

INSTRUCTIONS FOR INSTALLATION OF DEEP WATER FORDING KIT (5705693)



In English:

This **custom-made PDF** contains the reworked scanned pictures from the page "Deep Water Fording Kit Installation" on www.hummerknowledgebase.com regarding the installation of the Deep Water Fording Kit (Installation Kit 5705693) for the HMMWV series. The original "Installation Instructions" had the Part.No. 12339842, the original "Installation Drawings" had the Part.No. 12340915. The Instructions and Drawings contains some handwritten notes of an unknown mechanic.

I further attached Chapter "2-37. DEEP WATER FORDING OPERATION" of TM 9-2320-280-10 (page 213-220) for better knowledge how to use the Kit daily in the field.

I reworked and cleaned all the scanned pictures and created a new **searchable** PDF with OCR for it. Also a good opportunity to check if the complete Deep Fording Kit is installed on your vehicle. **Have fun with it.**



Auf Deutsch:

Diese **selbst erstellte PDF** enthält die überarbeiteten gescannten Bilder aus der Seite „Deep Water Fording Kit Installation“ von www.hummerknowledgebase.com zur Installation des Deep Water Fording Kits (Installation Kit 5705693) für die HMMWV-Serie. Die ursprüngliche „Montageanleitung“ hatte die Teile-Nr. 12339842, die originalen "Installationszeichnungen" hatten die Teile-Nr. 12340915. Die Anleitung und die Zeichnungen enthalten einige handschriftliche Notizen eines unbekanntes Mechanikers.

Ich habe außerdem das Kapitel "2-37. DEEP WATER FORDING OPERATION " aus der TM 9-2320-280-10 (Seite 213-220) angehängt, um besser zu vermitteln, wie das Kit im alltäglichen Betrieb verwendet wird.

Ich habe alle gescannten Bilder bereinigt überarbeitet und ein neues **durchsuchbares** PDF mit OCR dafür erstellt. Auch eine gute Gelegenheit, um zu überprüfen, ob das komplette Deep Fording Kit in Ihrem Fahrzeug installiert ist. **Viel Spaß damit.**

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INSTRUCTIONS FOR INSTALLATION OF DEEP WATER FORDING KIT

NOTE

1. THIS DRAWING IS FOR INSTALLATION PURPOSES ONLY. ALL ITEMS MARKED * ARE INCLUDED IN KIT.
2. CALLOUTS ARE IDENTIFIED AS FOLLOWS:
 - * NEW PARTS
 - # PARTS TO BE REMOVED AND DISCARDED
 - △ PARTS TO BE REMOVED AND REUSED

SECTION I. INTRODUCTION

- 1-1. PURPOSE. THE PURPOSE OF THESE INSTRUCTIONS IS TO PROVIDE A PROCEDURE FOR INSTALLATION OF DEEP WATER FORDING KITS ON M998 SERIES VEHICLES.

SECTION II. INSTALLATION KIT

- 2-1. NEW MATERIAL. INSTALLATION KIT 5705693 CONTAINS THE FOLLOWING ITEMS:

<u>PART NO.</u>	<u>NOMENCLATURE</u>	<u>QTY.</u>
12338339	GASKET	1
✓ 12339109	NAME PLATE	1
✓ 12339147-2	TUBE, TRANS OIL DIPSTICK	1
12339397-3	WELLNUT	2-1 *A 1
✓ 12339829	WRENCH, SPECIAL	1
12339832	SUPPORT, STACK	1
✓ 12339833	TUBE, VENT STACK	1
✓ 12339836	INSERT SHIPPING	1
12339840	ELBOW, EXTENSION	1
✓ 12339842	INSTALLATION INSTRUCTIONS	1
12339843	STACK, INTAKE	1
✓ 12339844	TUBE, ENG. OIL DIPSTICK	1
✓ 12339845	CUP, SENSOR	1
✓ 12339846	DIPSTICK, ENGINE	1
*A 2 12339397-6	WELLNUT	1
-A1 COML 737	RTV SEALANT	2 02

B-12339842
RL.
Shit.
10/10

INIT	REV	DRAWING CONTROL	CHANGE DATE	DATE	BY
				-A/9-29-89	*A/4-21-89

✓	12339847	DIPSTICK, TRANSMISSION	1
	12339848	REINFORCEMENT, EXHAUST	1
	12339849	EXHAUST, FORDING	1
	12339964-1	ELBOW	2
✓	① XA 1	12339969 12339973-1	1
	12339978	CONNECTOR - MALE	1
	12339981-2	HOSE, CDR VALVE TO SENSOR CUP (25.00 INCH LONG)	1
	12339981-5	HOSE, CDR VALVE TO SELECTOR VALVE (42.00 INCH LONG)	1
	② XA 2	12339981-7	1
	ERR104420-1	HOSE, POWER STEERING PUMP (18.00 INCH LONG)	1
	12339983	ELBOW	1
	12339996	CAP, DUST	1
✓	12339997	CAP, POWER STEERING PUMP	1
	12340260	CDR VALVE	1
	③ XA 3	12340331	1
		FITTING	1
	12340524	SELECTOR VALVE	1
✓	12340915	INSTALLATION DRAWING	1
	12341027	ISOLATOR	2
	MS21333-67	CLAMP	3
✓	MS21333-98	CLAMP	1
✓	MS27183-16	WASHER	1
✓	MS28775-113	SEAL	1
✓	MS35340-43	WASHER	2
✓	MS51412-27	SPACER	2
✓	MS51470-3	NUT	1
✓	MS51943-31	NUT	16
✓	MS51943-35	NUT	5
MS35207-263	MS51958-63	SCREW	1
✓	MS51967-12	NUT	1
✓	MS90725-6	SCREW	11
✓	MS90725-10	SCREW	2
✓	MS90725-66	SCREW	3
✓	MS90725-94	SCREW	1
	MS90728-6	SCREW	2
	24617-11501906	STRAP	4
	24617-11608950-18	CLAMP	2
✓	24617-167163	SCREW	1
✓	24617-2436161	WASHER	26
✓	24617-2436163	WASHER	6
✓	24617-2436164	WASHER	1
✓	24617-271169	NUT	1
✓	24617-274244	O-RING	1
	24617-9414920	WASHER	2

90A/12-28-	-A/12-27-8	XA/11-28-8	EA/12-28-8	CHANGE BY	DRAWING CONTROL
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✓ 24617-9417793

WASHER

2

CPR104420-1

TUBE

177.00-157.00-

(A₁)

INCH

CPR104420-2

TUBE

11.00

INCH

✓ WWC440

CLAMP

4

B 1/2 TYPE E

WWC440 B SIZE 38

CLAMP

2

~~TYPE E~~

(A)

2-2. THE FOLLOWING ITEM IS REQUIRED, BUT IS NOT INCLUDED IN THE KIT AND MUST BE REQUISITIONED:

PART NO.

NOMENCLATURE

QTY.

12297953

SEALANT

AR

2-3. EXISTING MATERIAL. ALL MATERIAL REMOVED AND NOT REUSED DURING INSTALLATION WILL BE RETURNED TO STOCK FOR DISPOSITION IN ACCORDANCE WITH AR 725-50.

SECTION III. INSTALLATION INSTRUCTIONS

NOTE

CUT AND MARK CRP104420-1 TUBE TO THE FOLLOWING:

70.00 INCHES AIR CLEANER TO SELECTOR VALVE

20.00 INCHES HYDRO-BOOST

26.00 INCHES SELECTOR VALVE TO BRANCH TEE

41.00 INCHES BRANCH TEE TO EXISTING TEE

20.00 INCHES POWER STEERING PUMP

(A₂)

3-1. VEHICLE PREPARATION.

- A. REMOVE WEATHERCAP (TM 9-2320-280-20).
- B. REMOVE ENGINE OIL DIPSTICK TUBE (TM 9-2320-280-20).
- C. REMOVE TRANSMISSION OIL DIPSTICK TUBE (TM 9-2320-280-20).
- D. REMOVE AIR CLEANER ASSEMBLY (TM 9-2320-280-20).
- E. REMOVE CDR VALVE (TM 9-2320-280-20).
- F. REMOVE TAILPIPE (TM 9-2320-280-20).

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*4/11-28-89
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DRAWING CONTROL

- G. REMOVE LEFT SPLASH SHIELD (TM 9-2320-280-20).
- H. REMOVE AIR INTAKE VENT LINE (TM 9-2320-280-20).
- I. REMOVE RIGHT EXHAUST MANIFOLD REAR HEAT SHIELD (TM 9-2320-280-20).
- J. REMOVE THREE SCREWS AND WASHERS SECURING INTAKE DUCT TO AIR INDUCTION BOX AND REMOVE INTAKE DUCT AS SHOWN IN FIGURE 1.

3-2. BRAKE HYDRO-BOOST VENTING.

- A. INSTALL 12339964-1 ELBOW TO UNDERSIDE OF HYDRO-BOOST AS SHOWN IN FIGURE 2.
- B. REMOVE NUT, WASHER, AND SCREW SECURING HARNESS CLAMP TO BODY AS SHOWN IN FIGURE 2.
- C. CONNECT 20.00 INCH LONG HYDRO-BOOST TUBE TO ELBOW ON HYDRO-BOOST AS SHOWN IN FIGURE 2.
- D. INSTALL MS21333-67 CLAMP TO HYDRO-BOOST TUBE AND SECURE HARNESS CLAMP AND CLAMP TO BODY WITH EXISTING SCREW, WASHER, AND 24617-271169 NUT AS SHOWN IN FIGURE 2.
- E. INSTALL MS21333-98 CLAMP TO HYDRO-BOOST TUBE AND SECURE CLAMP TO BODY WITH MS90725-6 SCREW, TWO 24617-2436161 WASHERS, AND MS51943-31 NUT AS SHOWN IN FIGURE 2.

3-3. CDR VALVE INSTALLATION.

- A. INSTALL 12340260 CDR VALVE TO INTAKE MANIFOLD HOSE AND BRACKET AS SHOWN IN FIGURE 3.
- B. CONNECT INTAKE MANIFOLD HOSE TO CDR VALVE AND SECURE WITH EXISTING CLAMP AS SHOWN IN FIGURE 3.
- C. SECURE CDR VALVE AND HEATER CONTROL CABLE CLAMP TO BRACKET WITH TWO EXISTING WASHERS AND SCREWS AS SHOWN IN FIGURE 3. TIGHTEN SCREWS TO 15 LB-FT (20 N·m).
- D. CONNECT OIL FILL TUBE HOSE TO CDR VALVE AND SECURE WITH EXISTING CLAMP AS SHOWN IN FIGURE 3.

- E. CONNECT 12339981-5 CDR VALVE TO SELECTOR VALVE HOSE TO CDR VALVE AND SECURE WITH WWC 440 B 1/2 TYPE E CLAMP AS SHOWN IN FIGURE 4.
- F. CONNECT 12339981-2 CDR VALVE TO SENSOR CUP HOSE TO CDR VALVE AND SECURE WITH WWC440 B 1/2 TYPE E CLAMP AS SHOWN IN FIGURE 4.

3-4. SENSOR CUP INSTALLATION.

- A. INSTALL 12339845 SENSOR CUP TO BODY AND SECURE WITH TWO MS90725-6 SCREWS, FOUR 24617-2436161 WASHERS, AND TWO MS51943-31 NUTS AS SHOWN IN FIGURE 5.
- B. ROUTE CDR VALVE TO SENSOR CUP HOSE THROUGH "A" BEAM AS SHOWN IN FIGURE 5.
- C. CONNECT CDR VALVE TO SENSOR CUP HOSE TO SENSOR CUP AND SECURE WITH WWC 440 B 1/2 TYPE E AS SHOWN IN FIGURE 5.

3-5. TRANSMISSION OIL DIPSTICK TUBE ASSEMBLY INSTALLATION.

- A. LUBRICATE MS28775-113 SEAL WITH DEXRON II TRANSMISSION FLUID AND INSTALL ON 12339147-2 TUBE ASSEMBLY AS SHOWN IN FIGURE 6.
- B. INSTALL TUBE ASSEMBLY INTO TRANSMISSION AS SHOWN IN FIGURE 6.
- C. SECURE TUBE ASSEMBLY TO RIGHT SIDE CYLINDER HEAD WITH EXISTING SCREW AS SHOWN IN FIGURE 6. TIGHTEN SCREW TO 25-37 LB-FT (34-50 N·m).
- D. INSTALL 12339847 DIPSTICK INTO TUBE ASSEMBLY AS SHOWN IN FIGURE 6.
- E. INSTALL RIGHT EXHAUST MANIFOLD REAR HEAT SHIELD (TM 9-2320-280-20).

3-6. ENGINE OIL DIPSTICK TUBE ASSEMBLY INSTALLATION.

- A. APPLY 12297953 SEALANT TO 24617-274244 O-RING AND INSTALL O-RING ON 12339844 TUBE ASSEMBLY AS SHOWN IN FIGURE 7. INSTALL TUBE ASSEMBLY INTO ENGINE OIL PAN AS SHOWN IN FIGURE 7.

- ▼
- B. SECURE TUBE TO EXHAUST MANIFOLD WITH EXISTING WASHER AND SCREW AS SHOWN IN FIGURE 7. USING 8 MM HEX HEAD DRIVER, TIGHTEN SCREW TO 18-25 LB-FT (24-34 N.m) AS SHOWN IN FIGURE 7.
 - C. SECURE TUBE TO FUEL LINE BRACKETS WITH TWO EXISTING SCREWS AS SHOWN IN FIGURE 7. TIGHTEN SCREWS TO 3 - 4 LB-FT (4-5 N.m).
 - D. SECURE HARNESS CLAMP TO TUBE WITH EXISTING SCREW AND NUT AS SHOWN IN FIGURE 7.
 - E. INSTALL 12339846 DIPSTICK INTO TUBE ASSEMBLY AS SHOWN IN FIGURE 7.

3-7. AIR CLEANER EXTENSION ELBOW INSTALLATION.

- A. INSTALL SHORT END OF 12339840 ELBOW ON AIR CLEANER ASSEMBLY AND SECURE WITH 24617-11608950-18 CLAMP AS SHOWN IN FIGURE 8.
- B. INSTALL 12339996 CAP ON AIR CLEANER ASSEMBLY AND SECURE WITH EXISTING CLAMP AS SHOWN IN FIGURE 8.
- C. INSTALL AIR CLEANER AND EXISTING CLAMPS TO BRACKETS AND POSITION ELBOW INTO AIR INDUCTION BOX AS SHOWN IN FIGURE 8.
- D. SECURE AIR CLEANER ASSEMBLY TO BRACKETS WITH TWO OUTER CLAMPS AS SHOWN IN FIGURE 8.
- E. CONNECT AIR RESTRICTION HOSE TO AIR CLEANER ASSEMBLY AS SHOWN IN FIGURE 8.

3-8. AIR INTAKE STACK ASSEMBLY INSTALLATION.

- A. REMOVE TWO PLUGS FROM WINDSHIELD AS SHOWN IN FIGURE 9.
- B. USING D-100-MIL-1 RIVETER TOOL KIT, INSTALL TWO ONE 12339397-3 WELLNUTS IN WINDSHIELD AS SHOWN IN FIGURE 9, AND ONE 12339397-6 WELLNUT
- C. INSTALL 12339832 SUPPORT TO WINDSHIELD AND SECURE WITH TWO 24617-9414920 WASHERS AND MS90725-10 SCREWS AS SHOWN IN FIGURE 9. TIGHTEN SCREWS TO 6 LB-FT (8 N.m).
- D. INSTALL 12339843 STACK ASSEMBLY INTO ELBOW AND SECURE WITH 24617-11608950-18 CLAMP AS SHOWN IN FIGURE 10.

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- E. SECURE STACK ASSEMBLY TO SUPPORT WITH MS27183-16 WASHER, MS90725-94 SCREW, 24617-2436164 WASHER, AND MS51967-12 NUT AS SHOWN IN FIGURE 10.
 - F. INSTALL TWO *MS21333-67 CLIPS ON* 12339833 TUBE, INSTALL TUBE TO STACK ASSEMBLY, AND SECURE WITH MS35340-43 WASHER AND 24617-167163 SCREW AS SHOWN IN FIGURE 11.
 - G. SECURE TUBE TO STACK ASSEMBLY WITH *MS35207-263* ~~MS51958-63~~ SCREW, MS35340-43 WASHER, AND MS51470-3 NUT AS SHOWN IN FIGURE 11.
 - H. INSTALL AND CONNECT CPR104420-2 FUEL TANK VENT TUBE TO FILTER AND TUBE AS SHOWN IN FIGURE 11.

3-9. SELECTOR VALVE ASSEMBLY INSTALLATION.

- A. INSTALL 12339964-1 ELBOW ON 12340524 VALVE AS SHOWN IN FIGURE 12.
- B. INSTALL 12339983 ELBOW ON VALVE AS SHOWN IN FIGURE 12.
- C. INSTALL 12339978 CONNECTOR TO VALVE AS SHOWN IN FIGURE 12.
- D. REMOVE THREE PLUGS FROM BODY PANEL AT LEFT SIDE OF ENGINE AS SHOWN IN FIGURE 12.
- E. REMOVE TWO EXISTING SCREWS AND WASHERS SECURING FUEL FILTER TO BODY AND PULL FUEL FILTER AWAY FOR ACCESS TO INSTALL VALVE AS SHOWN IN FIGURE 13.
- F. CONNECT CDR VALVE TO SELECTOR VALVE HOSE TO ELBOW ON VALVE AND SECURE WITH WWC440 B 1/2 TYPE E CLAMP AS SHOWN IN FIGURE 12.
- G. CONNECT 70.00-INCH LONG AIR CLEANER TO SELECTOR VALVE TUBE TO ELBOW ON VALVE AS SHOWN IN FIGURE 12.
- H. CONNECT 26.00-INCH LONG SELECTOR VALVE TO BRANCH TEE TUBE TO CONNECTOR ON VALVE AS SHOWN IN FIGURE 12.
- I. REMOVE SCREW AND HANDLE FROM VALVE AS SHOWN IN FIGURE 12.

- J. INSTALL VALVE AND 12339109 NAME PLATE TO BODY AND SECURE WITH TWO MS90728-6 SCREWS, FOUR 24617-2436161 WASHERS, AND TWO MS51943-31 NUTS AS SHOWN IN FIGURE 12. TIGHTEN NUTS TO 6 LB-FT (8 N.m).
- K. SECURE FUEL FILTER TO BODY WITH TWO EXISTING WASHERS AND SCREWS AS SHOWN IN FIGURE 13. TIGHTEN SCREWS TO 17 LB-FT (23 N.m).
- L. INSTALL HANDLE TO VALVE AND SECURE WITH EXISTING SCREW AS SHOWN IN FIGURE 12.

3-10. VENT LINE TUBES INSTALLATION.

~~INSTALL 12340331 FITTING TO 12339969 TEE AS SHOWN IN FIGURE 14.~~

- A B. INSTALL TEE TO SELECTOR VALVE TO BRANCH TEE TUBE AS SHOWN IN FIGURE 14.
- B C. ROUTE CDR VALVE TO SELECTOR VALVE HOSE, AIR CLEANER TO SELECTOR VALVE TUBE, AND SELECTOR VALVE TO BRANCH TEE TUBE ALONG LEFT SIDE OF "A" BEAM AND SECURE TO HARNESS WITH 24617-11501906 STRAP AS SHOWN IN FIGURE 14.
- C D. CONNECT AIR CLEANER TO SELECTOR VALVE TUBE TO AIR CLEANER AS SHOWN IN FIGURE 14.
- D E. CONNECT 41.00-INCH LONG BRANCH TEE TO EXISTING TEE TUBE TO BRANCH TEE ON "A" BEAM AND ROUTE TO EXISTING TEE ALONG RIGHT SIDE FRAME AND CONNECT AS SHOWN IN FIGURE 14.
- E F. INSTALL THREE 24617-11501906 STRAPS ALONG "A" BEAM AND COWL, SECURING VENT LINES TO HARNESS AND FUEL TANK VENT LINE AS SHOWN IN FIGURE 14.

3-11. POWER STEERING RESERVOIR CAP INSTALLATION.

- A. REMOVE POWER STEERING RESERVOIR CAP AS SHOWN IN FIGURE 15.
- B. INSTALL 12339997 CAP TO RESERVOIR AS SHOWN IN FIGURE 15.

CPR 104420-1 (20.1N)
 C. ~~INSTALL TWO WWC440B SIZE 38 TYPE E CLAMPS TO 12339981-7 HOSE AND INSTALL HOSE TO CAP AND BRANCH TEE ON "A" BEAM AS SHOWN IN FIGURE 15.~~

3-11.1

POWER STUD SEALING
 POWER POSITIVE STUD SHALL BE COMPLETELY COVERED AND WATER-PROOFED WITH RTV SEALANT - COML 737 AFTER LEADS ARE ASSEMBLED. .06 MILL. THICK AS SHOWN IN FIG. 19.

	REV
	INITIAL

3-12. EXHAUST ASSEMBLY INSTALLATION.

NOTE

BEFORE INSTALLING REINFORCEMENT TO WHEELHOUSING, REFER TO FIGURE 16 FOR LOCATION OF PLUGS TO BE REMOVED AND MOUNTING HOLES TO BE USED.

- A. REMOVE SIX PLUGS FROM TOP OF WHEELHOUSING, AND FOUR PLUGS FROM SIDE OF WHEELHOUSING AS SHOWN IN FIGURE 17.
- B. INSTALL 12339848 REINFORCEMENT TO WHEELHOUSING AND SECURE WITH EIGHT MS90725-6 SCREWS, SIXTEEN 24617-2436161 WASHERS, AND EIGHT MS51943-31 NUTS AS SHOWN IN FIGURE 17.
- C. INSTALL TWO 12341027 ISOLATORS TO WHEELHOUSING AS SHOWN IN FIGURE 17.
- D. INSTALL 12339849 EXHAUST ASSEMBLY, AND TWO MS51412-27 SPACERS TO WHEELHOUSING AND SECURE WITH TWO 24617-9417793 WASHERS AND MS51943-35 NUTS AS SHOWN IN FIGURE 18.
- E. INSTALL 12338339 GASKET AND EXHAUST ASSEMBLY TO MUFFLER AND SECURE WITH THREE MS90725-66 SCREWS, SIX 24617-2436163 WASHERS, AND THREE MS51943-35 NUTS AS SHOWN IN FIGURE 18. TIGHTEN NUTS TO 37 LB-FT (50 N·m).

3-13. VEHICLE ASSEMBLY.

- A. INSTALL LEFT SPLASH SHIELD (TM 9-2320-280-20).
- B. INSTALL AIR INTAKE VENT LINE (TM 9-2320-280-20).

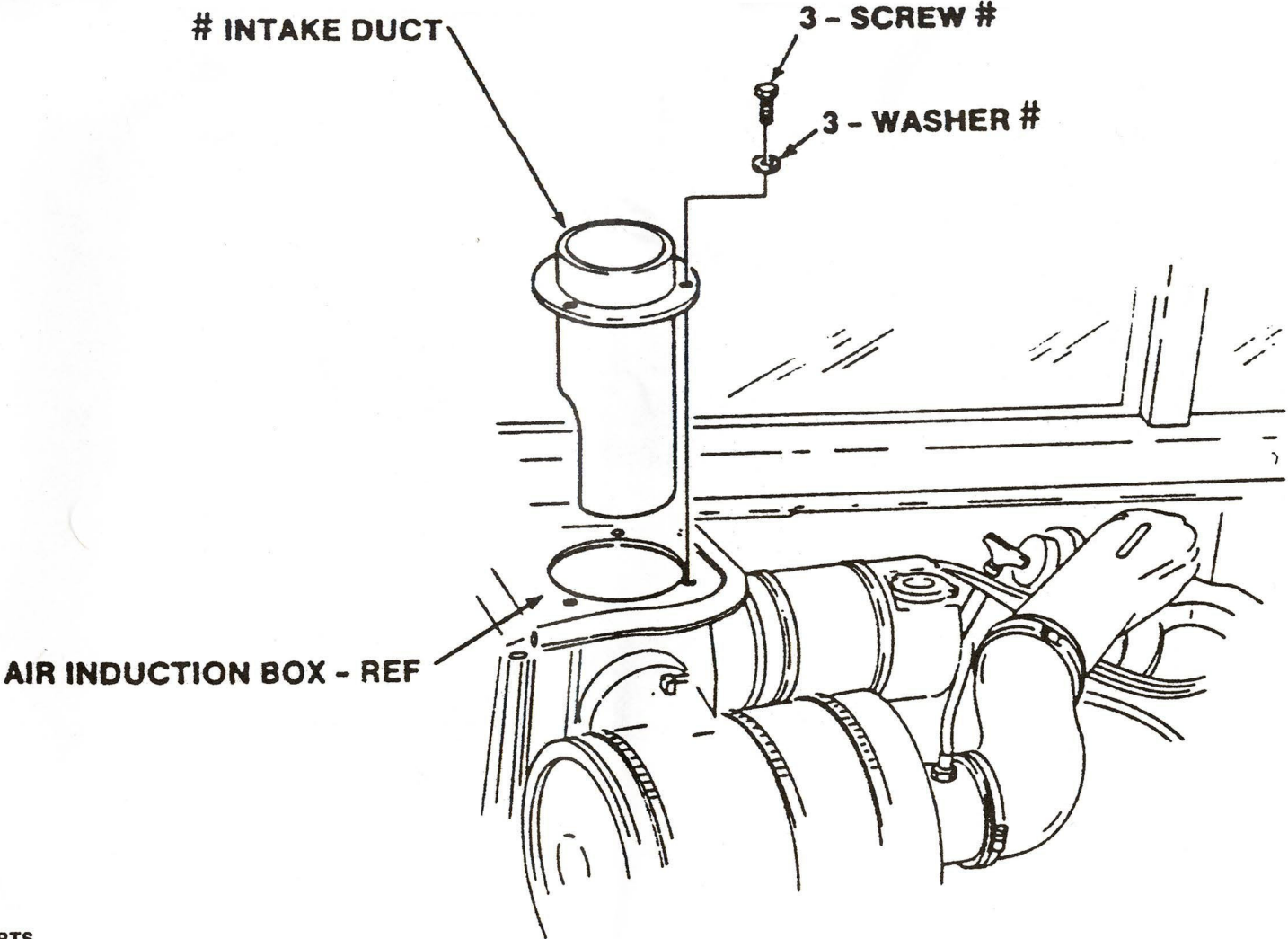
NOTE

12339829 SPECIAL WRENCH AND 12339836 SHIPPING INSERT ARE FURNISHED WITH THE DEEP WATER FORDING KIT FOR USE BY THE VEHICLE OPERATOR (TM 9-2320-280-10). THESE ITEMS MUST ACCOMPANY VEHICLE WHEN RETURNED TO OPERATION AFTER KIT INSTALLATION AND TESTING.

3-14. VENT SYSTEM LEAK TEST.



- A. BLOCK OFF ENGINE AIR INTAKE AND EXHAUST, *SET SELECTOR VALVE TO VENT.*
- B. DISCONNECT 42-INCH LONG CDR VALVE TO SELECTOR VALVE HOSE FROM CDR VALVE AS SHOWN IN FIGURE 4. ~~PLUG CDR VALVE HOSE PORT ON CDR VALVE.~~
- C. WITH SELECTOR VALVE ^{*IN VENT POSITION*} OPEN, ENTER 2.5 TO 3.5 AIR PRESSURE INTO CDR VALVE, ~~TO SELECTOR VALVE HOSE.~~ SHUT OFF AIR SUPPLY. SYSTEM MUST HAVE 1 P.S.I. AIR PRESSURE MINIMUM AFTER 1 MINUTE MINIMUM. *THIS WILL CHECK ENTIRE DWF SYSTEM.*
- D. CONNECT CDR VALVE TO SELECTOR VALVE HOSE TO CDR VALVE AND SECURE WITH CLAMP AS SHOWN IN FIGURE 4.

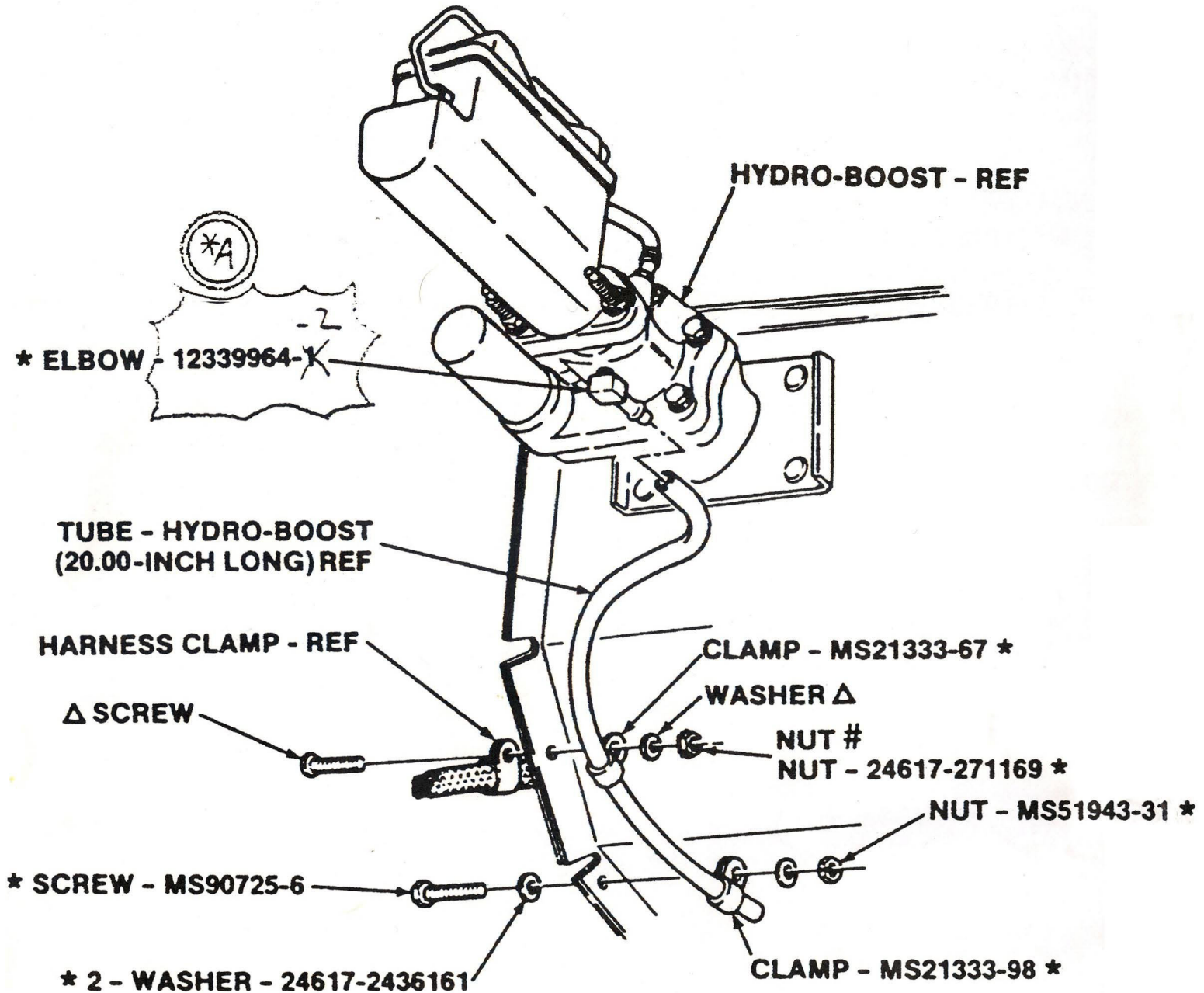


* NEW PARTS

PARTS TO BE REMOVED AND DISCARDED

△ PARTS TO BE REMOVED AND REUSED

FIGURE 1

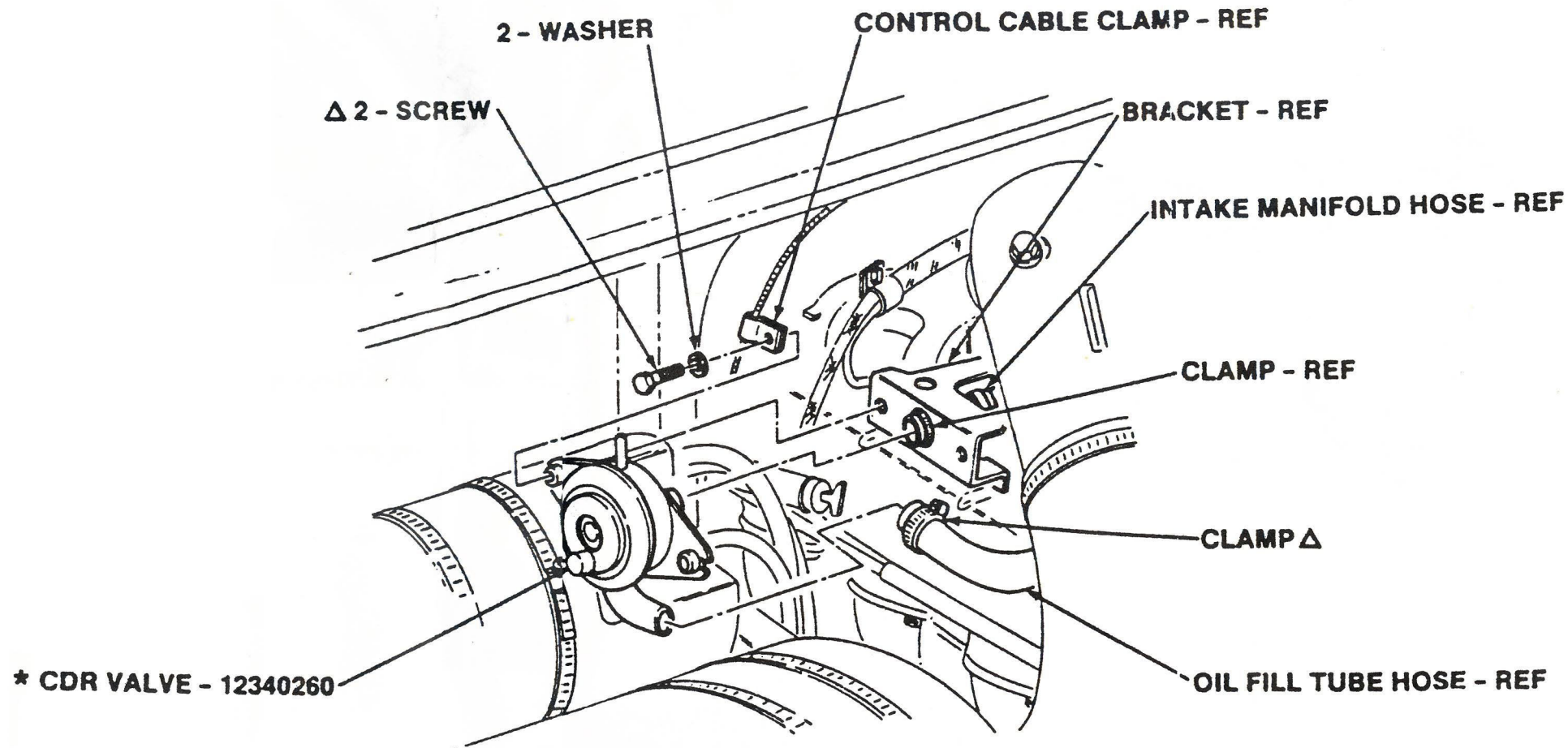


* NEW PARTS

PARTS TO BE REMOVED AND DISCARDED

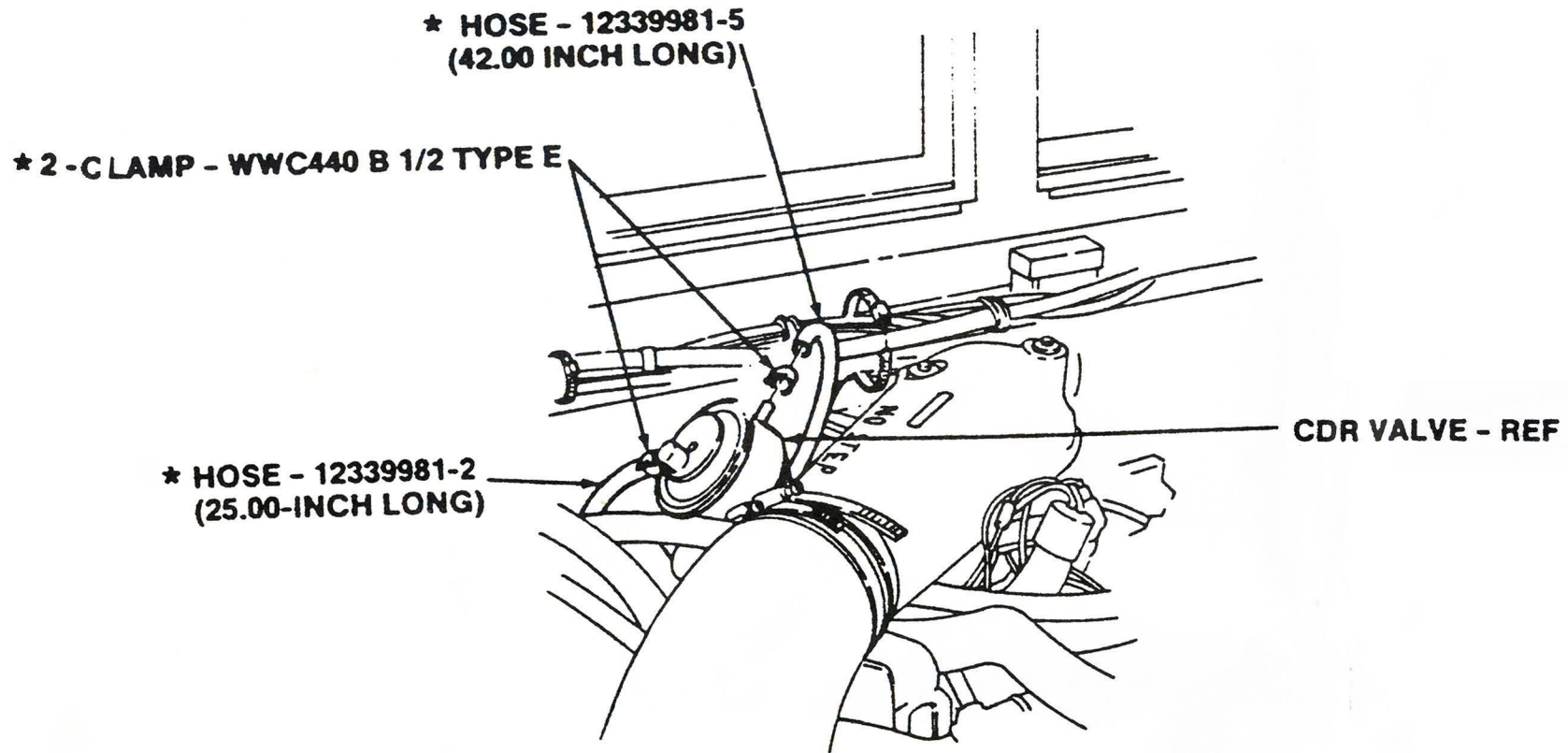
Δ PARTS TO BE REMOVED AND REUSED

FIGURE 2



- * NEW PARTS
- # PARTS TO BE REMOVED AND DISCARDED
- Δ PARTS TO BE REMOVED AND REUSED

FIGURE 3

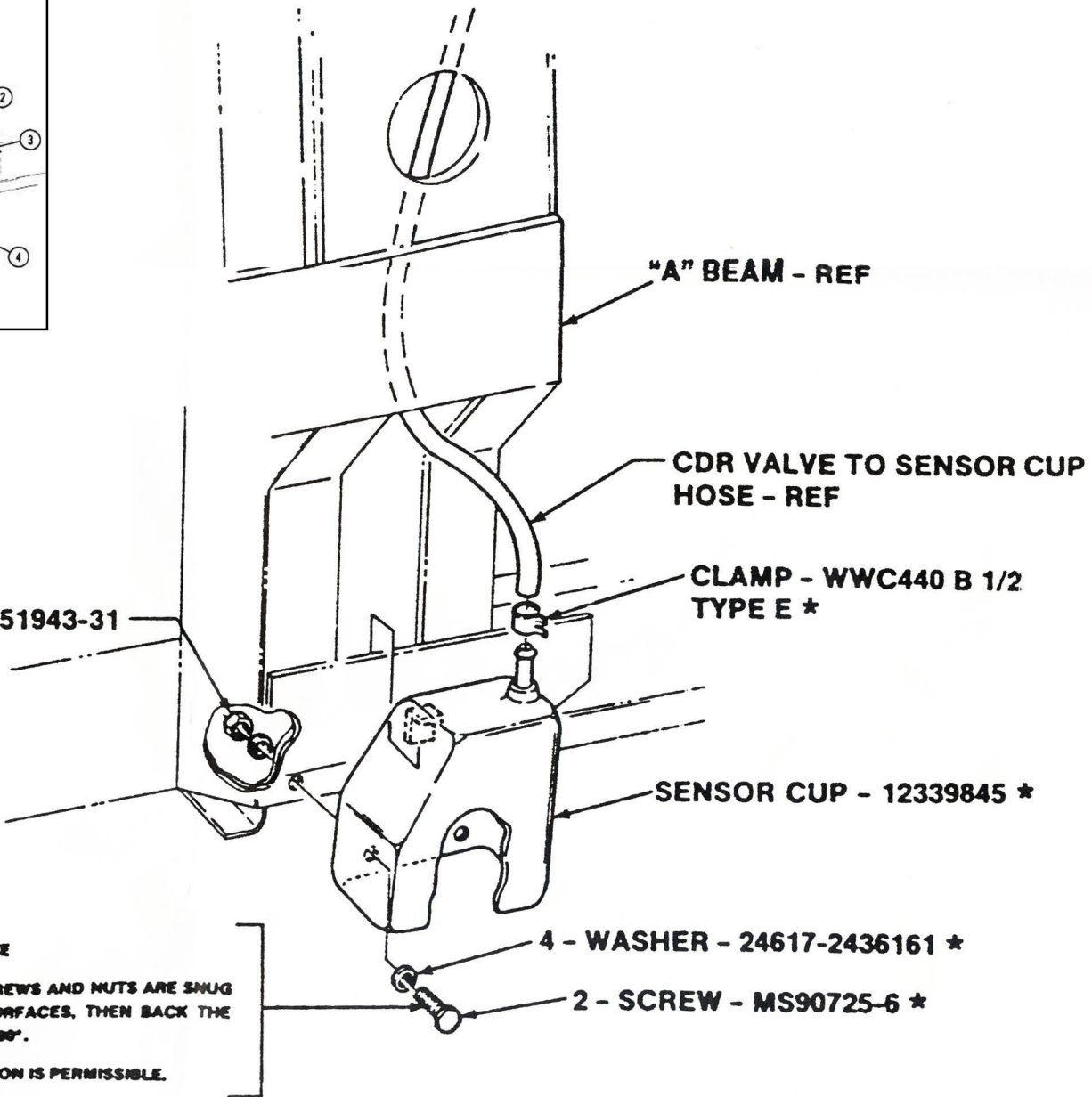
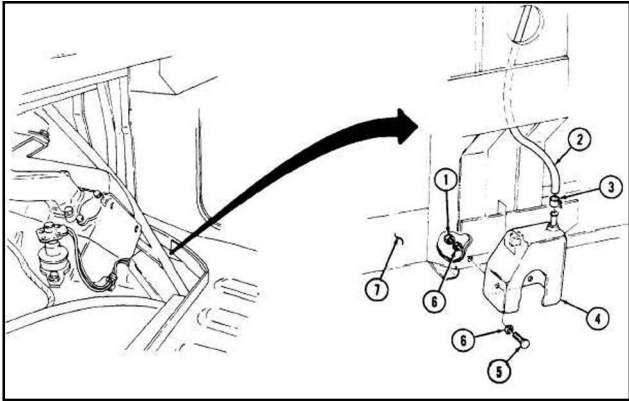


★ NEW PARTS

PARTS TO BE REMOVED AND DISCARDED

△ PARTS TO BE REMOVED AND REUSED

FIGURE 4

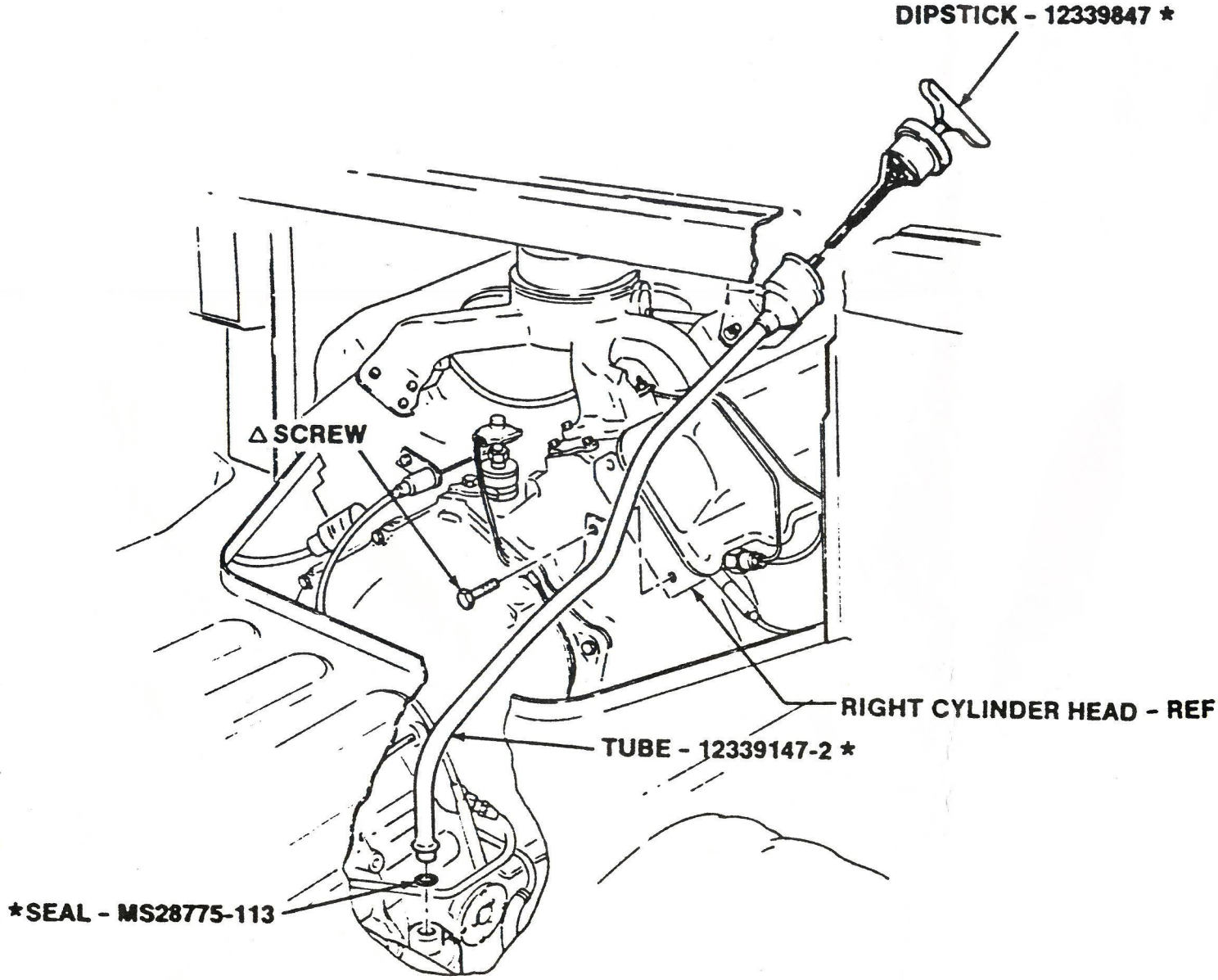


NOTE

- TIGHTEN UNTIL THE SCREWS AND NUTS ARE SNUG AGAINST INTERFACE SURFACES, THEN BACK THE NUTS OFF 1/2 TURN OR 180°.
- SCREW AND NUT ROTATION IS PERMISSIBLE.

- * NEW PARTS
- # PARTS TO BE REMOVED AND DISCARDED
- △ PARTS TO BE REMOVED AND REUSED

FIGURE 5

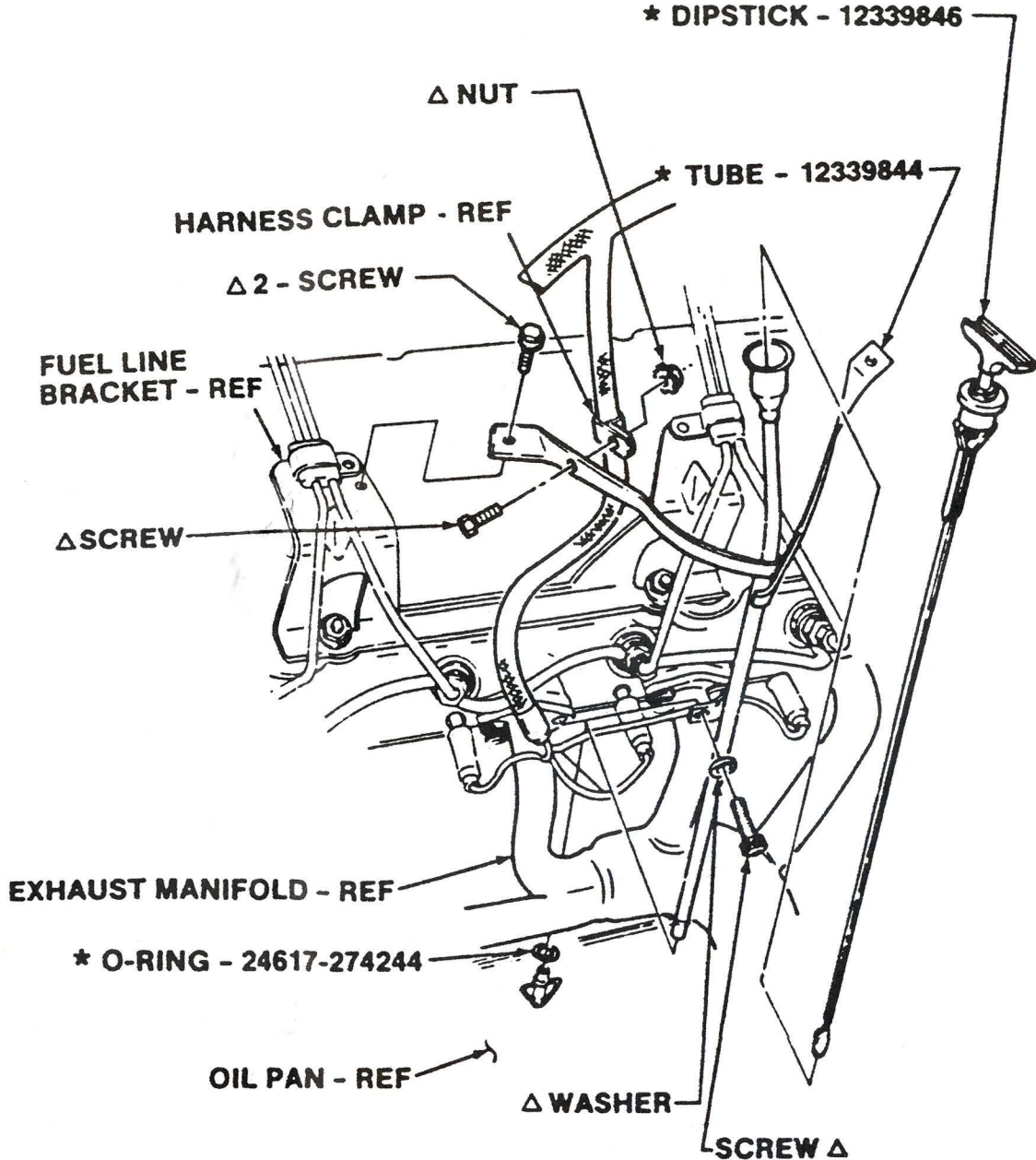


* NEW PARTS

PARTS TO BE REMOVED AND DISCARDED

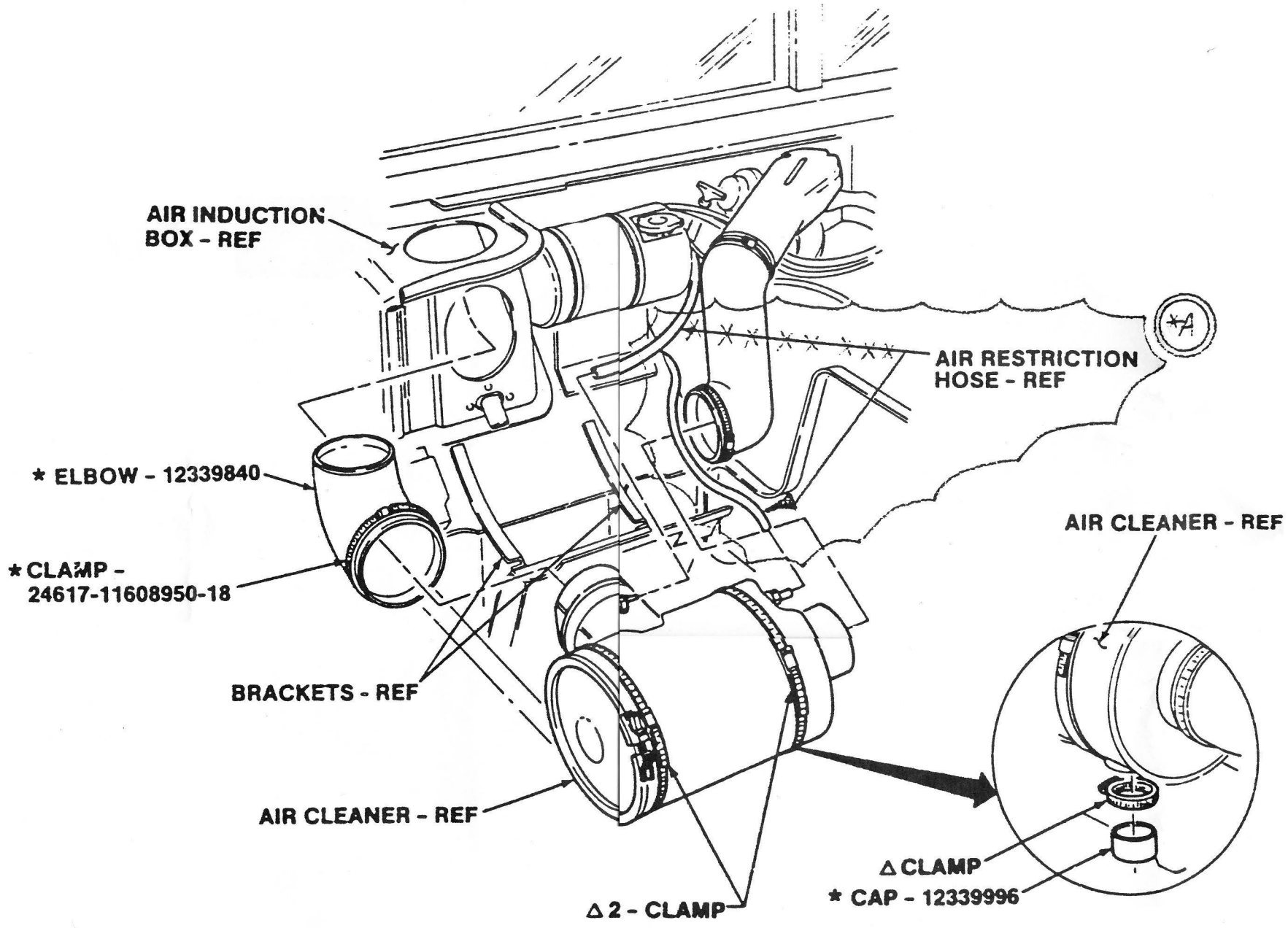
Δ PARTS TO BE REMOVED AND REUSED

FIGURE 6



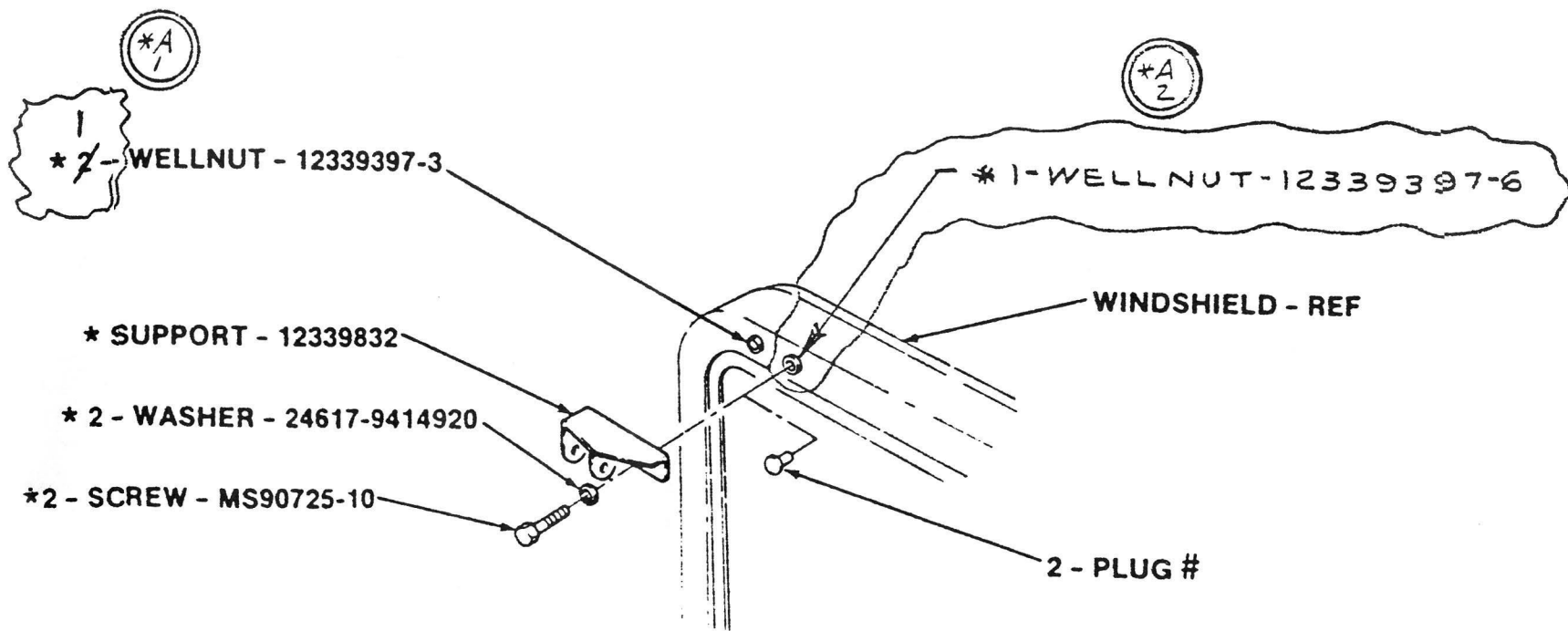
- * NEW PARTS
- # PARTS TO BE REMOVED AND DISCARDED
- Δ PARTS TO BE REMOVED AND REUSED

FIGURE 7



- * NEW PARTS
- # PARTS TO BE REMOVED AND DISCARDED
- Δ PARTS TO BE REMOVED AND REUSED

FIGURE 8

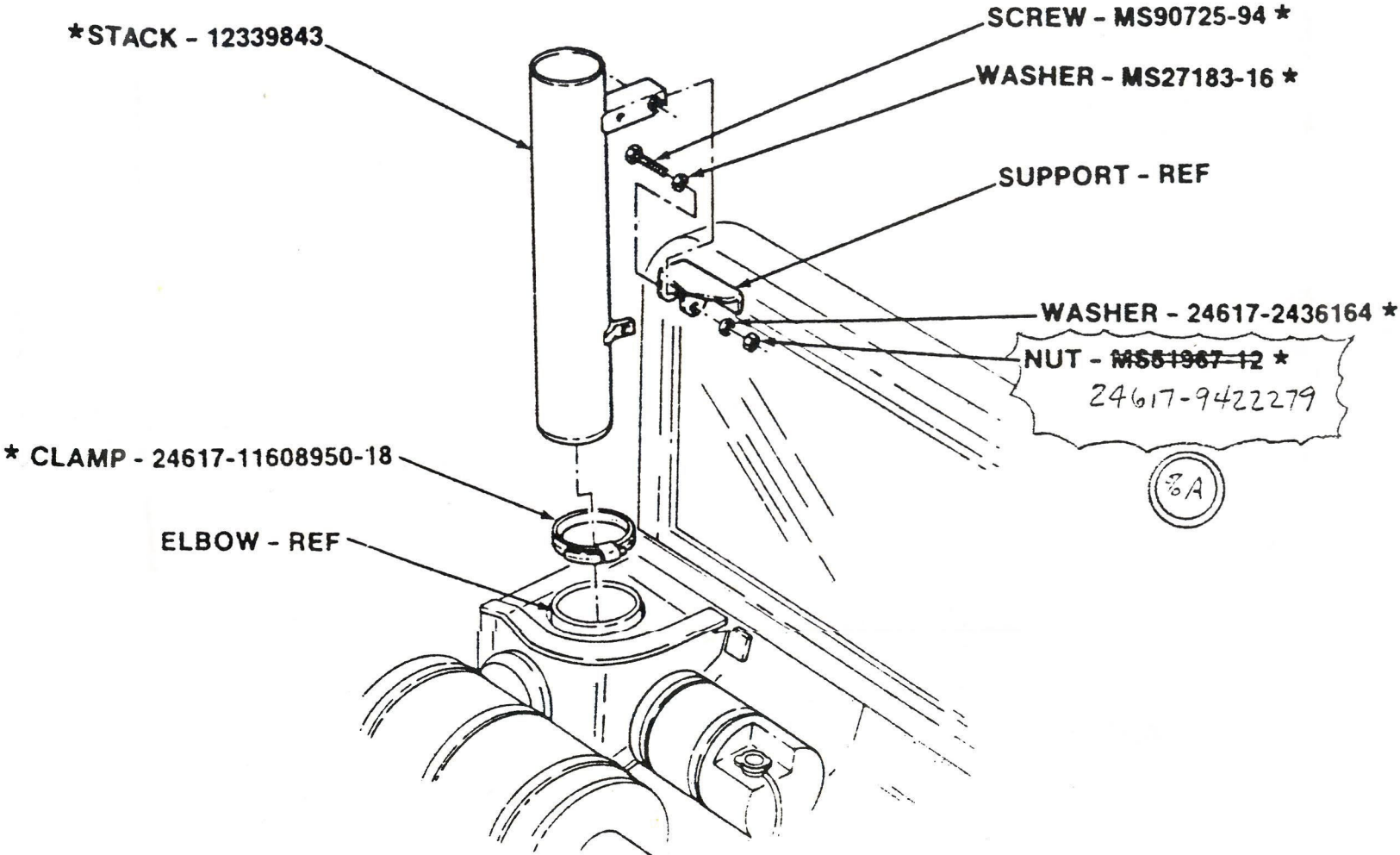


* NEW PARTS

PARTS TO BE REMOVED AND DISCARDED

△ PARTS TO BE REMOVED AND REUSED

FIGURE 9

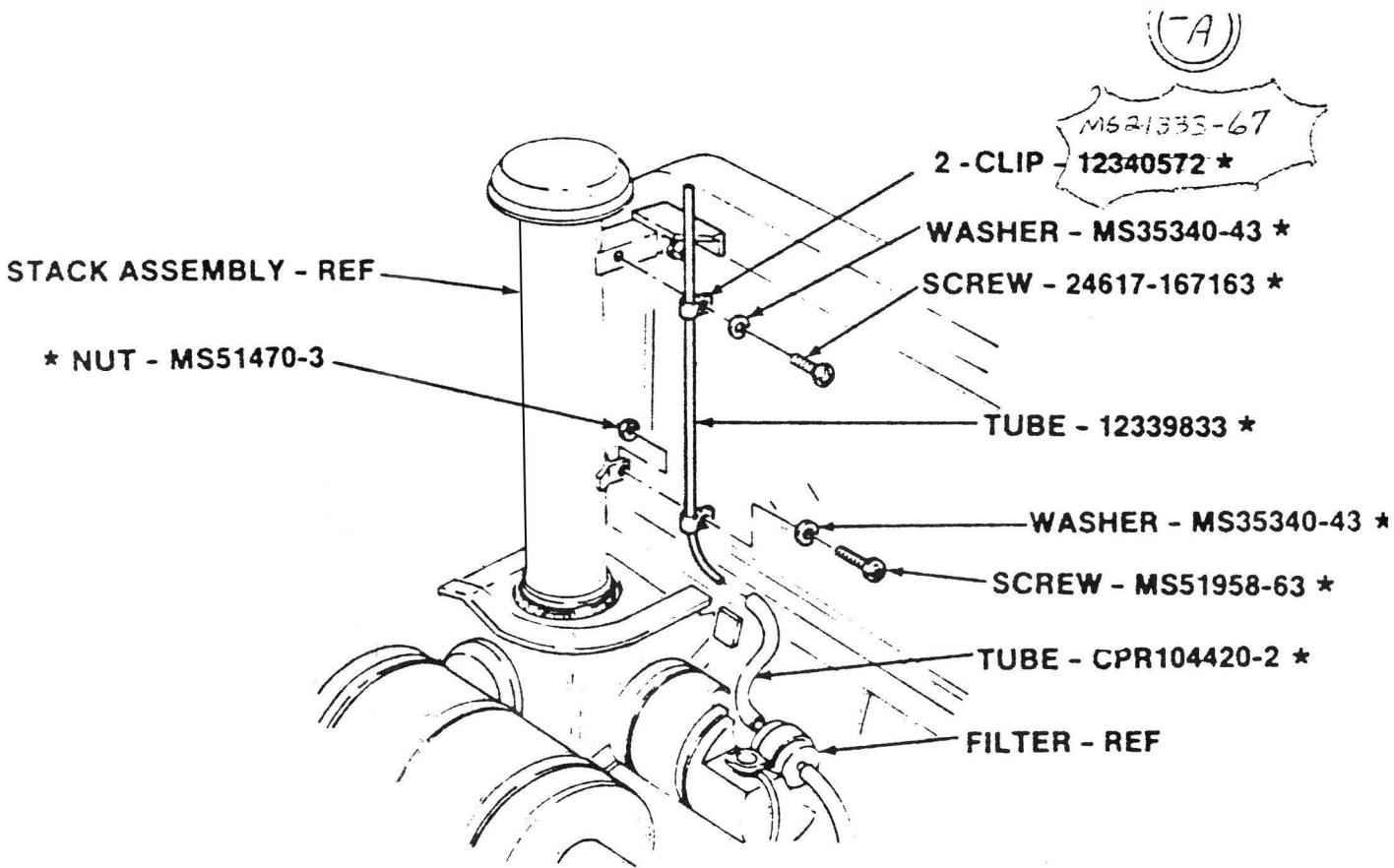


* NEW PARTS

PARTS TO BE REMOVED AND DISCARDED

△ PARTS TO BE REMOVED AND REUSED

FIGURE 10

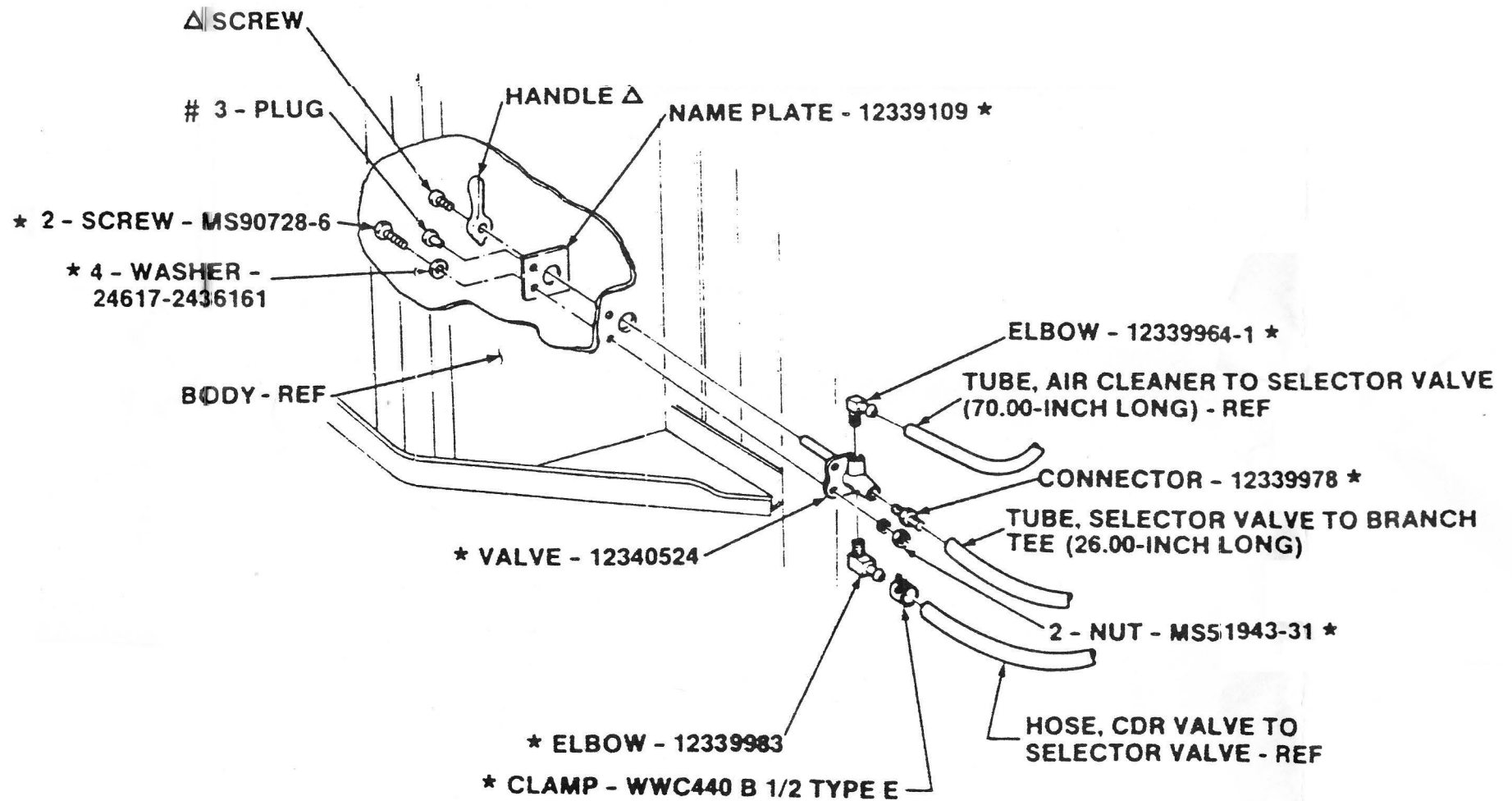


* NEW PARTS

PARTS TO BE REMOVED AND DISCARDED

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FIGURE 11

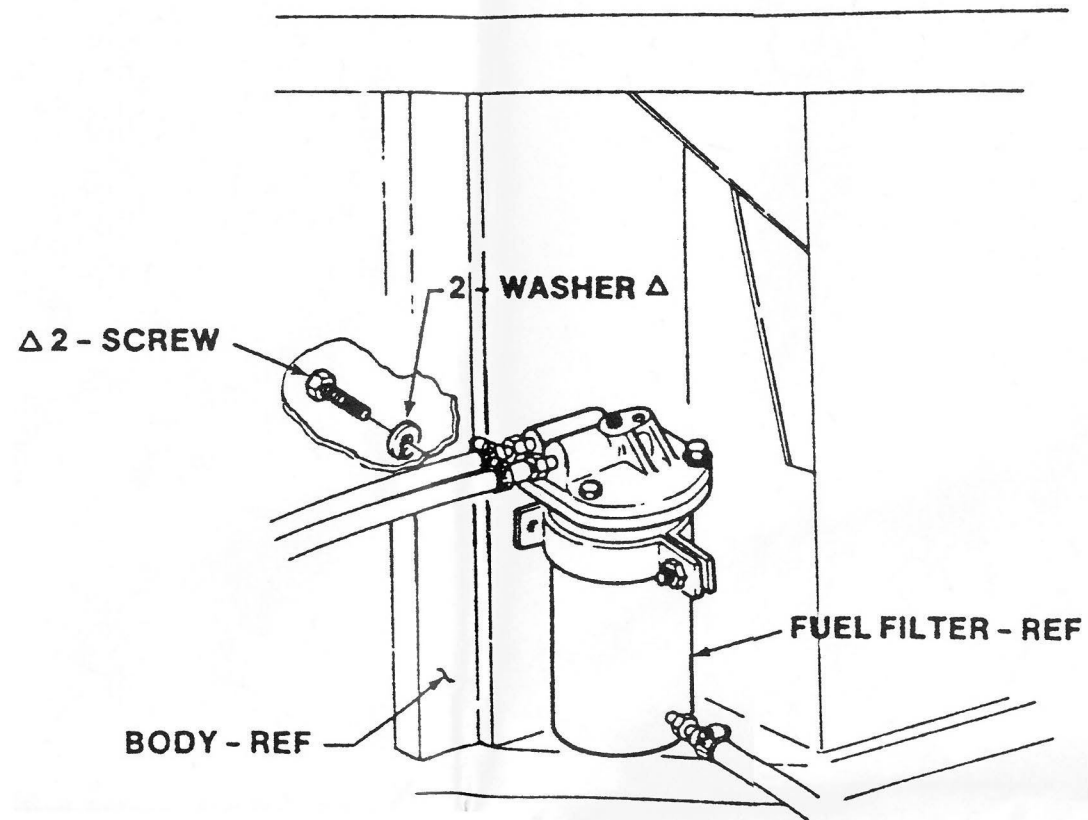


* NEW PARTS

PARTS TO BE REMOVED AND DISCARDED

Δ PARTS TO BE REMOVED AND REUSED

FIGURE 12

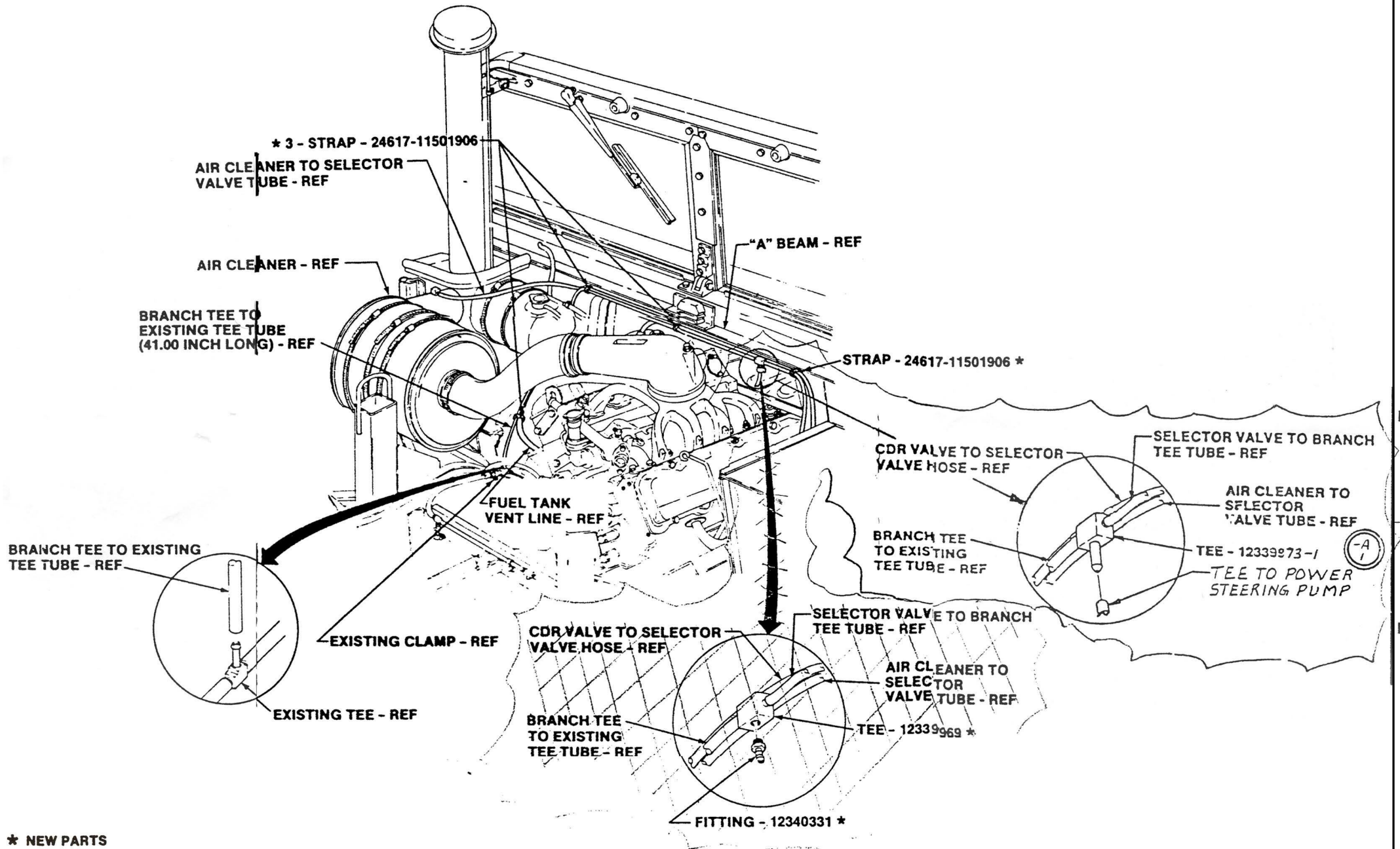


* NEW PARTS

PARTS TO BE REMOVED AND DISCARDED

Δ PARTS TO BE REMOVED AND REUSED

FIGURE 13

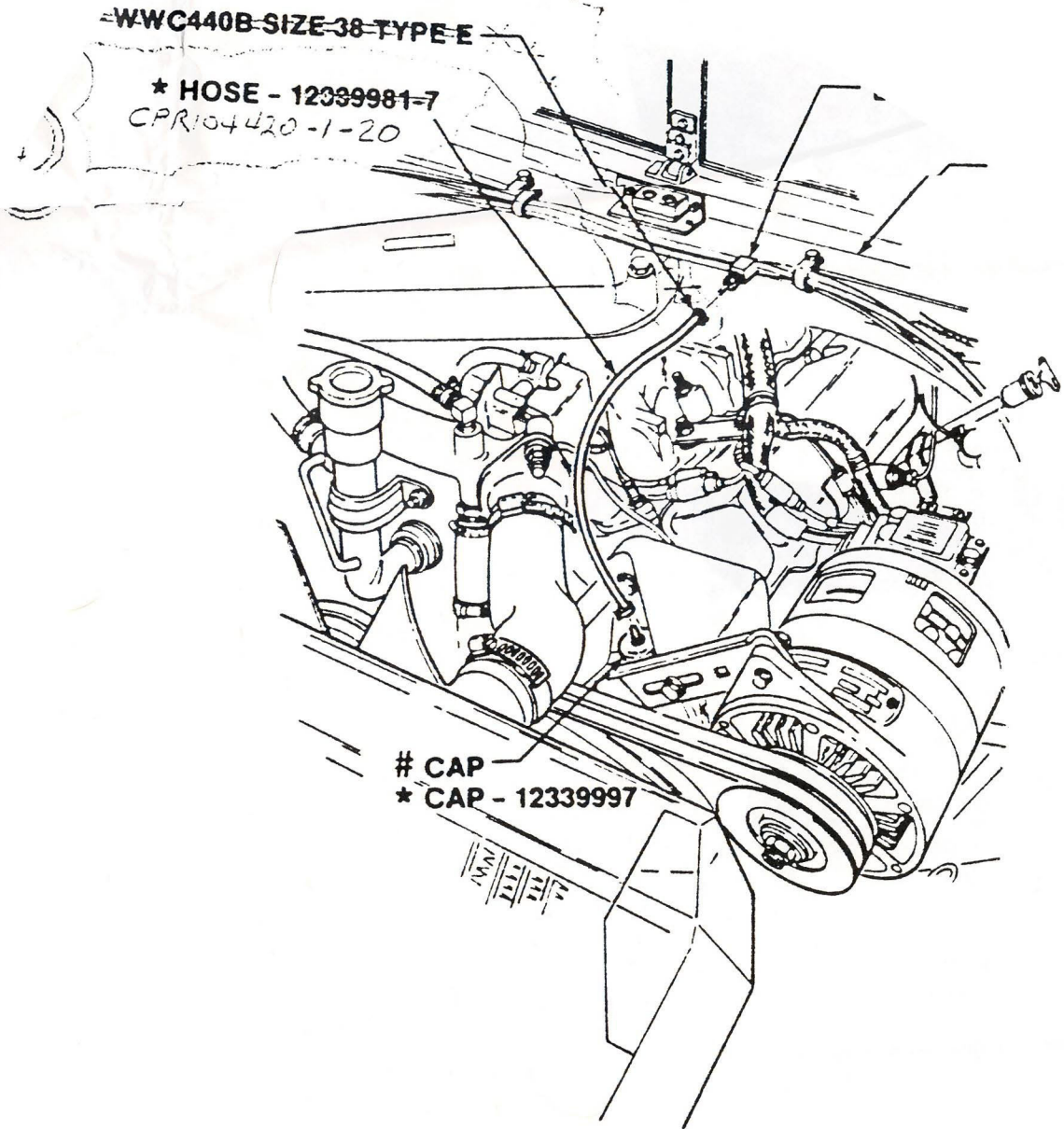


* NEW PARTS

PARTS TO BE REMOVED AND DISCARDED

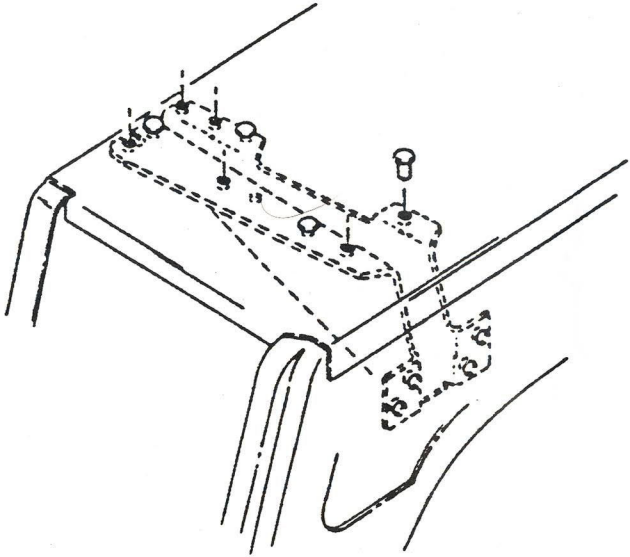
△ PARTS TO BE REMOVED AND REUSED

FIGURE 14

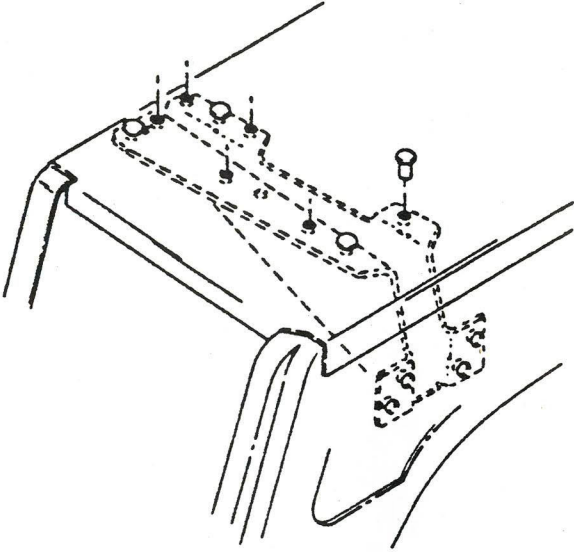


- * NEW PARTS
- # PARTS TO BE REMOVED AND DISCARDED
- △ PARTS TO BE REMOVED AND REUSED

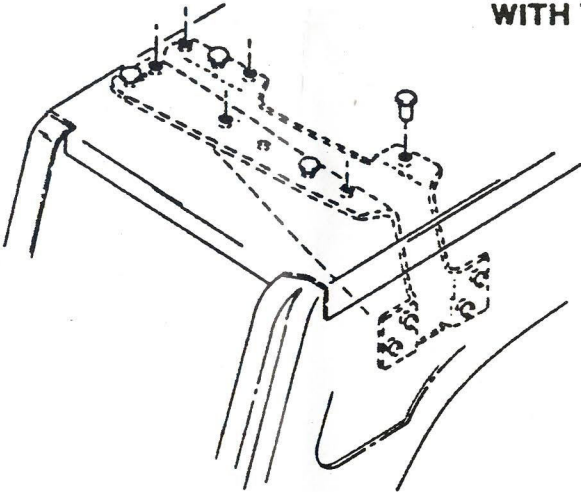
FIGURE 15



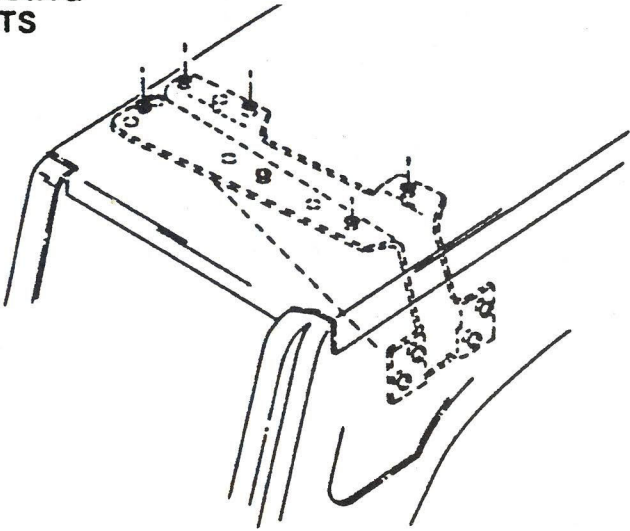
DEEP WATER FORDING WITH BATTERY RACK



DEEP WATER FORDING WITH TROOP SEATS



DEEP WATER FORDING

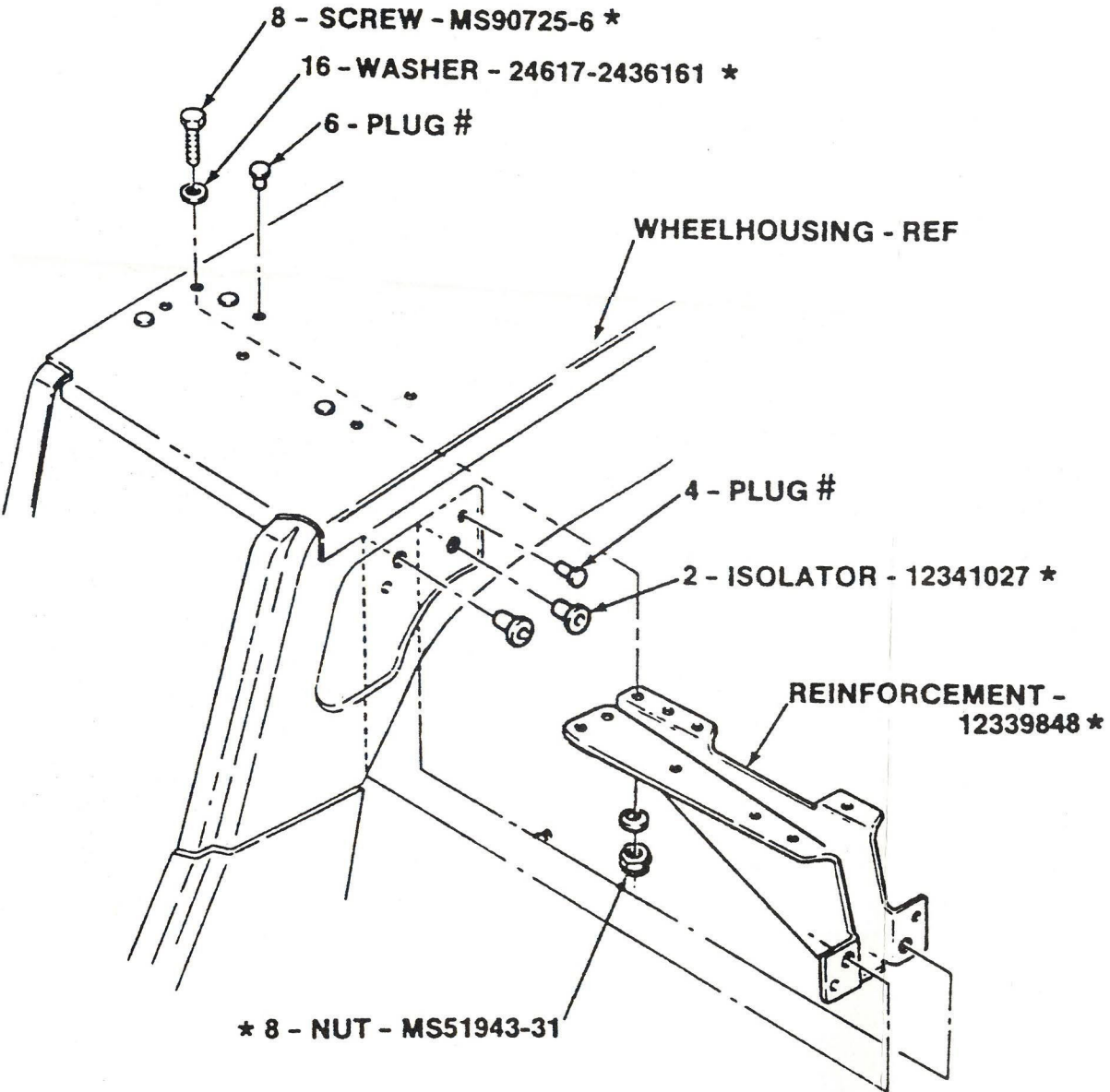


DEEP WATER FORDING WITH MARINE OR ARMY EQUIPMENT STOWAGE

REINFORCEMENT MOUNTING HOLE USAGE - REFERENCE VIEW

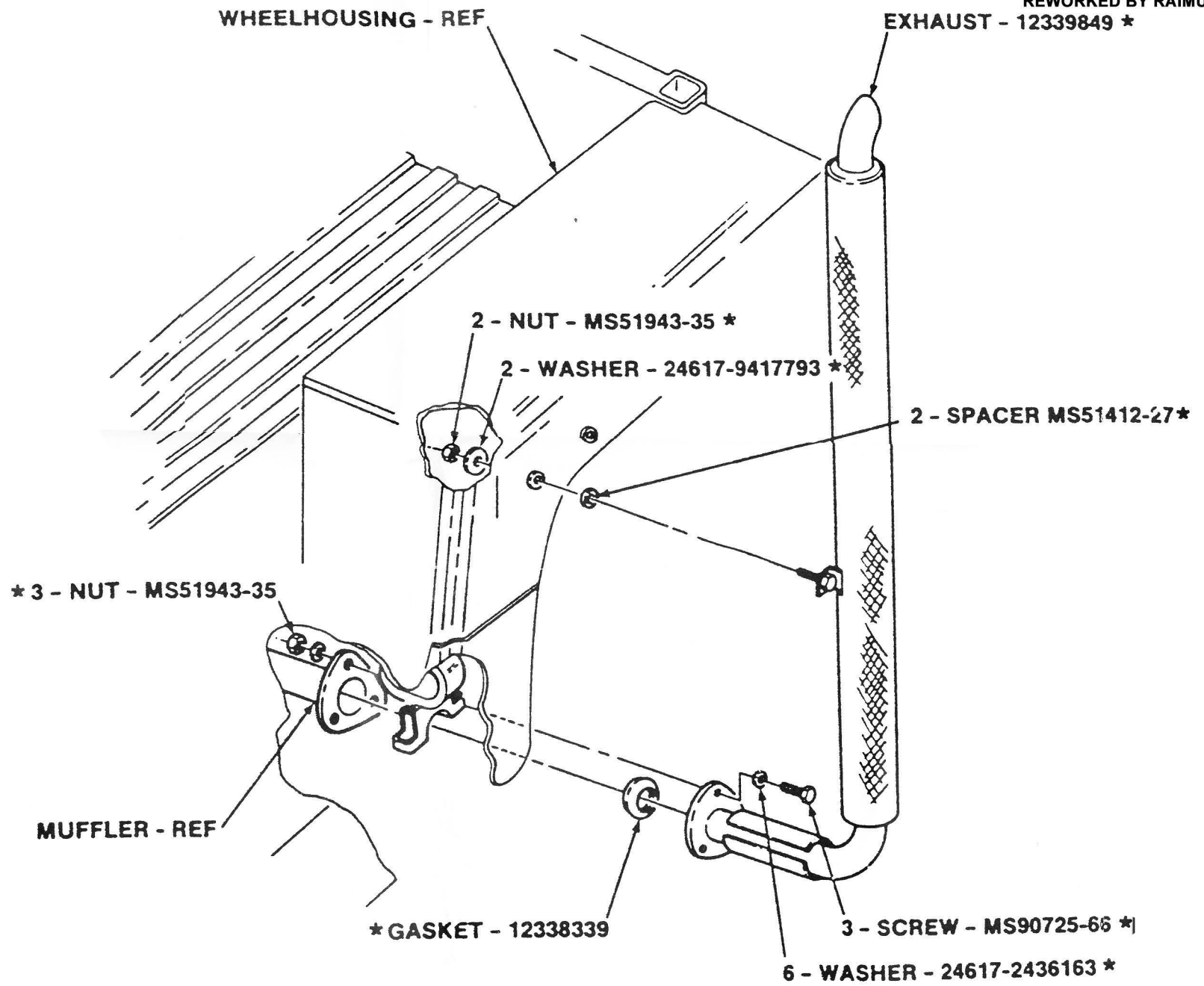
FIGURE 16

- * NEW PARTS
- # PARTS TO BE REMOVED AND DISCARDED
- △ PARTS TO BE REMOVED AND REUSED



- * NEW PARTS
- # PARTS TO BE REMOVED AND DISCARDED
- △ PARTS TO BE REMOVED AND REUSED

FIGURE 17



* NEW PARTS

PARTS TO BE REMOVED AND DISCARDED

△ PARTS TO BE REMOVED AND REUSED

FIGURE 18

2-37. DEEP WATER FORDING OPERATION

a. General. The deep water fording kit allows M998 series vehicles to ford water up to 60 in. (152 cm) deep.

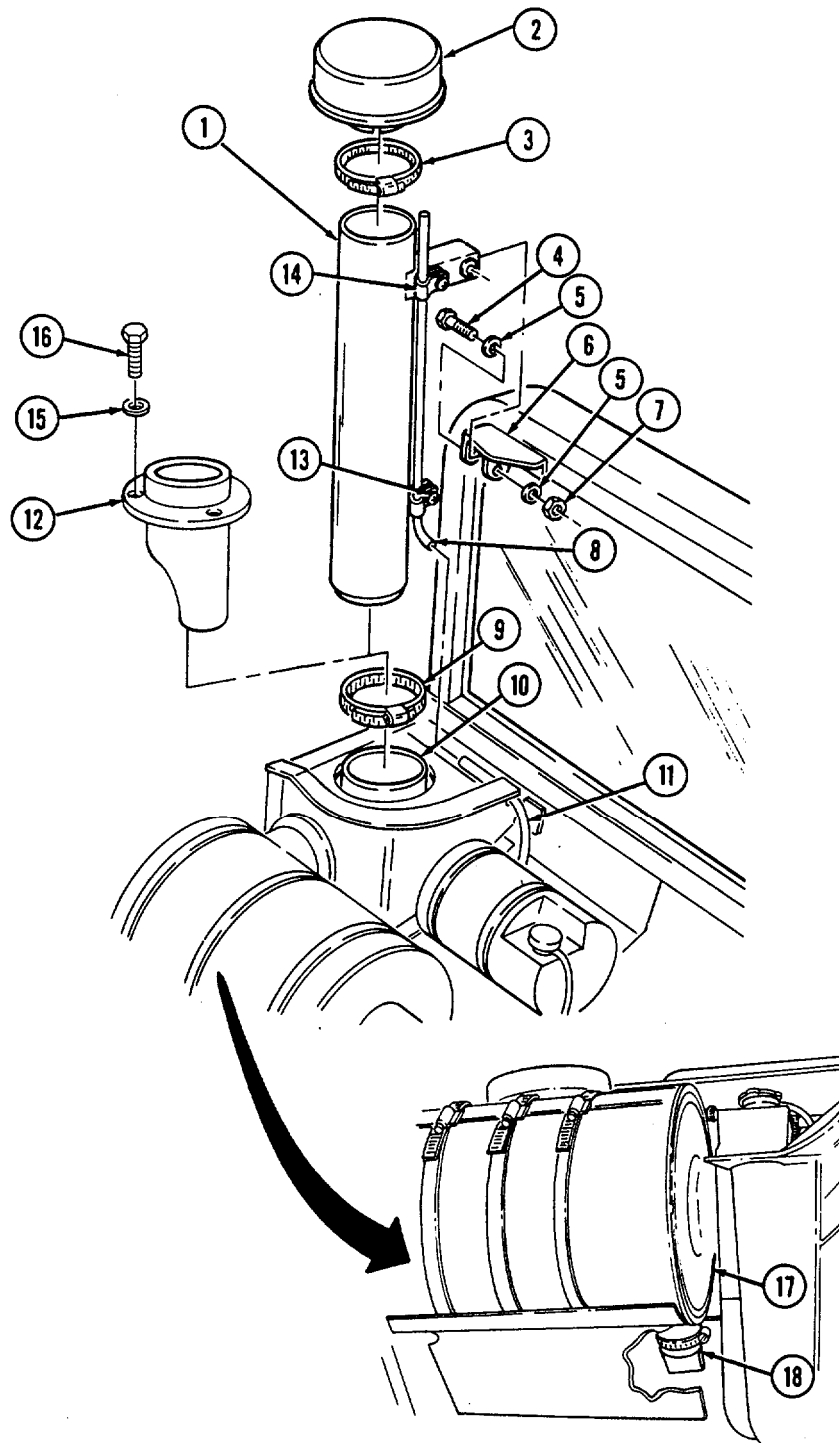
CAUTION

Never attempt deep water fording unless water depth is known to be 60 in. (152 cm) or less, and bottom is known to be hard. Do not exceed 5 mph (8 kph) during fording operation. Damage to vehicle will result.

b. Before Operation.**NOTE**

Retain all parts removed for reuse.

- (1) Raise and secure hood (para. 3-8).
- (2) Loosen clamp (3) and remove weathercap (2) and clamp (3) from shield (12).
- (3) Remove three capscrews (16), washers (15), and shield (12) from cowling (10). Stow shield (12).
- (4) Install intake assembly vent tube (8) on air intake assembly (1) with two clips (14) and screws (13).
- (5) Install air intake assembly (1) and clamp (9) into cowling (10) and tighten clamp (9).
- (6) Connect fuel tank vent line (11) to intake assembly vent tube (8).
- (7) Install air intake assembly (1) on windshield mounting bracket (6) with washer (5), capscrew (4), washer (5), and nut (7).
- (8) Install clamp (3) and weathercap (2) on air intake assembly (1) and tighten clamp (3).
- (9) Ensure that rubber cap (18) on the bottom of air cleaner body (17) is secure.



WARNING

Exhaust system components are hot after prolonged vehicle use. Ensure exhaust system components are cool before removing/ installing exhaust assembly. Failure to do this will result in injury to personnel.

NOTE

Any items removed for fording must be stowed for reuse.

(10) Remove three locknuts (17), washers (9), capscrews (10), and washers (9) securing tailpipe (11) to muffler (16).

(11) Remove two nuts (15), lockwashers (14), and U-bolt (12) securing tail-pipe (11) to clamp (13).

(12) Remove tailpipe (11) and gasket (8) from muffler (16).

(13) Install two rubber isolators (5) into wheelhouse (6). To ease installation, wet rubber isolators (5) with water.

(14) If isolators (5) cannot be installed easily, check alignment of holes in wheelhouse (6) and reinforcement bracket (3). To align holes, loosen capscrews (4) securing reinforcement bracket (3) to wheelhouse (6). Align holes in wheel-house (6) and reinforcement bracket (3) and tighten capscrews (4). Install isolators (5).

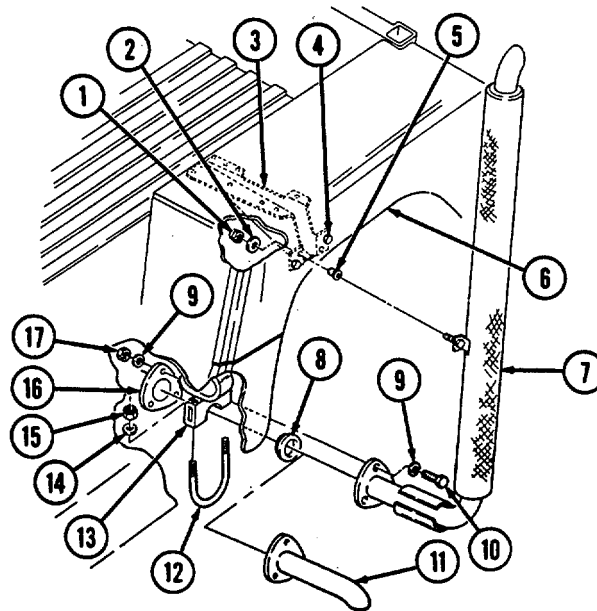
(15) Install exhaust assembly (7) and gasket (8) on muffler (16) with three washers (9), capscrews (10), washers (9), and locknuts (17).

(16) Install exhaust assembly (7) on wheelhouse (6) with two washers (2) and locknuts (1).

(17) Ensure oil dipstick, transmission dipstick, oil filler cap, and fuel tank cap are secure.

(18) Secure all loose objects on vehicle.

(19) Ensure battery caps are all present and tight.



WARNING

Do not allow tools to come in contact with vehicle when disconnecting or connecting slave receptacle cable. Tool contact with vehicle will result in a direct short, causing instant heating of tool, tool damage, and injury to personnel.

NOTE

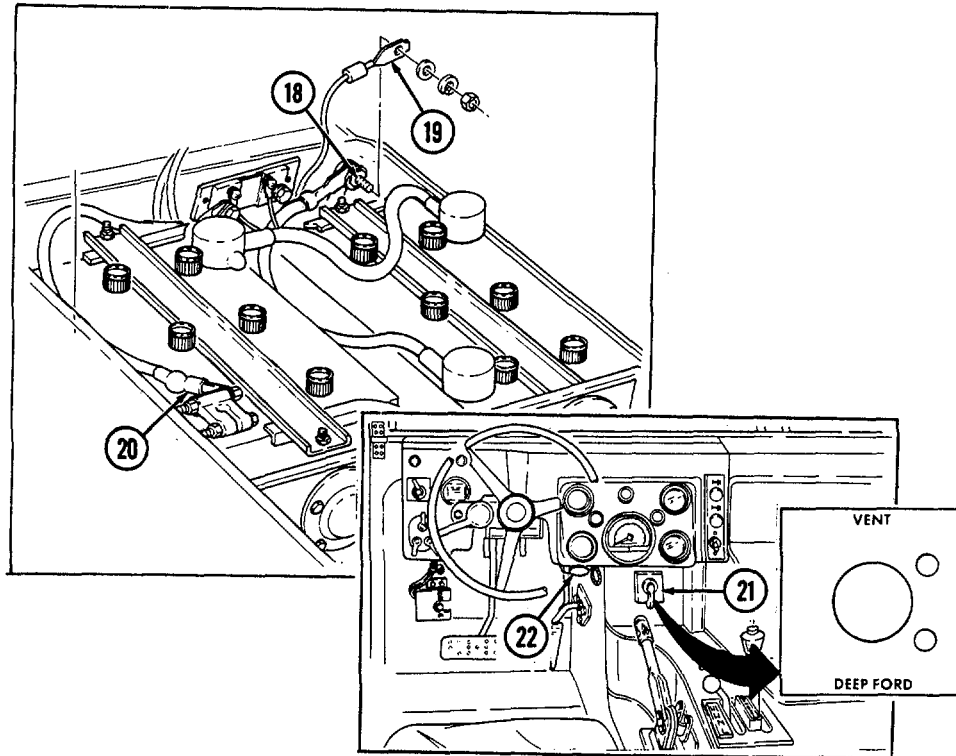
Perform steps 20 through 22 only if fording in salt water.

- (20) Disconnect battery ground cable (20).

NOTE

Battery positive cable must remain on power stud.

- (21) Disconnect slave receptacle positive lead 49A (19) at power stud (18).
- (22) Connect battery ground cable (20).
- (23) Place transfer case shift lever in appropriate range (table 1-9).
- (24) Turn off all non-essential electrical loads (lights, fan, heater/defroster).
- (25) Place fording selector switch (21) in "DEEP FORD" position prior to entering water.
- (26) Pull out hand throttle (22) until desired engine speed is obtained. Twist hand throttle (22) to lock in position.
- (27) Open driver and passenger windows.



c. **During Operation.**

WARNING

Entering water too fast will cause water to splash up over hood and into air intake. The engine may stop abruptly and will not crank. Do not continue starting efforts; damage to engine will result.

NOTE

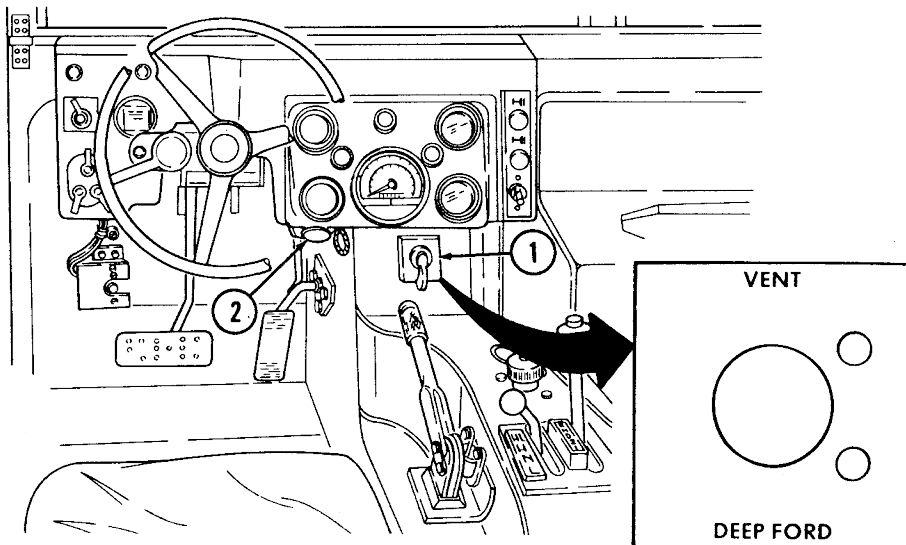
Perform step 1 for M996, M996A1, M997, M997A1, and M997A2 vehicles.

- (1) Enter water until water level has reached the bottom of the driver and passenger windows, stop for a two minute waiting period to allow the ambulance body to fill with water, then proceed with operations.
- (2) Enter water slowly and maintain even vehicle speed, 5 mph (8 kph) maximum.
- (3) Exit water in area with gentle slope.
- (4) Place fording selector switch (1) in "VENT" position upon leaving water.

WARNING

After fording do not use the hand throttle as an automatic speed or cruise control. The hand throttle does not automatically disengage when brake is applied, resulting in increased stopping distances and possible hazardous and unsafe operation. Injury to personnel or damage to equipment may result.

- (5) Unlock and push in hand throttle (2).



WARNING

Do not rely on service brakes after fording until the brakes dry out. Keep applying brakes until uneven braking ceases. Failure to do this may cause damage to vehicle, and injury or death to personnel.

- (6) Place transfer case shift lever in desired range.

NOTE

- Hydrostatic lock is caused by the entry of substantial amounts of water into the engine through the air intake system and subsequent contamination of the fuel system. Hydrostatic lock most frequently occurs during or just after fording. Water is forced into the air intake system, drawn into the engine, and effectively "locks-up" the engine.
- Notify unit maintenance if you suspect hydrostatic lock, and they will further test the engine.

d. After Operation.

WARNING

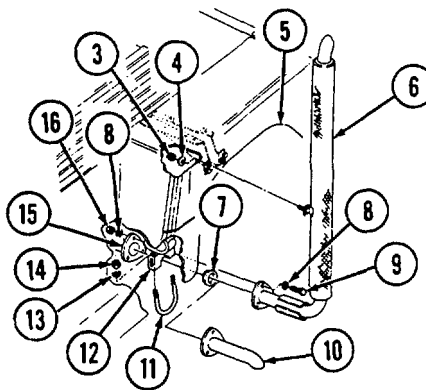
Exhaust system components are hot after prolonged vehicle use. Ensure exhaust system components are cool before removing/ installing exhaust assembly. Failure to do this will result in injury to personnel.

- (1) Stop engine.

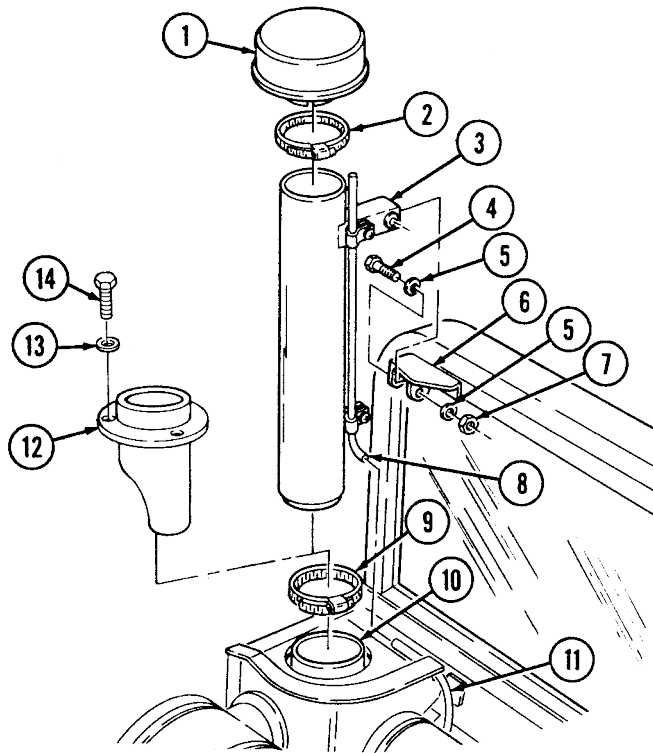
NOTE

- Steps 2 through 13 are performed only if required.
- If accumulated water drains slowly through the holes, refer to unit maintenance for drilling and improving drain holes.

- (2) Remove three locknuts (16), washers (8), capscrews (9), washers (8), gasket (7), and exhaust assembly (6) from muffler (15).
- (3) Remove two locknuts (3), washers (4), and exhaust assembly (6) from wheelhouse (5).
- (4) Install gasket (7) and tailpipe (10) on muffler (15) with three washers (8), capscrews (9), washers (8), and locknuts (16).
- (5) Install clamp (12) on tailpipe (10) with U-bolt (11), two lockwashers (13), and nuts (14).



- (6) Loosen clamp (2) securing weathercap (1) to air intake assembly (3) and remove weathercap (1).
- (7) Remove nut (7), washer (5), capscrew (4), washer (5), and air intake assembly (3) from windshield mounting bracket (6).
- (8) Disconnect fuel tank vent line (11) from intake assembly vent tube (8).



- (9) Loosen clamp (9) securing air intake assembly (3) to cowling (10) and remove air intake assembly (3) and clamp (9).
- (10) Install shield (12) in cowling (10) with three washers (13) and capscrews (14).
- (11) Install weathercap (1) and clamp (2) on shield (12) and tighten clamp (2).
- (12) Lower and secure hood (para. 3-8).
- (13) Clean and stow intake and exhaust assembly components.
- (14) If fording operation was through salt water, wash and wipe off all salt deposits as soon as possible.

NOTE

To prevent parking brake linkage from binding, lithium grease should be used after operating in mud. Clean mud, grit, and debris from linkage. Apply lithium grease (Appendix D, Item 10.1) and move linkage back and forth to work into joints.

- (15) Vehicles completing deep water fording operation must be lubricated and serviced by unit maintenance as soon as possible.

NOTE

Perform steps 16 through 20 only if fording was in salt water.

(16) Slide rubber boot (15) back and inspect slave receptacle (16) for evidence of corrosion, RTV wash out, or salt water penetration of RTV sealant. If any evidence of these conditions is found, report vehicle to unit maintenance for corrective action. Do not connect slave receptacle positive lead (17).

(17) If no evidence of corrosion, RTV wash out, or salt water penetration of the RTV sealant is found, slide rubber boot (15) on slave receptacle (16).

WARNING

Do not allow tools to come in contact with vehicle when disconnecting or connecting slave receptacle cable. Tool contact with vehicle will result in a direct short, causing instant heating of tool, tool damage, and injury to personnel.

(18) Disconnect battery ground cable (18).

(19) Connect slave receptacle positive lead 49A (17) at power stud (19).

(20) Connect battery ground cable (18).

