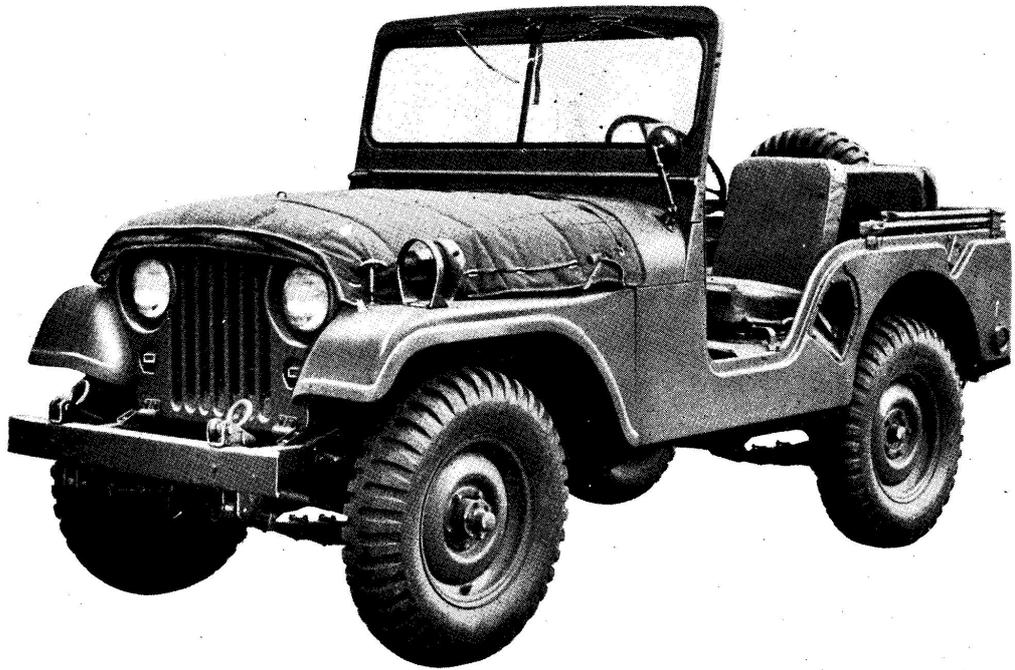


**INSTALLATION INSTRUCTIONS
CONVERSION POWER PLANT
HEATER KIT**



**1/4-TON 4 x 4 UTILITY TRUCK M38A1
(24 VOLT)**

KEEP MANUAL WITH VEHICLE

IMPORTANT

**Complete Operating and Maintenance
Instructions for the Heater are in the
Model 460 Heater Service Manual which
is included with the Kit.**

PERFECTION STOVE COMPANY
CLEVELAND 4, OHIO, U. S. A.

INSTALLATION INSTRUCTIONS
FOR
CONVERSION POWER PLANT HEATER KIT - 24 VOLT
ON
1/4 - TON 4 x 4 UTILITY TRUCK M38A1

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GENERAL INSTRUCTIONS

NOTE: Before starting heater installation, refer to the exploded parts views, on pages 25 and 28. These drawings, in conjunction with the numerical parts list and installation sketch will provide identification of parts and installation referred to in the following procedure.

INTERFERENCE WITH VEHICLE

In some cases it may be found that due to previous modifications or damage to a vehicle, it is impossible to install the engine power plant heater kit exactly as directed. In such cases, installation personnel, under the direction and at the discretion of a competent supervisor, should resort to a field expedient to overcome the interference with the particular vehicle and alter the installation procedure accordingly.

All rights and lefts mentioned in this manual are vehicle rights and lefts.

Permatex all coolant system connections.

DO NOT USE PERMATEx IN FUEL LINE CONNECTIONS.

INSTALLATION PROCEDURE

Step 1. Preparation of Vehicle for Installation.

- a. Drain the radiator and block according to TM 9-804A.
- b. Remove the vehicle air cleaner according to TM 9-804A.
- c. Disconnect the battery leads. Remove the battery hold-down frames and the batteries. Retain these parts for re-installation.

Step 2. Installation of Battery Heating Pads.

- a. Remove the lower battery compartment cover underneath the vehicle dash panel, Fig. 1.
- b. Place the piece of insulation marked "A" on the left side of the lower battery compartment cover, and the piece marked "B" on the right side.
- c. Place the battery pad with the 4-7/8" hose connector on the right side of the battery compartment cover. Place the other pad in place on the left side of the cover and connect the two as shown in Fig. 2. With these parts in place, return the cover to its original position.

- d. Place the piece of insulation marked "C" on the left side of the battery compartment and the piece marked "D" on the right side of the compartment. Place the insulation marked "H" in the rear of the compartment and the piece marked "E" in the forward edge of the compartment.
- e. Return the batteries and the battery hold-down frames to their original positions, and secure by tightening the hold-down screws.
- f. Connect the jumper cable and the positive cable to the battery terminals.

CAUTION:

As a safety precaution do not connect the negative (ground) cable to the battery at this time.

- g. Drill six 3/16" holes in the battery compartment cover. Refer to Fig. 3 for the approximate location of these holes.
- h. Using the clips and retainers supplied in the kit, attach the piece of insulation marked "F" to the battery compartment cover.

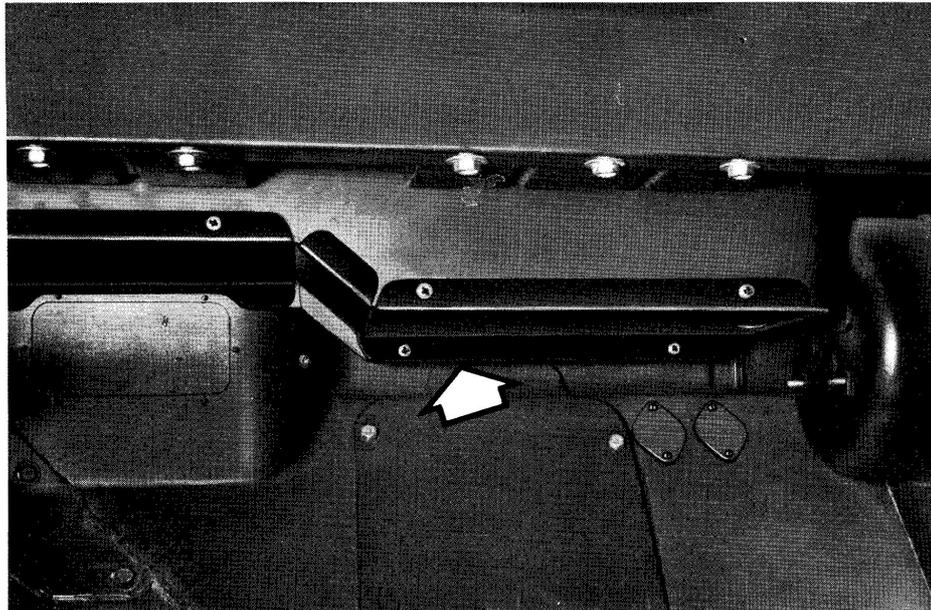


Fig. 1. Lower battery compartment cover.

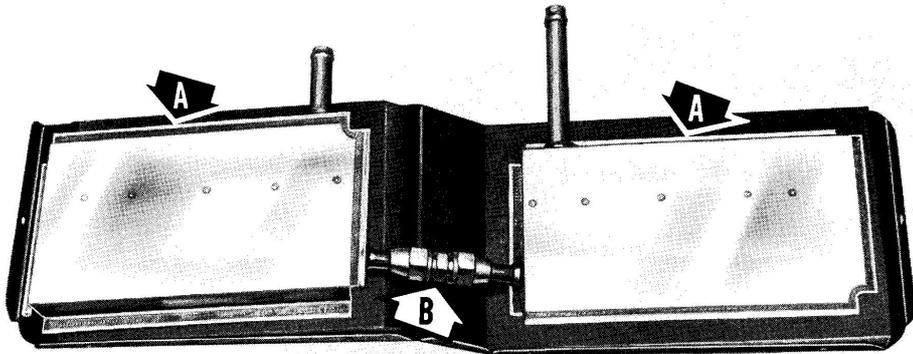


Fig. 2. (A) Battery pads and insulation in position. (B) Battery pads connected.

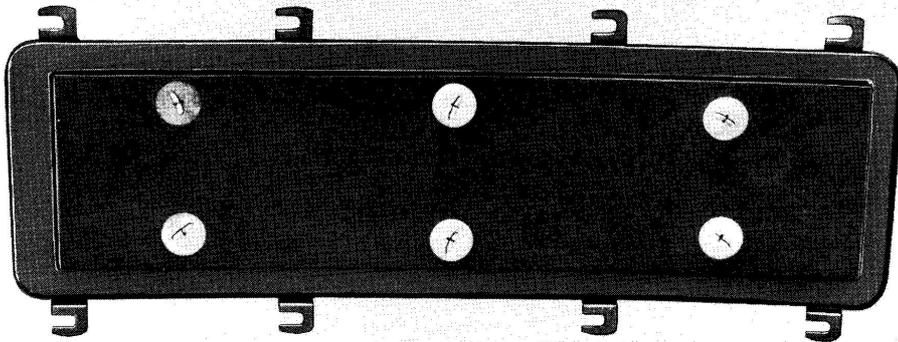


Fig. 3. Insulation attached to battery compartment cover.

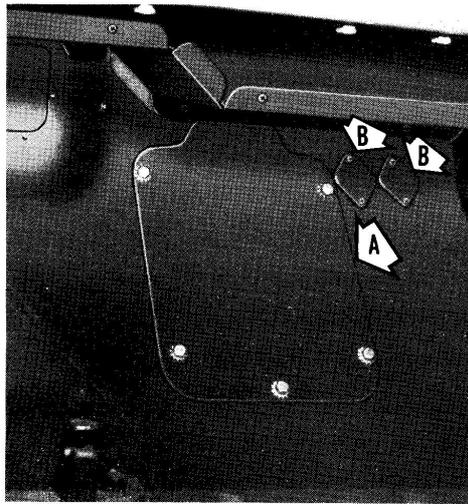


Fig. 4. (A) Plate to be removed for installation of engine heater. (B) Plates to be removed for installation of slave receptacle.

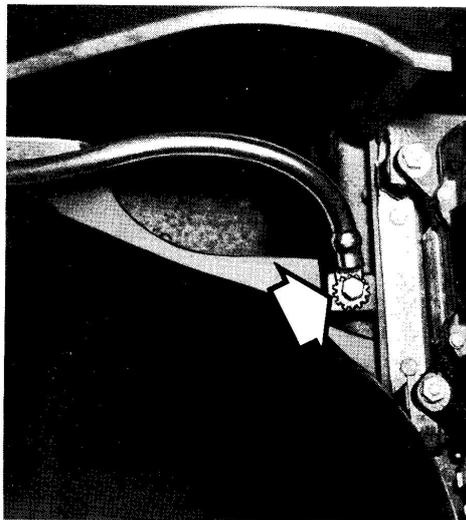


Fig. 5. Battery ground lead to be disconnected.

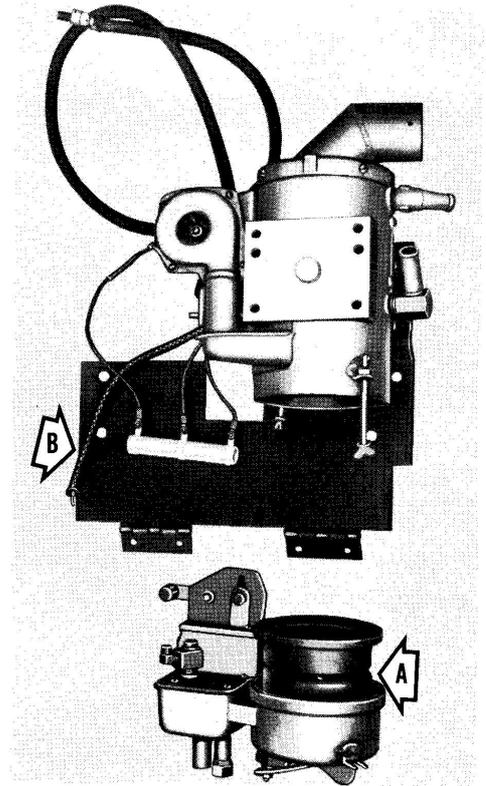


Fig. 6. (A) Burner bowl removed. (B) Igniter wire disconnected.

Step 3. Installation of Engine Heater Assembly.

- a. Remove the plate covering the engine heater compartment on the right hand side of the floorboard, Fig. 4.
- b. Disconnect the battery ground lead located just to the right of the voltage regulator, Fig. 5.
- c. Remove the burner bowl from the heater and Disconnect the igniter wire, Fig. 6.
- d. Using the existing holes, install the heater by bolting it with the 5/16" bolts supplied in the kit to the right hand frame member of the vehicle, Figs. 7 and 8.
- e. Using the rear section of the heater mounting bracket as a template locate and drill two 11/32" holes in the vehicle frame member.

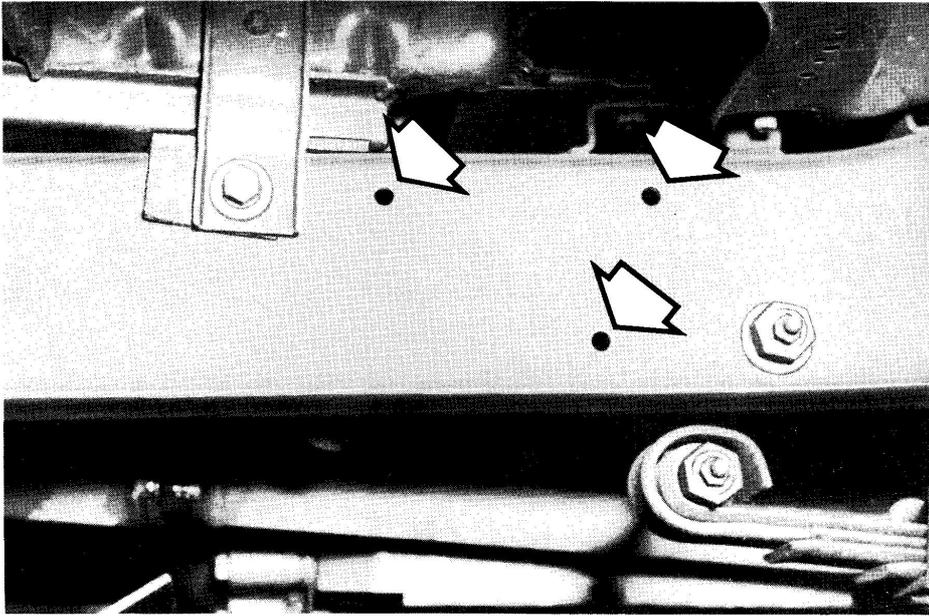


Fig. 7. Holes in vehicle frame member, right side.

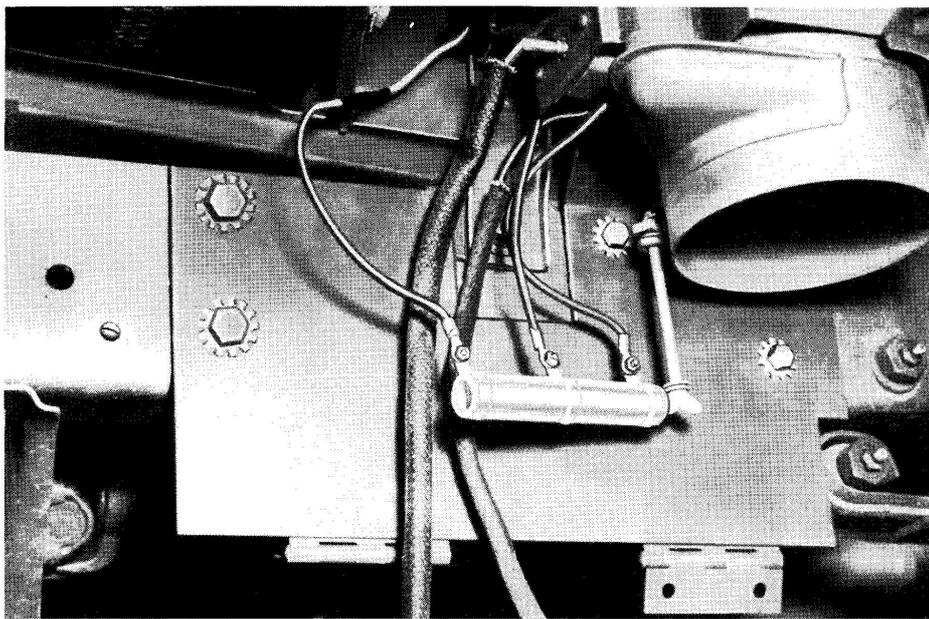


Fig. 8. Heater mounted to vehicle frame member.

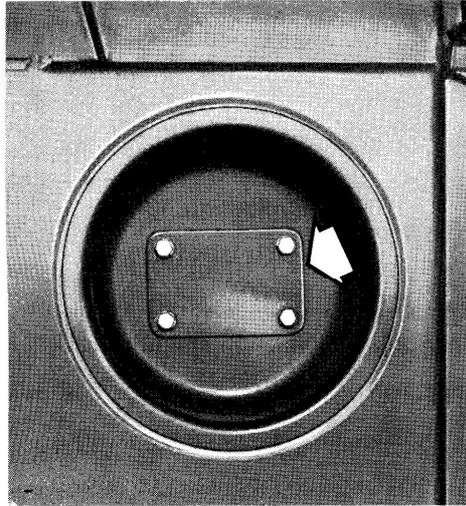


Fig. 9. Cover plate to be removed from right side of vehicle.

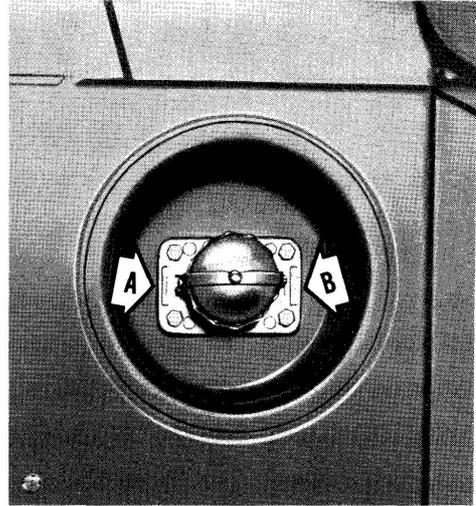


Fig. 10. Slave receptacle installed. (A) Negative side. (B) Positive side.

CAUTION:

Care must be taken so as not to cut the speedometer cable during this operation.

- f. Mount the rear section of the heater mounting bracket to the vehicle frame member with two 5/16" bolts supplied in the kit, Fig. 8.
- g. Return the burner bowl to its original position and connect the igniter wire.

Step 4. Installation of Slave Receptacle.

- a. Remove the cover plate in the recess on the right hand side of the vehicle, Fig. 9.
- b. Install the slave receptacle as shown in Fig. 10 with the negative lead toward the rear of the vehicle and the positive toward the front.
- c. Remove the cover plates on the right hand side of the floorboard, Fig. 4.
- d. Pass the positive and negative leads of the slave receptacle through the floorboard and into the engine compartment as shown in Fig. 11.
- e. Connect the positive lead, with the positive battery cable, to the starter switch terminal; and the negative lead, with the battery ground lead, to the vehicle ground post, Fig. 12.

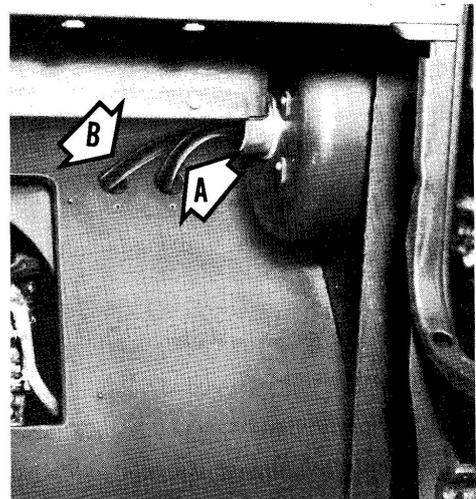


Fig. 11. (A) Negative lead routed through floorboard. (B) Positive lead routed through floorboard.

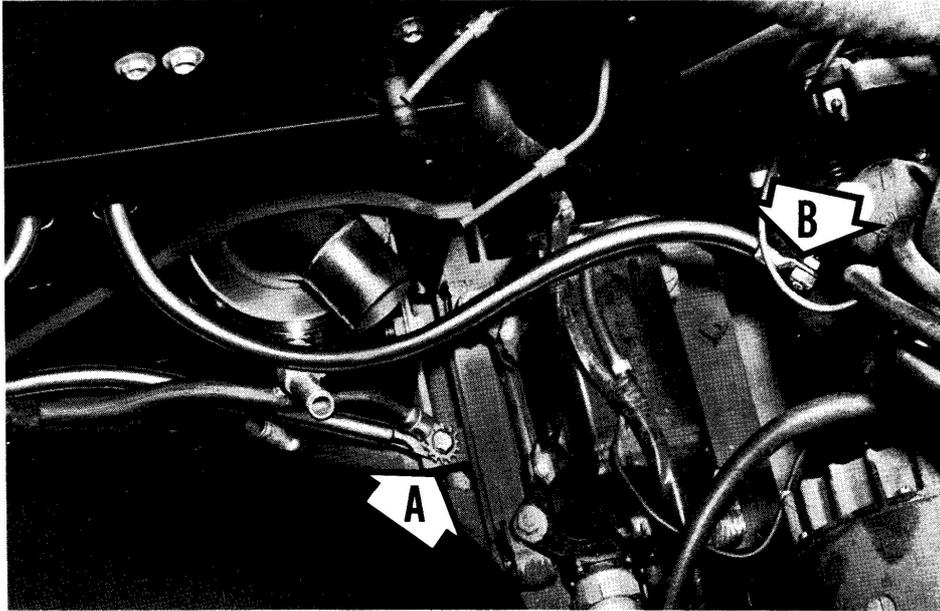


Fig. 12. (A) Negative lead connected to the vehicle ground post. (B) Positive lead connected to the starter switch terminal.

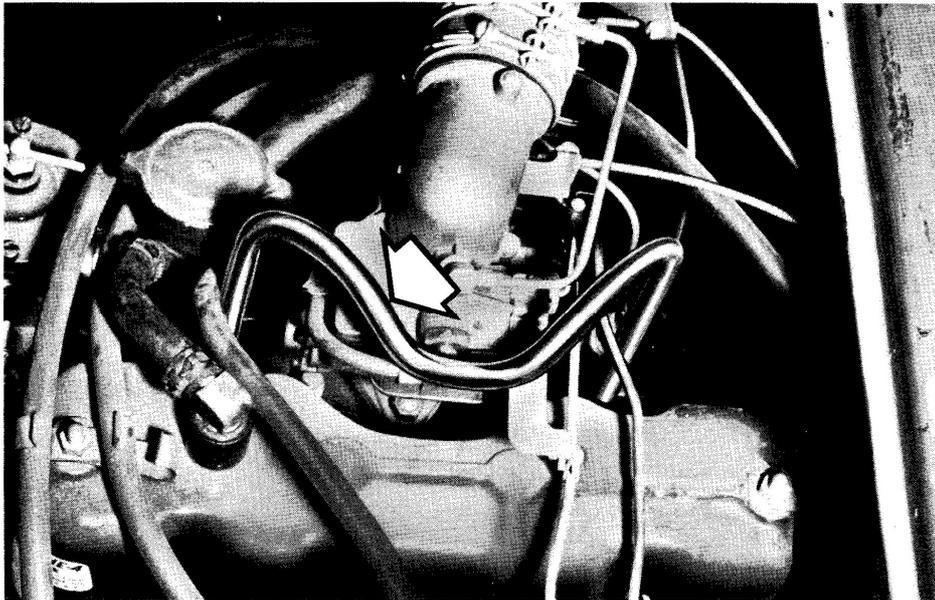


Fig. 13. Engine lifting bracket.

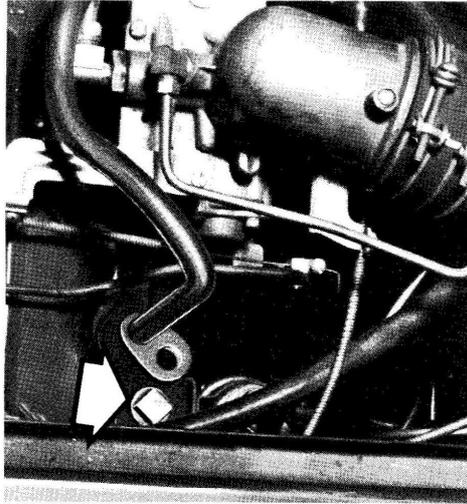


Fig. 14. Pipe plug to be removed.

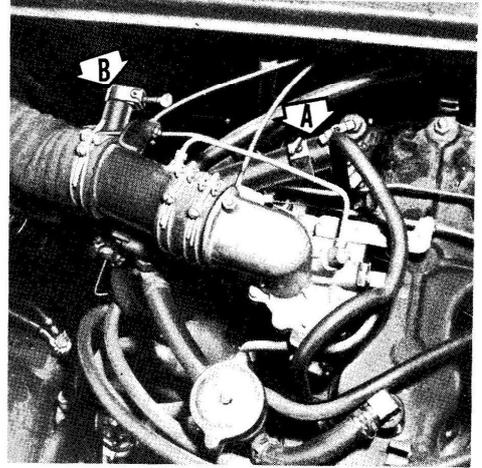


Fig. 15. (A) Coolant hose connected to shutoff cock. (B) Coolant hose connected to battery pad inlet.

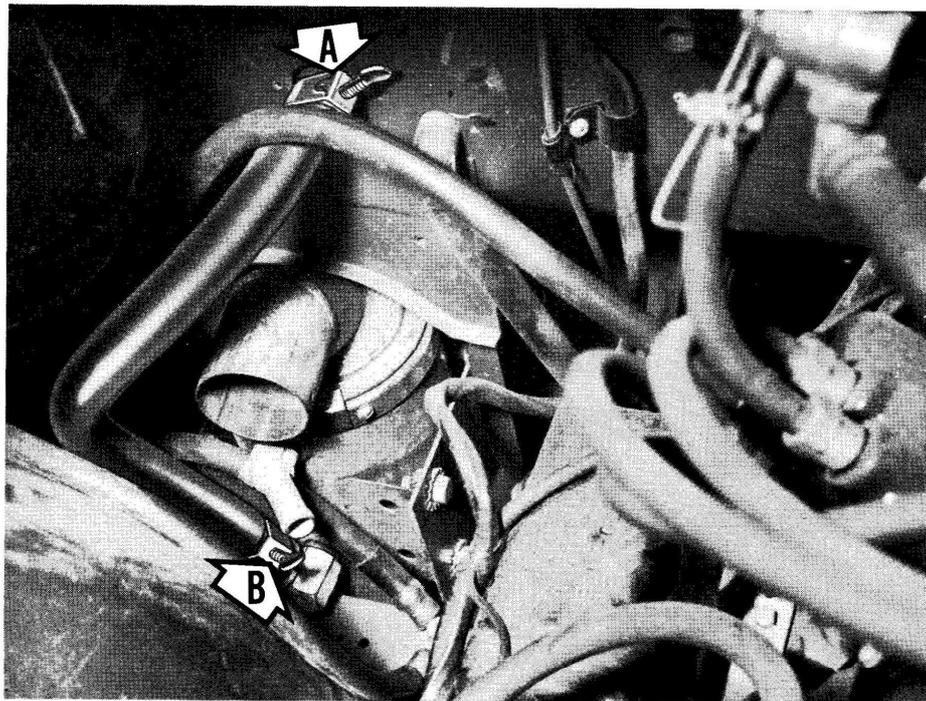


Fig. 16. (A) Coolant hose connected to battery pad outlet. (B) Coolant hose connected to heater inlet.

Step 5. Installation of High Temperature Engine Thermostat (Refer to TM 9-804A).

- a. Disconnect the water outlet hose from the water outlet elbow by removing the hose clamp.
- b. Remove the three bolts holding the water outlet elbow to the block.
- c. Remove the thermostat and replace it with the high temperature thermostat supplied in the kit.
- d. Return the hose and the elbow to their original positions.

NOTE: A thermostat gasket is supplied with the kit in case the original gasket is damaged while replacing the thermostat.

Step 6. Installation of 18" Coolant Hose Between Block Outlet and Battery Pad Inlet,

- a. Remove the rear bolt from the engine lifting bracket, Fig. 13.
- b. Remove the 1/2" pipe plug located at the top rear of the cylinder head, Fig. 14.
- c. Install a 1/2" to 3/8" reducing bushing where the pipe plug has been removed.
- d. Install a shutoff cock in the reducing bushing.
- e. Connect one end of the 18" coolant hose to the shutoff cock at the block outlet.
- f. Connect the other end of the 18" coolant hose to the battery pad inlet, Fig. 15.
- g. Return the lifting bracket to its original position.

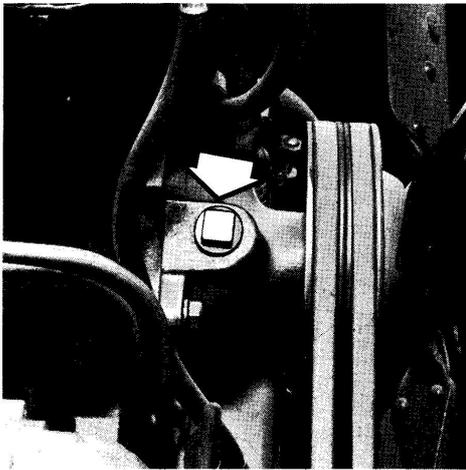


Fig. 17. Pipe plug to be removed from water pump.

Step 7. Installation of 18" Coolant Hose Between Battery Pad Outlet and Heater Inlet.

- a. Connect one end of the 18" coolant hose to the battery pad outlet.
- b. Route the hose under the positive cable of the slave receptacle.
- c. Connect the other end of the hose to the heater inlet (bottom), Fig. 16.

Step 8. Installation of 26" Coolant Hose Between Heater Outlet and Engine Block Inlet.

- a. Remove the 1/2" pipe plug from the right hand side of the water pump on the forward end of the block, Fig. 17.
- b. Install a 1/2" to 3/8" reducing bushing where the pipe plug has just been removed.
- c. Install a 45° elbow in the bushing.
- d. Install a shutoff cock in the 45° elbow.

NOTE: Make certain the shutoff cock and 45° elbow are positioned as shown in Fig. 18.

- e. Connect one end of the coolant hose to the heater outlet elbow (top).
- f. Connect the other end of the hose to the shutoff cock at the block inlet, Fig. 19.

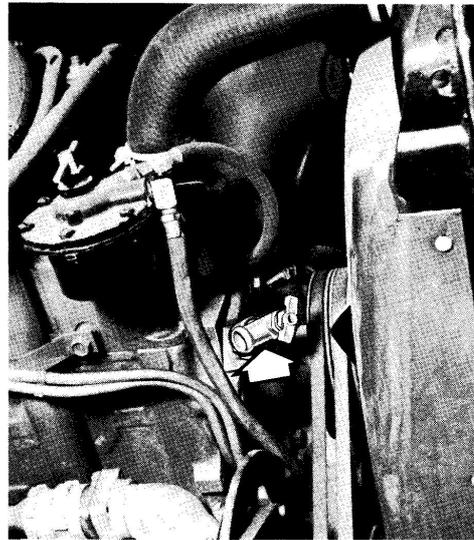


Fig. 18. Shutoff cock and elbow installed in water pump.

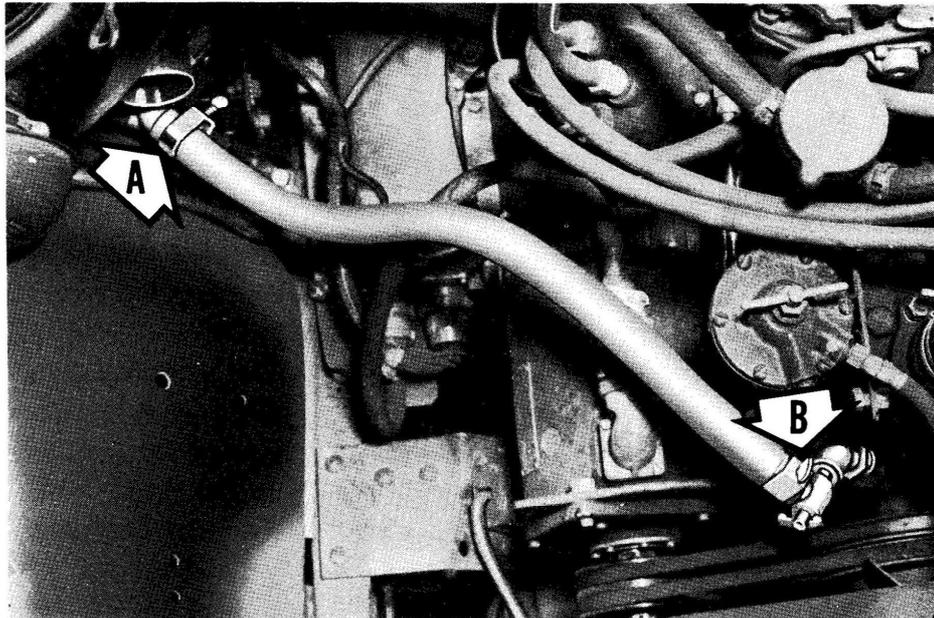


Fig. 19. (A) Coolant hose connected to heater outlet, (B) Coolant hose connected to block inlet.

Step 9. Installation of Oil Pan Shroud.

- a. Modify the voltage regulator splash plate by bending the left front corner down to accommodate the exhaust tube to the oil pan shroud.
- b. Remove one bolt from the clutch housing and one from the oil pan as shown in Fig. 20.
- c. With the two bolts just removed mount the oil pan shroud to the oil pan as shown in Fig. 21.

Step 10. Installation of Exhaust Tube.

- a. Connect one end of the 12-1/2" exhaust tube to the oil pan shroud inlet, Fig. 22.
- b. Connect one end of the 13" exhaust tube to the engine heater exhaust outlet, Fig. 23.
- c. Connect the exhaust tubes at the elbow, Fig. 23.

- d. Secure all three of these connections with the cotter pins supplied in the kit.

Step 11. Installation of Fuel Tank.

- a. Bend the fuel tank mounting brackets to fit the contour of the right front fender, inside the engine compartment.

CAUTION:

Make certain that the fuel tank does not obstruct the hood.

- b. Using the mounting brackets as template, locate and drill four 13/32" holes.
- c. Mount the fuel tank to the vehicle with the pipe plug toward the rear as shown in Fig. 24.

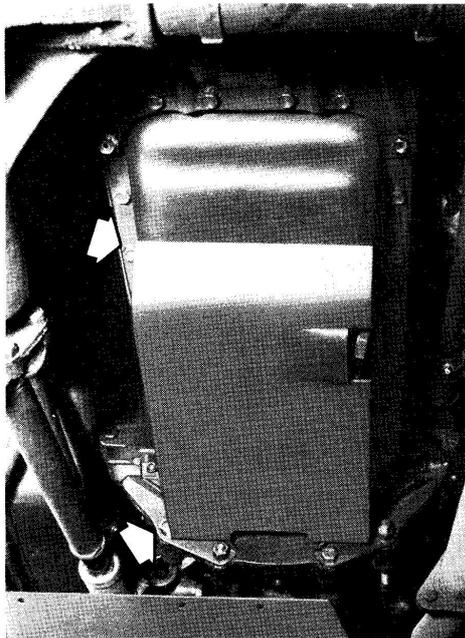


Fig. 20. Bolts to be removed from clutch housing and oil pan.

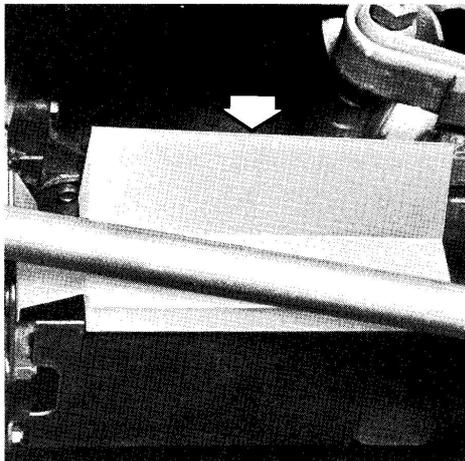


Fig. 21. Oil pan shroud mounted to oil pan.

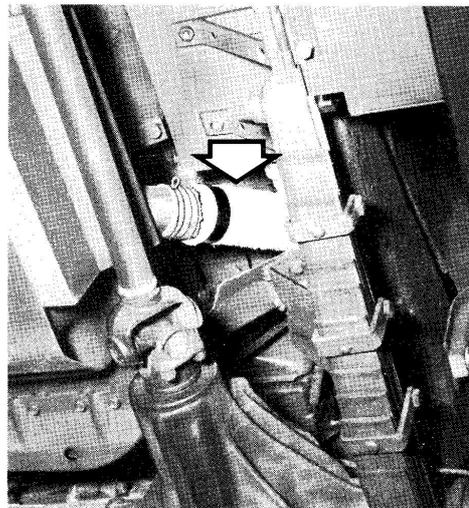


Fig. 22. Exhaust tube connected to oil pan shroud inlet.

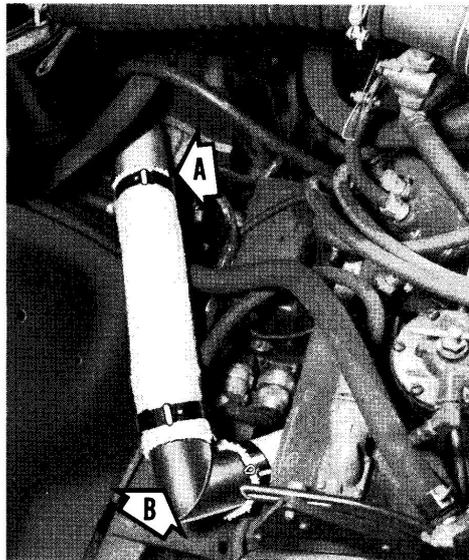


Fig. 23. (A) Exhaust tube connected to heater exhaust outlet. (B) Exhaust tubes connected at elbow.

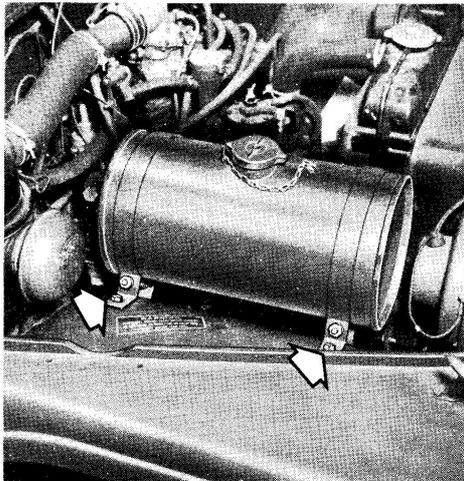


Fig. 24. Fuel tank mounted on fender.

- d. Install a shutoff cock into the fuel tank.
- e. Install a fuel filter into the shutoff cock.
- f. Install a 90° elbow into the fuel filter, Fig. 25.

Step 12. Installation of 28" Fuel Line.

- a. Connect one end of the 28" fuel line to the 90° elbow on the front of the fuel tank, Fig. 26.
- b. Route the fuel line along the fender, into the engine heater compartment.
- c. Connect the other end of the fuel line to the 90° elbow on the heater inlet, Fig. 27.

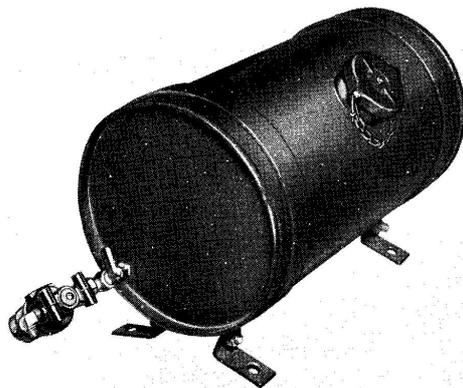


Fig. 25. Shutoff cock, fuel filter and 90° elbow connected to fuel tank.

Step 13. Installation of Heater Cover Assembly.

- a. Attach the heater cover assembly to the heater mounting bracket, Fig. 27.

Step 14. Installation of Lower Heater Shield.

- a. Using the lower heater shield as a template, locate and drill two 9/32" holes in the cab floorboard and fender, Fig. 28.
- b. Mount the heater shield with the 1/4-20 screws supplied in the kit, Fig. 28.

Step 15. Installation of Motor Resistor.

- a. Mount the motor resistor to the flange of the lower heater shield with two #6 bolts, Fig. 28.

Step 16. Installation of Heater Electrical System.

- a. Detach the instrument cluster.
- b. Separate the Douglas connector on the number 11 lead to the ignition switch.
- c. Connect the "Y" connection from the kit to each end of the number 11 lead just separated.
- d. Pass the heater power lead from the heater through the upper heater shield, Fig. 29.
- e. Route the other end of the "Y" connection behind the dash panel and connect it to the power lead, Sketch I.
- f. Return the instrument cluster to its original position.
- g. Using the existing bolts and the 1/2" clamps supplied in the kit, clamp the heater power lead to the lower battery compartment cover, Fig. 29.
- h. Secure the heater shield as shown in Fig. 29.

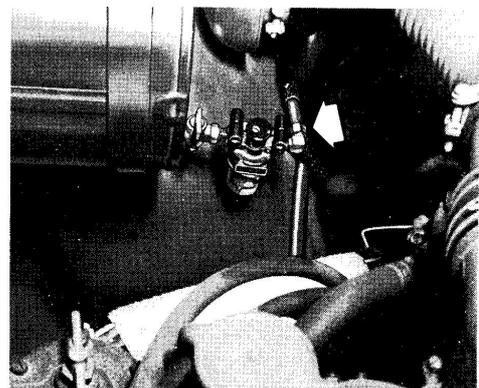
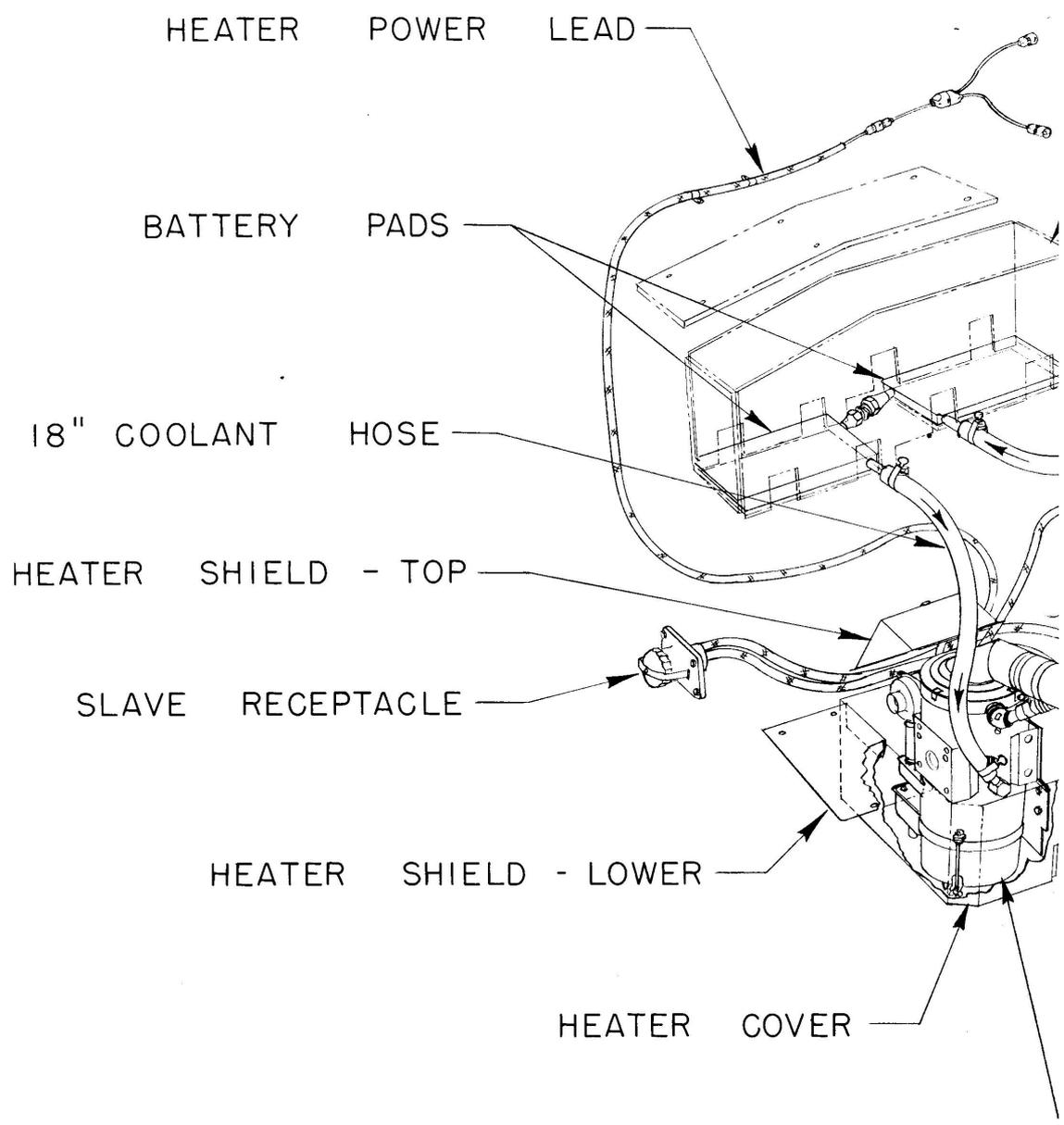
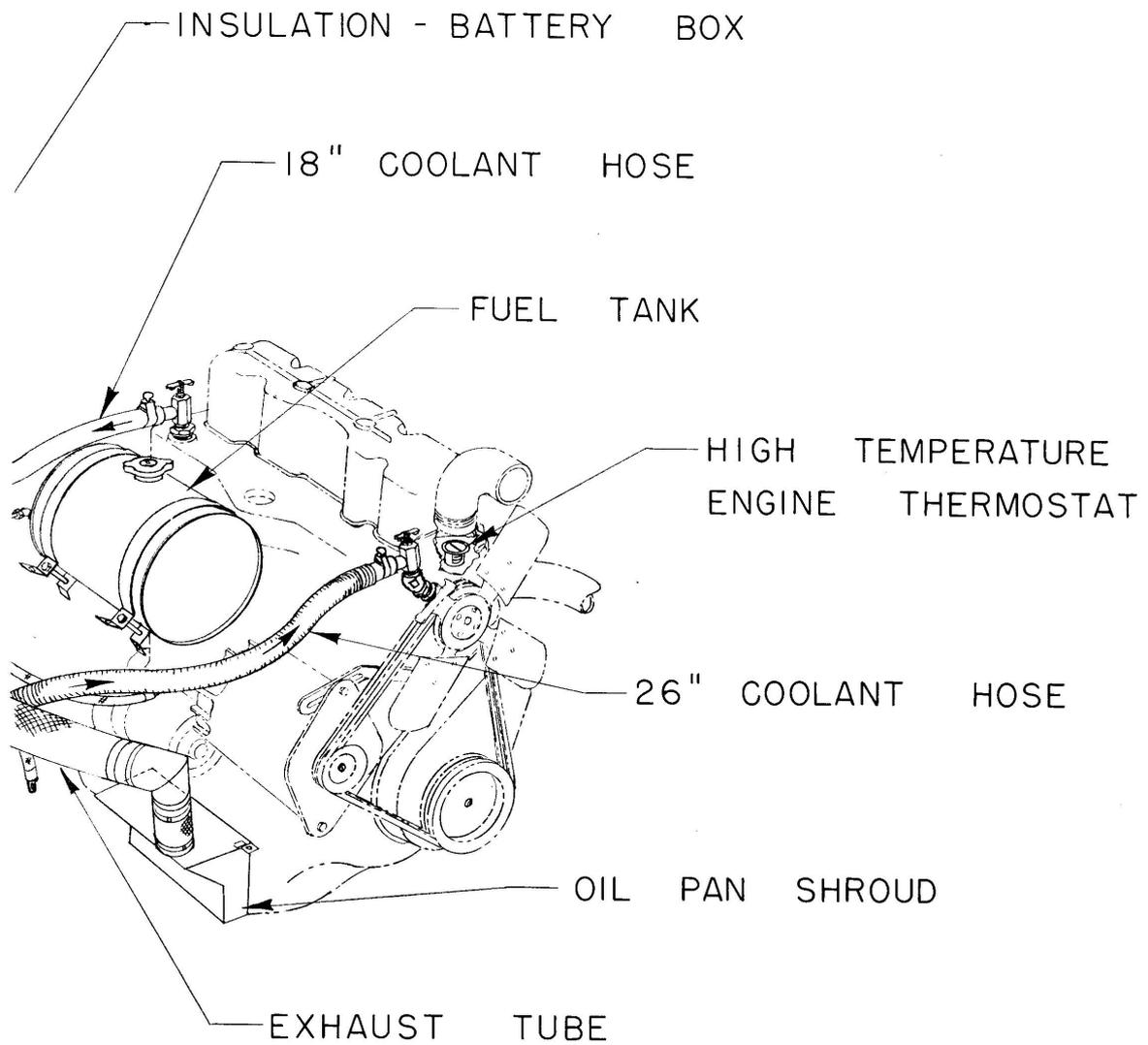


Fig. 26. Fuel line connected to fuel tank.





INSTALLATION SKETCH
POWER PLANT HEATER KIT

ORDNANCE PART NO. 7358726
ON
1/4-TON 4 x 4 UTILITY TRUCK M38A1

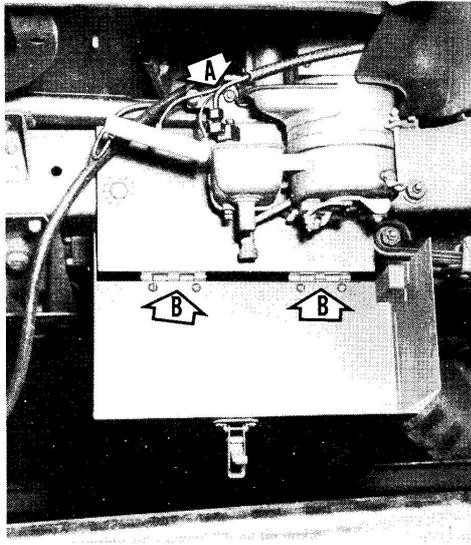


Fig. 27. (A) Fuel line connected to heater inlet.
(B) Heater cover attached.

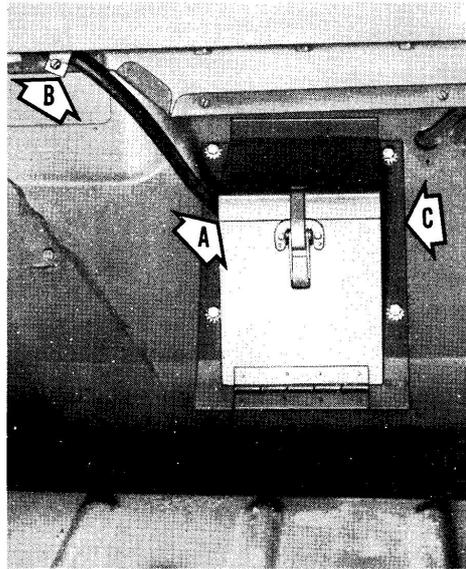


Fig. 29. (A) Heater power lead routed. (B) Heater Power lead clamped to lower battery compartment cover. (C) Upper heater shield bolted in place.

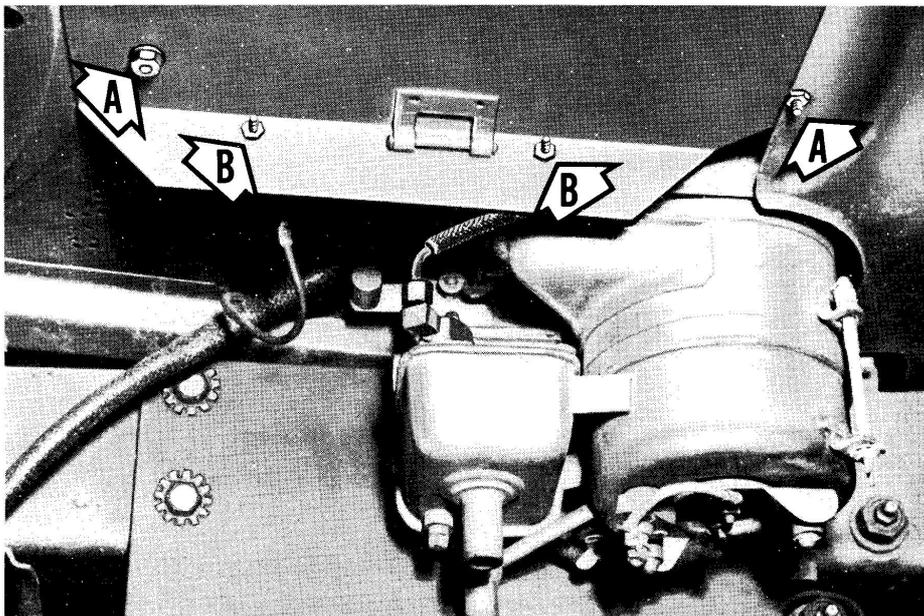
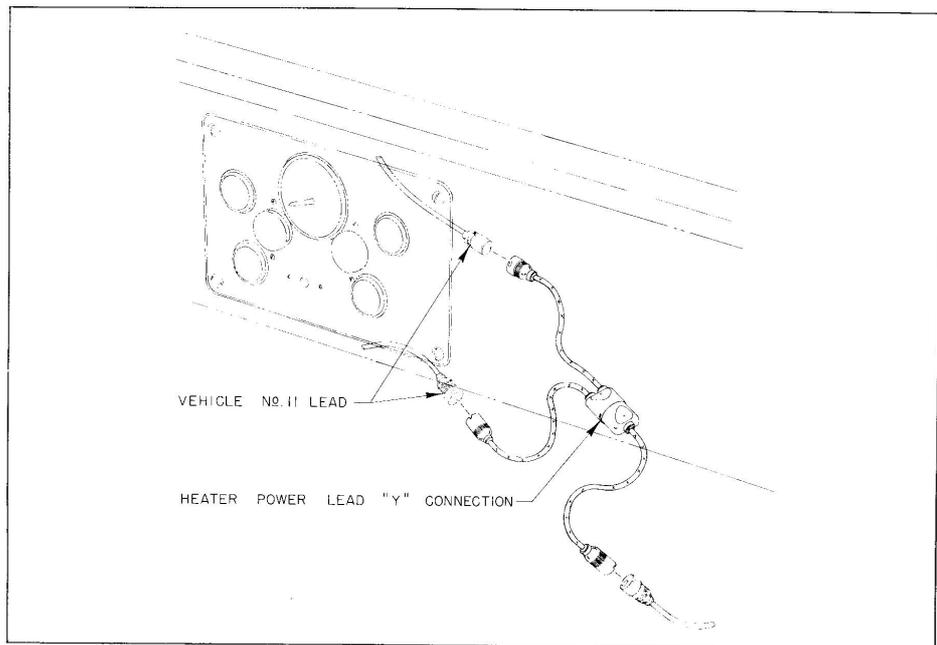


Fig. 28. (A) Lower heater shield installed. (B) Motor resistor installed.



Sketch I

Step 17. Installation of Instruction Plate

- a. Using the instruction plate as a template, locate and drill four #31 holes on the dash panel.
- b. Mount the instruction plate to the dash panel, Fig. 30.

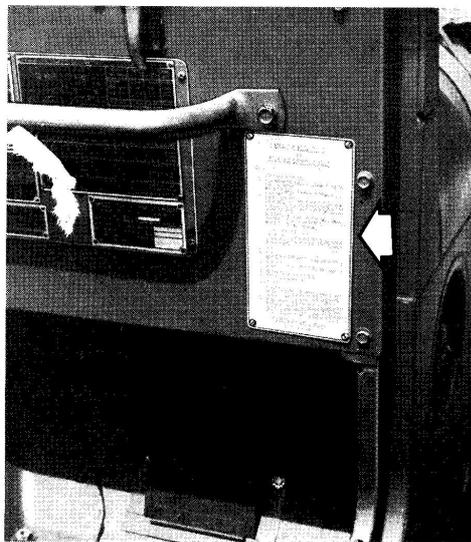


Fig. 30. Instruction plate installed.

Step 18. Preparation of Kit for Use.

- a. Connect the negative lead to the negative post on the battery.
- b. Return the battery compartment cover to its original position.
- c. Refill the cooling system according to TM 9-804A.

Step 19. Installation of Hood Covers.

- a. Place the hood covers in position, Fig. 31.
- b. Mark on the hood the location of each brass grommet around the edge of the cover.
- c. Use a footman loop at the location of each grommet to locate two #24 holes in the hood for attaching the fasteners.
- d. Using the #10 sheet metal screws provided attach the footman loops to the hood, Fig. 32.
- e. Lace the hood covers securely in place with the straps.

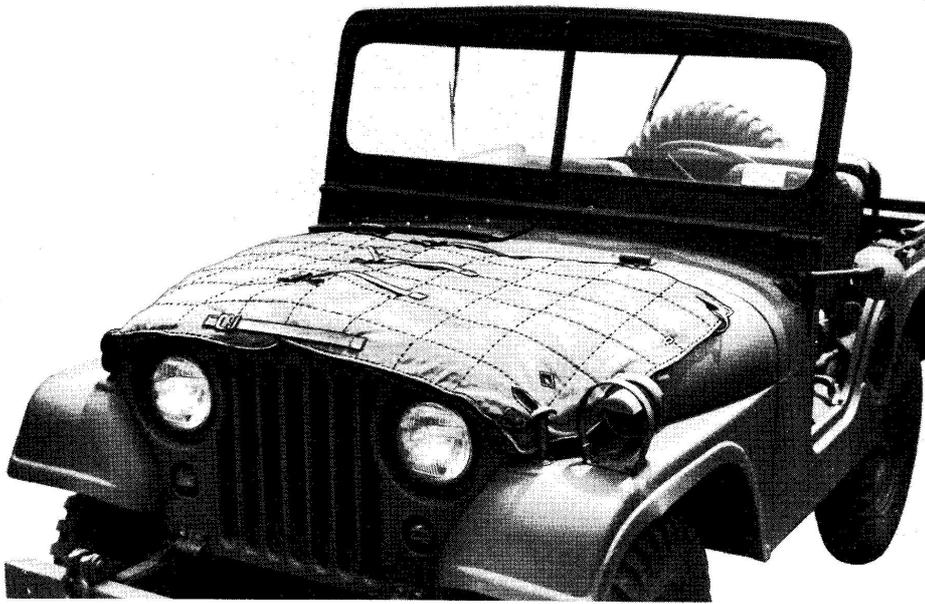


Fig. 31. Hood covers in position.

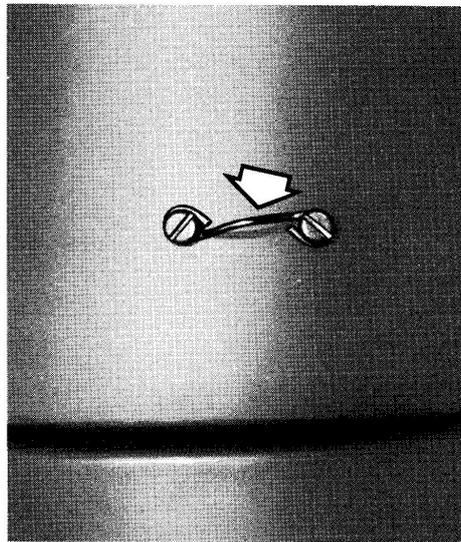
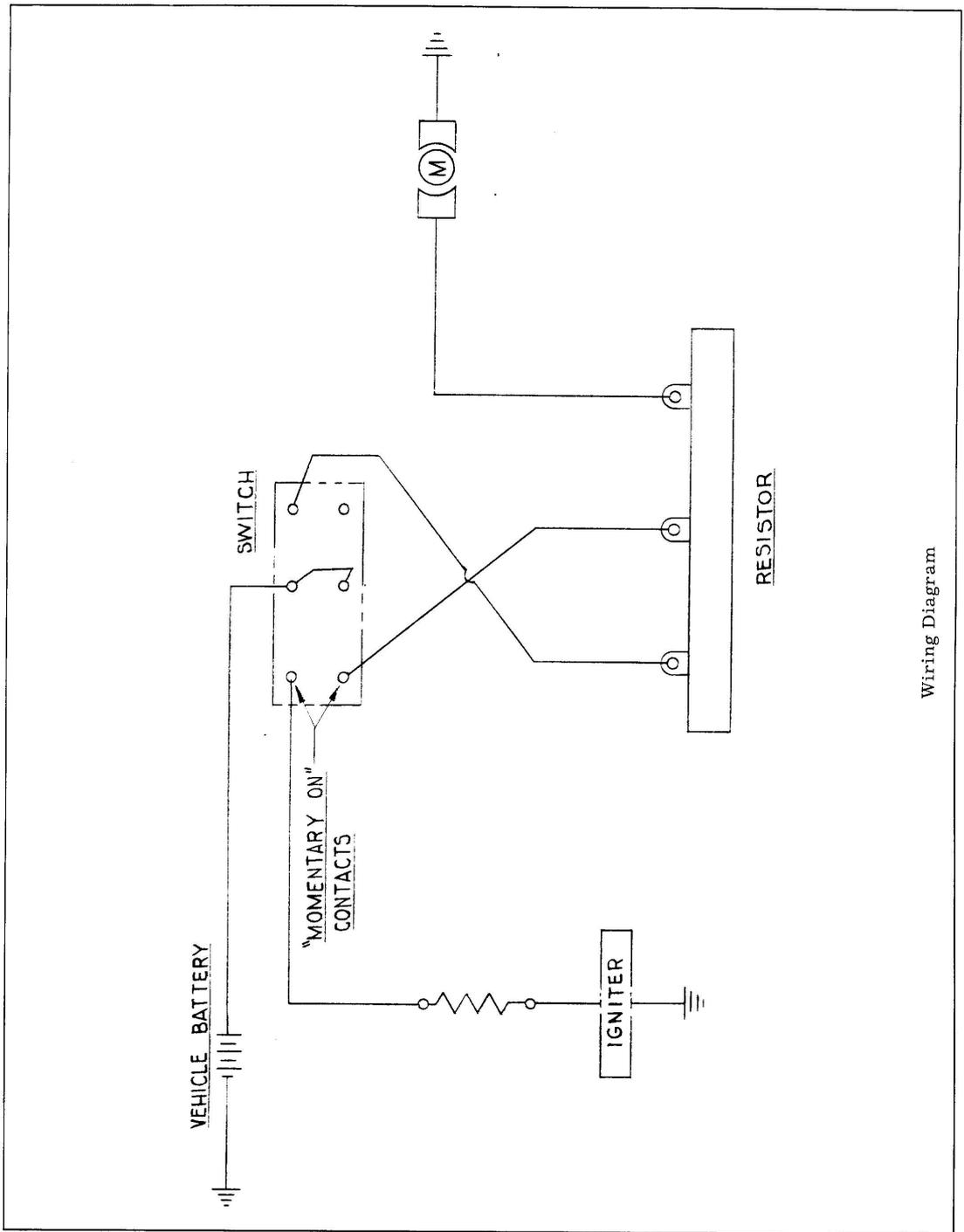


Fig. 32. Footman loop mounted on hood.



Wiring Diagram

HOW TO USE THE SERVICE PARTS LIST

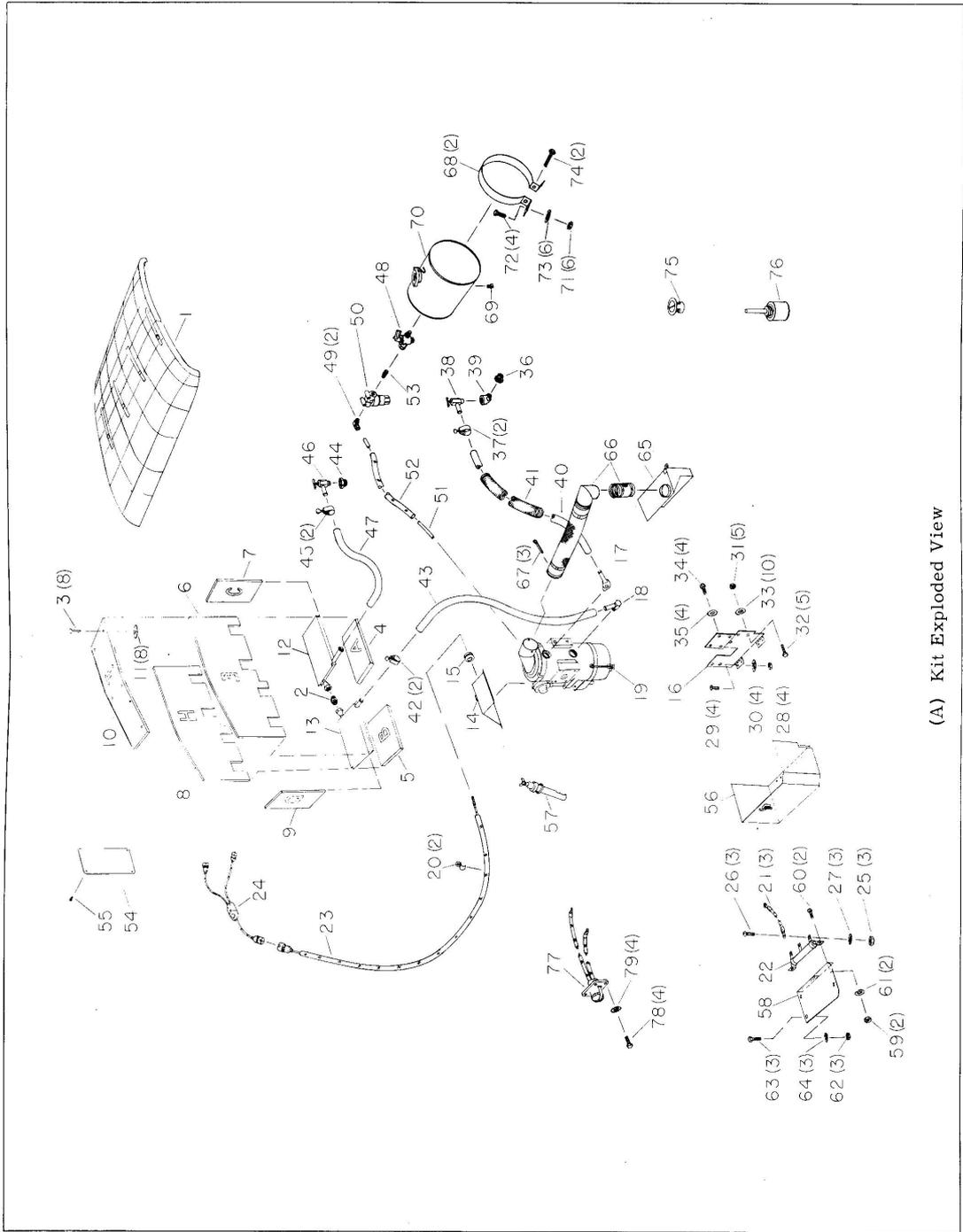
The first column in each list is the "Drawing and Reference No". This refers to the illustration and reference number of each part. To order a part, such as an igniter, find the part on the drawing. The igniter appears on Drawing (B), its' reference number is 52. Reference number 52 on the Engine Heater Service Parts list gives the Perfection Stove Company part number, the Ordnance part and Ordnance stock numbers and the complete nomenclature for the assembly.

Some assemblies have not been assigned numbers on the drawing since they are not shown as complete assemblies. However, in these cases, the sub-assemblies are shown indented in the "Part Name" column. To order an entire assembly, such as a fuel line assembly, find the subassemblies on the drawing. The fuel line subassemblies appear on Drawing (A). The reference number for the cock shutoff is 48. Directly above number 48 on the service parts list is ". . Line Assy Fuel". By ordering this assembly the order will consist of all the subassemblies which appear on the drawing. However, any of the subassemblies listed can be ordered separately unless otherwise specified. Each additional indentation indicates a further breakdown of an assembly.

SERVICE PARTS LIST
FOR
CONVERSION POWER PLANT HEATER KIT
ON
1/4-TON 4 x 4 UTILITY TRUCK M38A1
(24 VOLT)

Figure and Drawing No.	12345	Part Name	Part Number	Quantity	Ordnance Number
		Power Plant Heater Kit	E AK 917	1	
A1		. Cover Set Hood	A7008	1	7720527
		. Heater Set Battery Box	E AK 923	1	
2		.. Connector Flared (1/2)	A16147-G1	1	
3		.. Clip	A4842	8	7954866
4		.. Insulation Bottom Left	B16148-G1	1	
5		.. Insulation Bottom Right	B16149-G1	1	
6		.. Insulation Front	C16150-G1	1	
7		.. Insulation Left	B16151-G2	1	
8		.. Insulation Rear	C16152-G1	1	
9		.. Insulation Right	B16153-G1	1	
10		.. Insulation Top	B16154-G1	1	
11		.. Retainer	A1503	8	8366948
12		.. Pad Assy Inboard	C16155-G1	1	
13		.. Pad Assy Outboard	C16155-G2	1	
		. Heater Set Power Plant	E AK 924	1	
		.. Cover Assy Comp Top	D15908-G1-1	1	
14		... Cover Assy Top	D15908G2-1	1	
15		... Grommet	A3692	1	502855
		.. Heater & Accy Assy	E AK 919	1	
16		... Bracket Assy	15905-G1	1	
17		... Elbow 45° Hose	A3787-1	1	7390396
18		... Elbow 90° Hose	A3407-1	1	7537344
19		... Engine Heater 460L2	E30001-G3	1	
20		... Clamp Loom	A1525-1	2	7537364
		... Wire Assy Comp	E AK 937	1	
21		.... Wire Assy	E AK 912	3	
22		.... Resistor-Motor	A15898-G1	1	
23		.... Wire Assy	C1532-G4	1	7390765
24		.... Wire Assy	B15896-G1	1	
25		... Nut-Hex #6-32		3	
26		... Screw-Rd Hd #6-32 x 1/4		3	
27		... Washer-KL-Med #6		3	
28		.. Nut Hex 1/4-20		4	
29		.. Screw-Rd Hd Mach 1/4-20 x 1/2		4	214001
30		.. Washer K1 Med 1/4		4	120380
31		.. Nut Hex 5/16 x 18		5	134556
32		.. Screw-Hex Hd Cap 5/16 x 18 x 1		5	
33		.. Washer Shakeproof 4018-24-00		10	
34		.. Screw 3/8-16 x 3/4 Hex Hd		4	122119
35		.. Washer Shakeproof 4020-26-00		4	178551
		.. Hose Assy Comp	E AK 922	1	
		... Hose Assy	E AK 922-G1	1	
36		.... Bushing Reducing	A12440	1	8376753
37		.... Clamp Hose	A1447	2	502914
38		.... Cock-Shutoff-Hose	B1489	1	7524043

Figure and Drawing No.	12345	Part Name	Part Number	Quantity	Ordnance Number
39	Elbow 45° Street	A4337	1	144119
40	Hose	C1448-G3	1	7390839
41	Shield	C1451-G31	1	
	...	Hose Assy	E AK 922-G2	1	
42	Clamp Hose	A1447	2	502914
43	Hose	C1448-G7	1	7390339
	...	Hose Assy	E AK 922-G3	1	
44	Bushing Reducing	A12440	1	8376753
45	Clamp-Hose	A1447	2	502914
46	Cock Shutoff Hose	B1489	1	7524043
47	Hose	C1448-G7	1	7390339
	..	Line Assy Fuel	E AK 918	1	
48	...	Cock Shutoff	A1138	1	543852
49	...	Elbow Male Comp	A1134	2	114798
50	...	Filter Fuel	C1135-G2	1	7761059
51	...	Line Fuel (1/4 OD)	B1142-G25	1	7390306
52	...	Loom (3/8 ID)	B1143-G18	1	7390828
53	...	Nipple Close	A3131	1	192032
54	..	Plate Instruction	C3035	1	7537336
55	..	Screw Bd Hd #4 x 1/4		4	
56	..	Cover Assy Plate	C15906-G1-1	1	
57	..	Igniter Assembly	B1613-G2	1	7390869
58	..	Shield Assy Lower	C15907	1	
59	..	Nut Hex #8-32		2	
60	..	Screw Rd Hd Mach 8-32 x 1/2		2	
61	..	Washer KL Med #8		2	
62	..	Nut Hex 1/4-20		3	
63	..	Screw Rd Hd 1/4-20 x 5/8		3	
64	..	Washer KL Med 1/4		3	
65	..	Shroud Assy	D16434G1-1	1	
66	..	Tube Assy Exhaust	E AK 921	1	
67	..	Pin Cotter 1/8 x 3		3	
	..	Tank Assy Fuel	A3397	1	7413572
68	...	Bracket-Tank	V6158-1	2	7390309
69	...	Plug Pipe	A1528	1	112578
70	...	Tank Fuel	D4351-1	1	7390308
71	...	Nut Hex 3/8-16		6	134566
72	...	Screw Hex Hd 3/8-16 x 3/4		4	
73	...	Washer Lock KL Med 3/8		6	
74	...	Screw Hex Hd 3/8-16 x 3-1/2		2	
75	..	Thermostat	V6242	1	7537448
76	..	Seal Compound	A10970-G1	1	7390843
	..	Receptacle Set Comp Slave	E AK 920	1	
77	...	Receptacle Slave	E AK 938	1	
78	...	Screw Hex Hd 1/4-20 x 1		4	
79	...	Washer Lock KL Med 1/4		4	
	.	Booklet-Installation	10-0024-0		



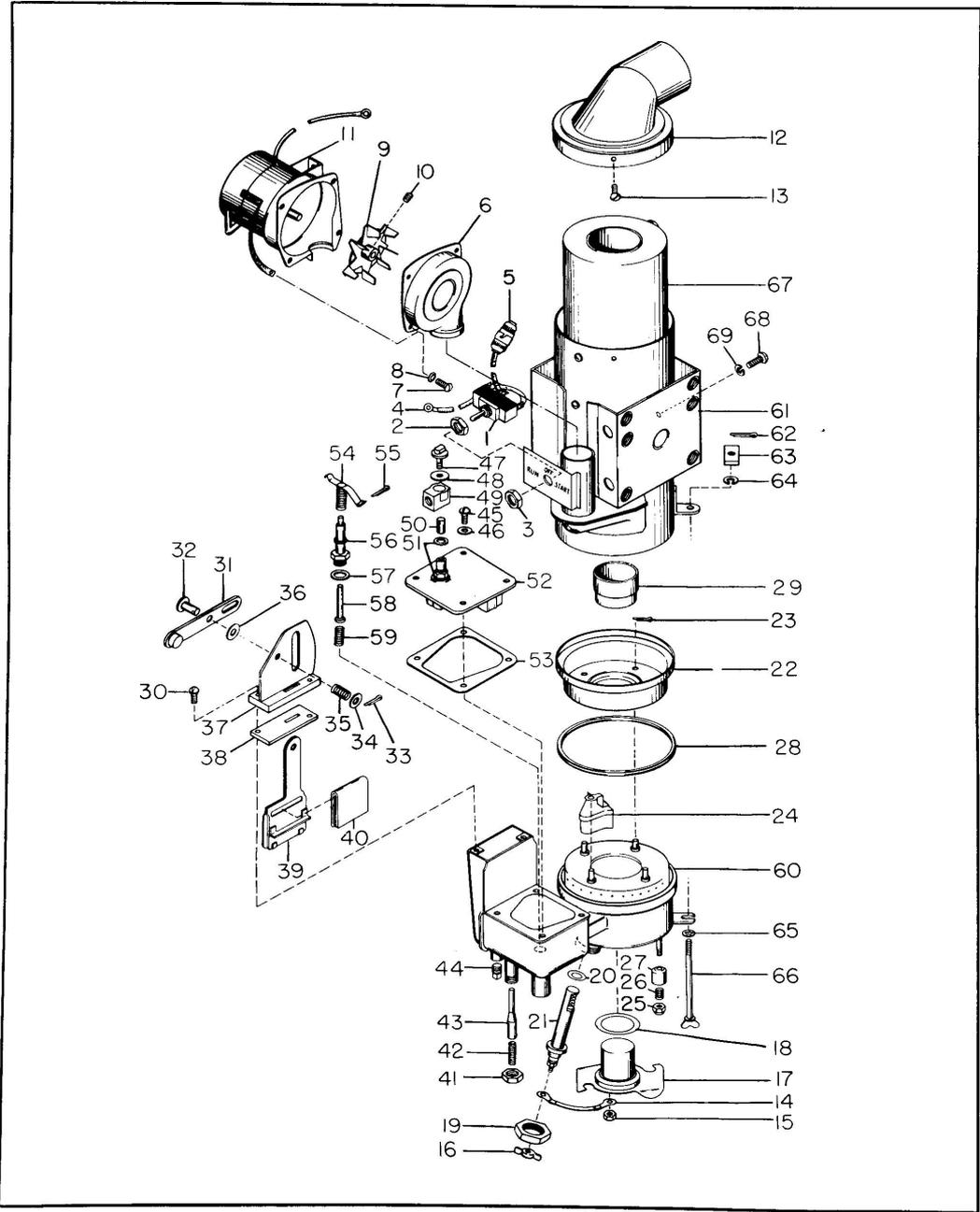
(A) Kit Exploded View

SERVICE PARTS LIST
MODEL 460-24-2
ON
TRUCK, 1/4-TON, 4 x 4, UTILITY, M38A1
(24 VOLT)

Drawing and Figure No.	12345	Part Name	Part Number	Quantity	Ordnance Number
		Model 46012 Engine Heater Assy. -24 volt	E3001-G3	1	7537506
		. Switch Assy. Complete	A3177-G1	1	7375888
B1		.. Switch Assy.	A3173	1	7375883
2		.. Nut-Switch	A3171	1	
3		.. Nut-Switch	A3170	1	
4		.. Wire Assy. -Resistor	A3180-G1	1	7375891
5		.. Wire Assy. -Power	A3179	1	7375890
		. Blower and Motor Assy. -24 volt	C2959-G3	1	7520420
6		.. Scroll-Right half	B2964-1	1	
7		.. Screw-Rd. hd., No. 8-32 x 3/8	AN515B8-6	4	
8		.. Washer-Lock, Int. teeth, No. 8	AN936A8	4	
9		.. Wheel Assy. -Blower	A3106	1	8366971
10		.. Screw-Set, cup point, hdlss., sltdd., 10-32 x 1/4"	COMM	1	
11		.. Motor-Blower, 24 volt (with left scroll)	*C2355-G3	1	
12		. Top Assy. -Combustion Chamber	C3140-1	1	
13		. Fastener-Rd. Hd., No. 10-24 x 3/8 (Sems)	18-8	4	
14		Wire Assy. -Jumper	A3688	1	7417530
15		. Nut-Hex	AN340B10	2	
16		. Nut-Wing, brass, No. 10-24	AN350B1024	1	
17		. Resistor Assy. -24 volt	B2357-G2	1	7375881
18		. Gasket-(2" O. D.)	A4675	1	8366951
19		. Nut-Igniter	A1620	1	7375817
20		. Gasket-Igniter	A1624	1	7375815
21		. Igniter Assy. Complete	B1673-G1	1	
		. Burner Assy. Complete	D3002-G2	1	7520400
22		.. Throat-Burner	B3115	1	7520927
23		.. Pin-Cotter, 3/32 x 3/4	AN380C3-3	2	
24		.. Shield Assy. -Igniter	B10440	1	8366968
25		.. Nut-Acorn, 10-24, brass	COMM	2	
26		.. Spring	A2306	2	7520384
27		.. Retainer-Resistor	A2305	2	7520391
28		.. Packing-Burner	A2297	2	7520395
29		.. Wick Assy. -Burner	A2312	1	7520375
		.. Cover and Bracket Assy. Complete	B3188	1	7520390
30		.. Fastener-Rd. Hd., No. 10-24 x 3/8 (Sems)	18-8	2	
31		... Lever Assy. -Operating	A3108	1	7520926
32		... Pin-Operating Lever	A3054	2	7520394
33		... Pin-Cotter, 1/16 x 1/2	AN380C2-2	2	
34		... Washer-Plain, 5/8 x 9/32 x 1/16	COMM	3	
35		... Spring-Operating lever	A2996-1	2	7520383
36		... Washer-Fibre	A3046	1	7520879
37		... Cover and Bracket Assy.	B3110-G1	1	7520925
38		... Gasket-Felt	A3075	1	8329130
		... Holder Assy. Complete-Wick	A3078	1	7520423
39		.... Holder Assy. -Wick	A3081-1	1	
40		.... Wick-Feed	A3048	1	7415195

Drawing and Figure No.	12345	Part Name	Part Number	Quantity	Ordnance Number
41		.. Cap Assy. -Pipe	A3125-G1	1	7520414
42		.. Spring-Feed chamber valve	A3099	1	7520385
43		.. Plunger-Feed chamber valve	A4000	1	7520380
44		.. Plug-Float chamber	A3133	1	7520392
		.. Valve Assy. Complete-Float	B3132	1	7520378
45		.. Fastener-Rd. hd., No. 10-24 x 3/8 (Sems)	18-8	4	
46		.. Washer-Fibre, No. 10	COMM	4	
47		... Bolt-Inlet fitting	A3083	1	7417648
48		... Washer-Fibre	A3046	1	7520879
49		... Tee-Special	A3092	1	7417647
50		... Strainer	A3044	1	503245
51		... Gasket-Fibre	A3047	2	7520426
52		... Valve Assy. -Float	B3117	1	7520379
53		... Gasket-Cover	B4016	1	7520407
54		.. Lever Assy. -Locking	A3077-1	1	7520404
55		.. Pin-Cotter, 3/32 x 3/4	AN380C3-3	1	
56		.. Tube-Overflow	A3067	1	7520920
57		.. Gasket-Tube	A3068	1	7520425
58		.. Plunger Assy. -Overflow valve	A4002	1	7520377
59		.. Spring-Overflow valve	A3036	1	7520382
60		.. Burner Assy.	D4146-1	1	
61		.. Chamber Assy. Complete-Combustion	C3003-G2	1	
62		.. Pin-Cotter, 1/16 x 1/2	AN380C2-2	2	
63		.. Nut-Thumb Screw	A2001	2	7520396
64		.. Washer-Lock, 1/4 in.	AN935-416	2	
65		.. Washer-Lock, int. teeth, 1/4 in.	AN936A416	2	
66		.. Screw-Thumb	A3062-1	2	7520386
67		.. Exchanger Assy. -Heat	C3121-1	1	7520398
68		.. Screw-Rd. hd., 1/4"-20 x 3/8"	AN515B416-6	2	
69		.. Washer-Lock, 1/4 in.	AN935-416	2	

* Not procurable separately



OPERATING CAUTIONS

Do not attempt to operate the engine heater until the cooling system is filled with coolant. When filling the cooling system, be sure that the shutoff cocks in the engine heater's coolant system are open. Immediately after installation of the kit run the vehicle engine to assure complete removal of any air which may have been trapped in the coolant system. When the coolant has reached operating temperature add enough coolant to bring the coolant to the proper operating level.

The shutoff cocks in the coolant lines of the engine heater system must be open at all times when the engine heater is operating.

The shutoff cocks must be closed whenever the vehicle is operating in high ambient temperatures. This avoids overheating the battery.

CONDENSED
OPERATING INSTRUCTIONS
FOR
MODEL 460 J, K or L PERFECTION HEATERS

TO START:

1. Open shutoff cock on fuel line to heater.
2. Place fuel control handle in the High Fire position.
3. Wait approximately 2 minutes to permit fuel to reach igniter wick.

CAUTION:

Observe overflow tube in base of float chamber. If initial overflow continues for more than 2 minutes, do not ignite heater. Consult service instructions.

4. Hold heater switch in "Start" position for approximately 30 seconds, or until the sound of combustion is heard.
5. Move heater switch to "Run" position.
6. If heater does not light within 5 minutes, move switch to "Off". Place the fuel control handle in the "Off" position and consult service instructions.

LOW FIRE OPERATION.

1. Fuel rate may be decreased to low fire setting after heater is lighted by moving fuel control handle to intermediate position.

TO STOP:

1. Place fuel control handle in "Off" position.
2. Wait approximately 30 seconds for flame to go out.
3. Move switch to "Off" position.
4. Close valves in fuel line.
5. NEVER leave the control handle in "On" position when stopping the heater. This results in excessive starting time for next start, and may cause considerable smoking.

CAUTION:

1. Do not operate heater if initial overflow lasts more than 2 minutes. See servicing instructions.
2. If the heater is installed in a closed compartment, the door should be open whenever the heater is started or operated, to provide adequate air for combustion.

IMPORTANT

Complete Operating and Maintenance Instructions for the Heater are in the Model 460 Heater Service Manual which is included with the Kit.

PUBLICATION DATA

Date of Release:

Shipping Order No. C721

624-9-10-0024-0 (27C 1053 P.S.)

Litho. in U.S.
