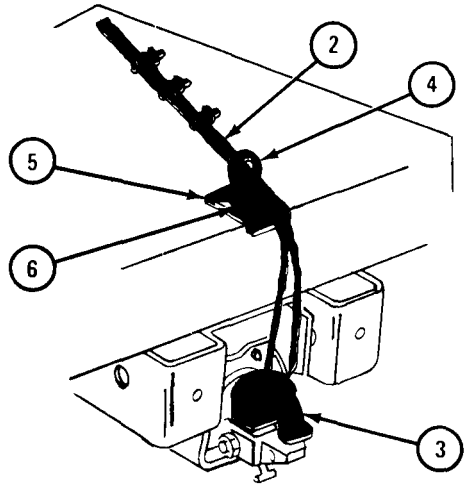
Soldier C 2. When there is enough slack in cable (2), open pintle hook (3) and take out cable. Put out eyebolt (4) and take off plate (5) and washer (6).

Soldiers A and B 3. Lower A-frame (1) down to ground. Take off snatch block (7).

GO TO FRAME 3



SOLDIERS A AND B



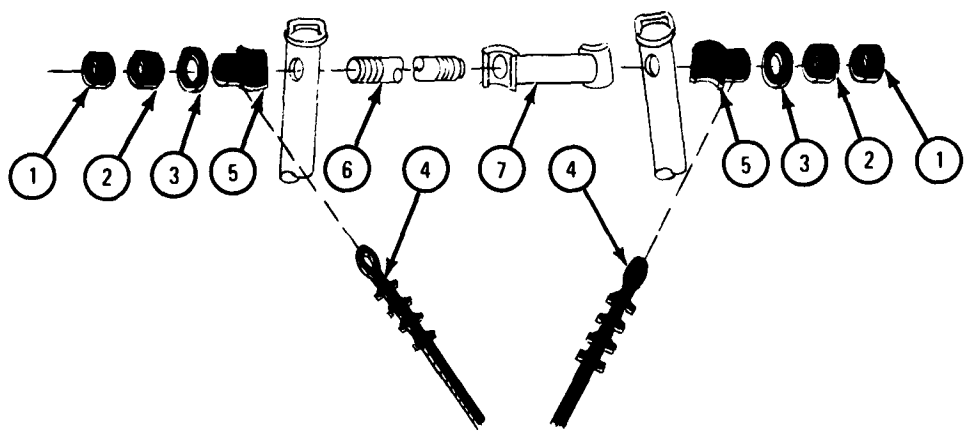
SOLDIER C

TA 080813

FRAME 3

1. Using wrench, unscrew and take off two locknuts (1).
2. Using wrench, unscrew and take off two adjusting nuts (2).
3. Take off two washers (3).
4. Take each end of harness assembly (4) off two spacers (5) and take off two spacers.
5. Take out spreader tube stud (6) and take off spreader tube (7).

END OF TASK



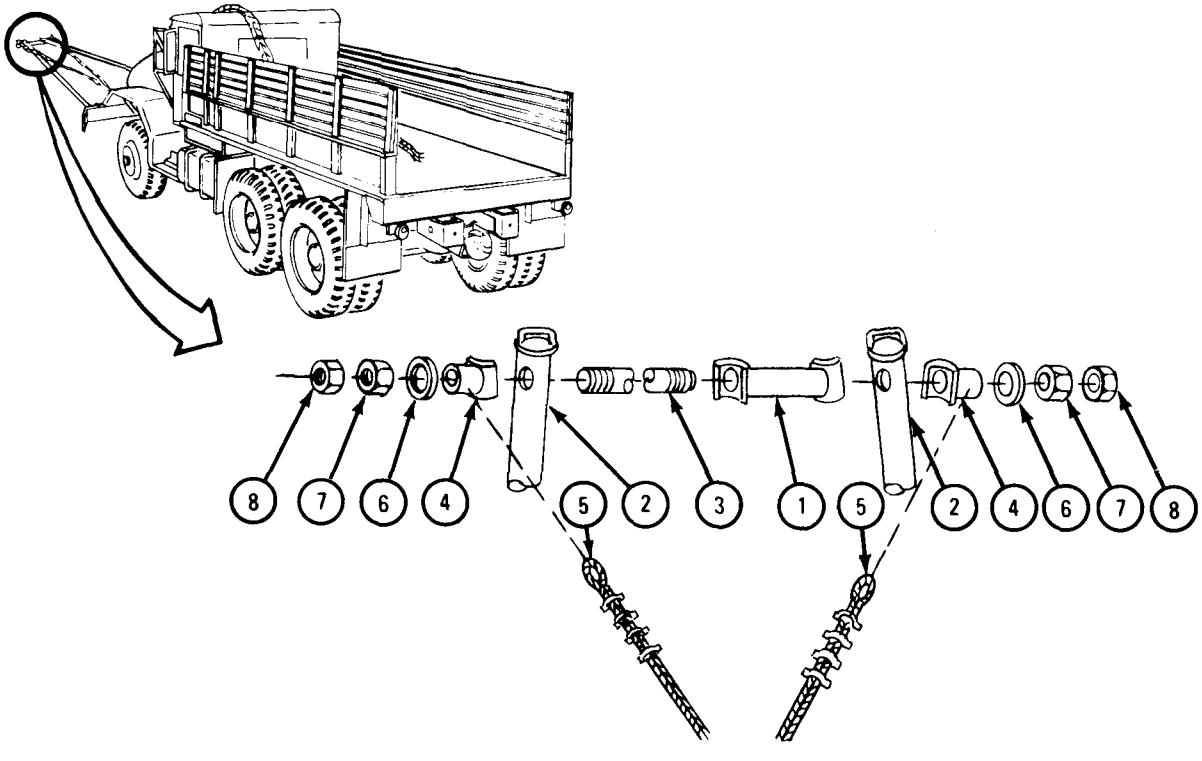
TA 080814

c. Replacement.

FRAME 1

1. Put spreader tube (1) in place between two upper leg tubes (2). Put in spreader stud (3) so that the same number of threads show on each side of upper leg tubes (2).
2. Put on two spacers (4), one on each end of spreader stud (3) as shown.
3. Put looped ends of harness assembly (5) over each spacer (4).
4. Put on two washers (6) and using wrench, screw on and tighten two adjusting nuts (7). Make sure the same number of threads show from each adjusting nut.
5. Using wrench, screw on and tighten two locknuts (8).

GO TO FRAME 2



FRAME 2

Soldier A 1. Hook snatch block (1) on center of spreader tube on A-frame (2).

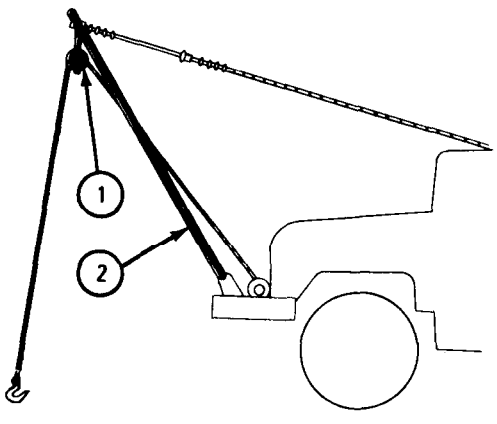
Soldiers A and B 2. Lift up A-frame (2) until soldier C has enough slack to put end loop of cable (3) on pintle hook (4) and hold A-frame in place.

Soldier C 3. When there is enough slack in cable (3), put eyebolt (5) over loop end of cable. Open pintle hook (4) and put looped end of cable around pintle hook as shown.

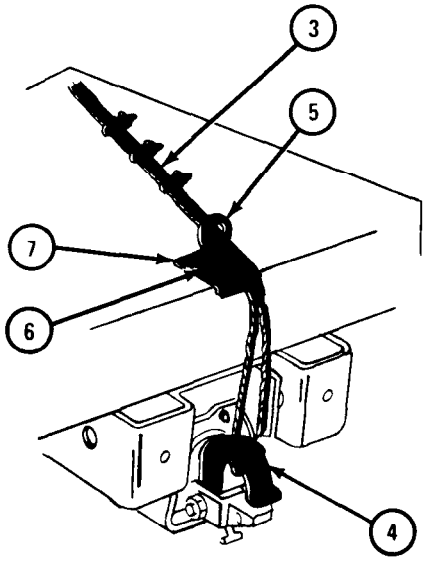
4. Put washer (6) and plate (7) on back of truck and aline screw hole. Put eyebolt (5) in place. Tell soldiers A and B when finished.

Soldiers A and B 5. Lower A-frame (2) to position shown.

GO TO FRAME 3



SOLDIERS A AND B



SOLDIER C

TA 080816

FRAME 3

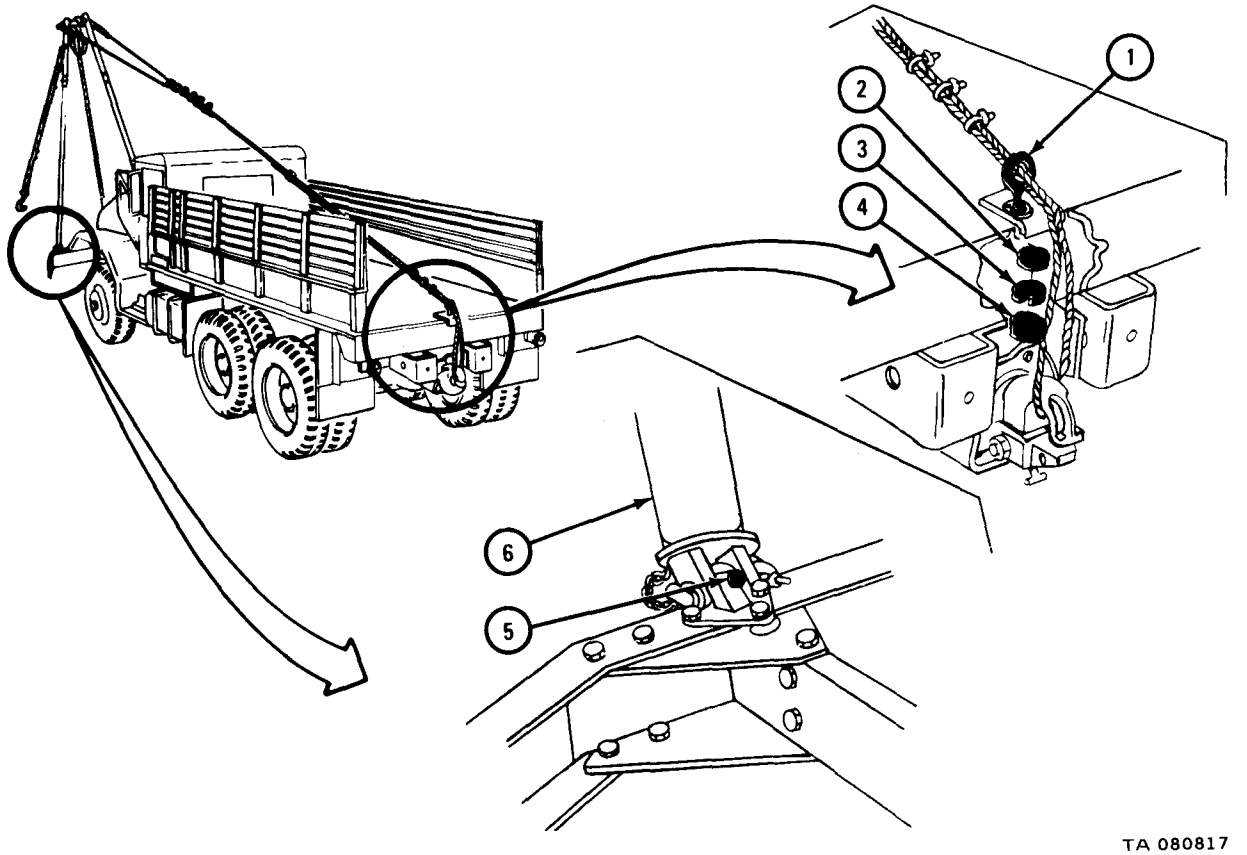
1. Using wrench and pliers, hold eyebolt (1) and screw on and tighten flat washer (2), lockwasher (3), and nut (4).
2. Using wrench, screw in and tighten two adjusting screws (5), one in each leg (6).

NOTE

Follow-on Maintenance Action Required:

Using front winch, raise cable hook off ground. Refer to TM 9-2320-209-10.

END OF TASK



APPENDIX A

REFERENCES

A-1. PUBLICATION INDEXES AND GENERAL REFERENCE.

Indexes should be checked often for the latest changes or revisions of references given in this appendix and for new publications on materiel covered in this technical manual.

a. Military Publications Indexes.

Index of Army Motion Pictures and Related Audio-Visual Aids . . . . . DA Pam 108–1

Index of Administrative Publications . . . . . DA Pam 310-1

Index of Blank Forms . . . . . DA Pam 310-2

Index of Doctrinal Training and Organizational Publications . . . . . DA Pam 310-3

Military Publications:

Index of Technical Manuals, Technical Bulletins, Supply Bulletins, and Lubrications Orders . . . . . DA Pam 310-4

Index of Supply Catalogs and Supply Manuals (excluding types 7, 8, and 9) . . . . . DA Pam 310-6

Index of Modification Work Orders . . . . . DA Pam 310-7

Common Tools and Equipment Supply Manuals . . . . . DA Supply Manuals SC-4910-95-CL-A01, A02, A31, A32, A50, A63, A64, A65, A67, A68, A72, A73, and A74

b. General Reference.

Authorization Abbreviations and Brevity Codes . . . . . AR 310-50

Dictionary of United States Army Terms . . . . . AR 310-25

A-2. FORMS.

The following forms are for this material. (Refer to DA pamphlet 310-2 for index of blank forms and to TM 38-750 for explanation of their use.)

Recommended Changes to Equipment Publications	DA Form 2028-2
Maintenance Request - Continuation Sheet	DA Form 2407-1
Equipment Log Assembly (Records)	DA Form 2408

A-3. OTHER PUBLICATIONS.

a. Vehicle.

Lubrication Order	LO 9-2320-209-12/1
Operator's Manual	TM 9-2320-209-10-1
Direct Support and General Support Maintenance Manual	TM 9-2320-209-34
Organizational Maintenance Repair Parts and Special Tools List	TM 9-2320-209-20P
Direct Support and General Support Maintenance Repair Parts and Special Tools List	TM 9-2320-209-34P

b. General.

Camouflage of Vehicles	TB 43-0209
Chemical, Biological, and Radiological (CBR) Decontamination	TM 3-220
Chemical, Biological, Radiological, and Nuclear Defense	FM 21-40
Safety Inspection and Testing of Lifting Devices	TB 43-0142
Rigging	TM 5-725
Accident Reporting and Records	AR 385-40
Basic Cold Weather Manual	FM 31-70
Cooling Systems: Tactical Vehicles	TM 750-254
Manual for the Wheeled Vehicle Driver	TM 21-305
Driver Selection and Training (Wheeled Vehicles)	FM 21-300
Deepwater Fording of Ordnance Materiel	TM 9-238

Fording Kits for Combat and Transport Vehicles MIL-F-3201

Maintenance Assistance and Instruction Team (MAIT) Program . . . . . AR 750-51

Transportability Guidance, Trucks, 2 1/2 ton, 6x6 . . . . . TM 55-2320-209-15-1

Army Motor Transport Operations . . . . . FM 55-30

Mountain Operations . . . . . FM 31-72

Northern Operations . . . . . FM 31-71

Operation and Maintenance of Ordnance Materiel in Cold Weather (0°F to -65°F) . . . . . TM 9-207

Painting Instructions for Field Use . . . . . TM 43-0139

Petroleum Handling Equipment and Operation . . . . . TM 10-1101

Preservation-Packaging, Methods of MIL-P-116

Principles of Automotive Vehicles . . . . . TM 9-8000

Prevention of Motor Vehicle Accidents . . . . . AR 385-55

Organizational Maintenance: Spark Plugs Used on Ordnance Materiel . . . . . TM 9-8638

Functional Grouping Codes - Combat, Tactical, and Support Vehicles and Special Purpose Equipment . . . . . TM 750-93-1

The Army Management System . . . . . TM 38-750

Administrative Storage of Equipment . . . . . TM 740-90-1

c. Maintenance and Repair.

Use of Antifreeze Solutions and Cleaning Compounds in Engine Cooling Systems . . . . . TB 750-651

Organizational Care, Maintenance and Repair of Pneumatic Tires and Inner Tubes . . . . . TM 9-2610-200-20

Combat Vehicles and Tactical Transport Vehicles: Procedure for Starting Engines With Slave Cable . . . . . TB ORD 537

Description, Use, Bonding Techniques, and Properties of Adhesives . . . . . TB ORD 1032

General Supply: Winterization Kits for Army Tank-Automotive Materiel . . . . . SB 9-16

Inspection, Care and Maintenance of Antifriction Bearings . . . . . TM 9-214

Operator and Organizational Maintenance Manual for Lead-Acid Storage Batteries . . . . . TM 9-6140-200-12

Army Materiel Maintenance Concepts and Policies . . . . . AR 750-1

Operator's Manual: Welding Theory and Application . . . . . TM 9-237

Operator's and Organizational Maintenance Manual (Including Repair Parts and Special Tools List) For Decontamination Apparatus . . . . . TM 3-4230-204-12&P

Materials Used for Cleaning, Preserving, Abrading and Cementing Ordnance Materiel and Related Materials Including Chemicals . . . . . TM 9-247

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IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

Subparagraph a refers to para 9-3. Should refer to para 19-13.

FRAME 4, step 1 reads "Using 15/16-inch wrench, breaker bar, and 15/16-inch socket, tighten six screws (1) and nuts (2)." Should read "Using 15/16-inch wrench, breaker bar, and 15/16-inch socket, tighten eight screws (1) and nuts (2)."

FRAME 1 - Change illustration callouts. Reason: callouts for sliding drive shaft (1) and drive adapter shaft (5) are reversed.

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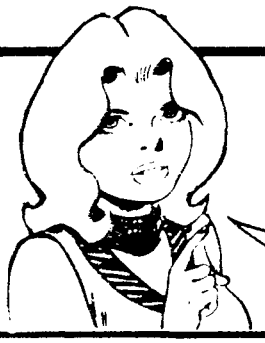
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THE METRIC SYSTEM AND EQUIVALENTS

LINEAR MEASURE

1 Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
1 Kilometer = 1000 Meters = 0.621 Miles

WEIGHTS

1 Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
1 Kilogram = 1000 Grams = 2.2 Lb
1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

SQUARE MEASURE

1 Sq Centimeter = 100 Sq Millimeters = 0.155 Sq Inches
1 Sq Meter = 10,000 Sq Centimeters = 10.76 Sq Feet
1 Sq Kilometer = 1,000,000 Sq Meters = 0.386 Sq Miles

CUBIC MEASURE

1 Cu Centimeter = 1000 Cu Millimeters = 0.06 Cu Inches
1 Cu Meter = 1,000,000 Cu Centimeters = 35.31 Cu Feet

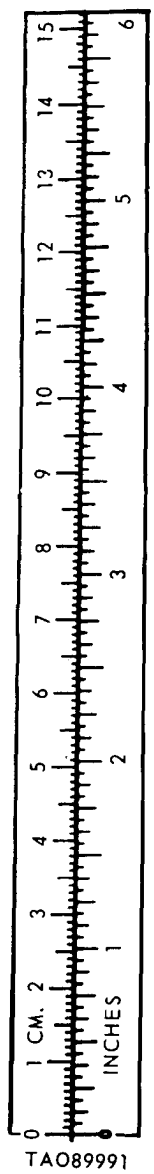
TEMPERATURE

$5/9\ (^0F - 32) = {}^0C$
212^0 Fahrenheit is equivalent to 100^0 Celsius
90^0 Fahrenheit is equivalent to 32.2^0 Celsius
32^0 Fahrenheit is equivalent to 0^0 Celsius
$9/5\ C^0 + 32 = F^0$

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
Pints	Liters	0.473
Quarts	Liters	0.946
Gallons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
Liters	Gallons	0.264
Grams	Ounces	0.035
Kilograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pound-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
Kilometers per Liter	Miles per Gallon	2.354
Kilometers per Hour	Miles per Hour	0.621



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