RESTRICTED

ELECTRICAL AND MECHANICAL
ENGINEERING INSTRUCTIONS (AUST)

VEHICLE G 554

TRUCK, 2 1/2 TON, GS WITH WINCH, IHC NO 1, MK 3

FIELD REPAIR

Issue 1, 31 Dec 67

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FIELD REPAIR

NOTE:- This instruction is to be read in conjunction with VEH G 553.

INDEX OF TEXT

INDEX OF FIGURES

INDEX OF FIGURES (contd)

INDEX OF TABLES

INTRODUCTION

1. The object of this instruction is to provide technical information required to carry out field repair when read in conjunction with VEH G 553. The emphasis is on the needs of workshop personnel, rather than on operating instructions. Where reference is made to the left or right hand side of the vehicle, the view is taken from the rear to front in all cases, unless otherwise stated.

REPAIR PROCEDURE

AIR HYDRAULIC ACTUATORS (REFER FIGS 1 AND 2)

Description

2. Air-hydraulic actuators are a special form of brake chamber for actuating a hydraulic master cylinder. The brake chamber is mounted by means of bolts (3) integral with the brake chamber non-pressure plate (12) and nuts to a cast aluminium mounting bracket. Steel shims (2) are located between the brake chamber and mounting bracket to allow clearance be tween the end of the push rod (10) and the master cylinder (5). The master cylinder is secured to the common bracket by means of studs and nuts.

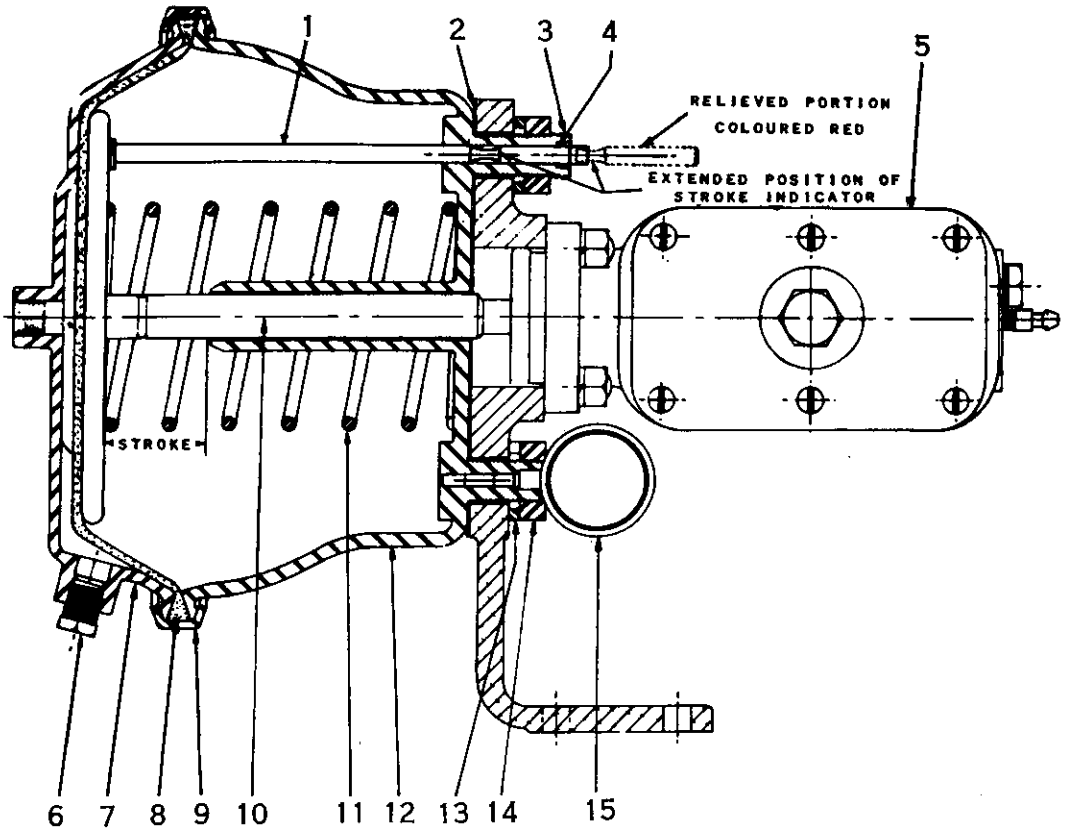
3. To prevent entry of dirt and water to the non-pressure side of the brake chamber and to the piston of the master cylinder, one brake chamber mounting stud is tapped and a breather (15) fitted. All other openings to the non-pressure side are sealed.

4. The stroke indicator (1) is not fixed in the brake chamber but is free to slide under pressure from the push rod push plate. An "O" ring (4) is provided in the stud or bracket to keep out dirt and to provide friction to prevent the stroke indicator from moving under vibration.

Operation

5. Compressed air enters the chamber behind the diaphragm (8) and forces the diaphragm and the push rod forward, thus applying a thrust to the hydraulic master cylinder. The higher the air pressure admitted to the chamber, the greater the force applied to the hydraulic master cylinder. When air pressure is released from the brake chamber, the push rod return spring (11) in combination with the hydraulic master cylinder spring and brake shoe return springs returns the diaphragm and push rod assembly to their released positions releasing the brakes.

6. The stroke indicator (1) moves under pressure from the brake chamber push rod push plate and will project from the mounting stud, according to the stroke of the brake chamber.



1	Stroke Indicator	6	Plug	11	Diaphragm Spring
2	Shims	7	Pressure Plate	12	Non-Pressure Plate
3	Bolt	8	Diaphragm	13	Lock Washer
4	"O" Ring	9	Clamp	14	Nut
5	Master Cylinder	10	Push Rod and Plate Assembly	15	Breather

FIG 1 - ACTUATOR AND MASTER CYLINDER UNIT

It will stay in this position upon release of the brakes. As the brake linings and other parts wear, the stroke of the brake chamber increases and the stroke indicator will move further out from the stud. When the relieved portion of the stroke indicator shows from the stud, it indicates that the brakes need adjustment. If the full relieved portion of the indicator shows, the brakes must be adjusted as the full brake chamber travel has been reached. If the brakes are not adjusted at this stage, the brakes will *NOT* apply.

Leakage

7. With a full pressure application, check the brake chamber for leakage. No leakage is permissible. If leakage is detected around the flange, or clamping ring, the bolts should be tightened evenly, but only enough to stop the leakage, otherwise, the diaphragm, flange sealing surface of clamping ring could be distorted.

Removing

8. a. Release all air pressure from the system.

b. Disconnect the air line to the brake chamber.

c. Disconnect hydraulic lines to the master cylinder.

d. Unscrew the nuts holding the bracket to the chassis.

e. To remove brake chamber from bracket firstly remove breather. Unscrew two nuts (14) from the chamber mounting studs, remove the chamber and shims between the chamber and bracket, taking care to retain them for re-assembly.

f. To remove master cylinder remove three nuts from the studs in the mounting bracket.

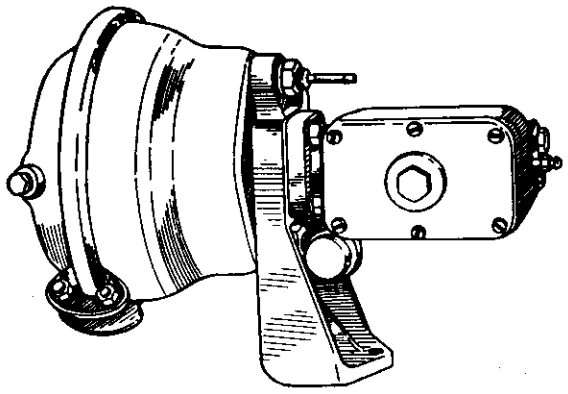


FIG 2 - AIR/HYDRAULIC ACTUATOR SHOWING STROKE INDICATOR FULLY EXTENDED

Dismantling

9. a. After cleaning the exterior of the brake chamber, mark it in such a way that it can be assembled in the same way.

IMPORTANT:- Never permit the diaphragm to come in contact with hydraulic fluid or cleaning solvents.

b. Pull out push rod far enough to clamp it at the non-pressure plate end with a vice or vice-grip pliers to relieve the tension of the spring on the diaphragm. Remove clamp ring bolts and nuts.

c. Spread clamp slightly, just enough to slip it off the plates. It is sometimes necessary to use a screwdriver and gradually pry under the clamp ring to remove it. If the clamp ring is to be re-used, caution should be taken against bending it out of shape.

d. Remove pressure plate and diaphragms.

e. Release grip on push rod.

f. Remove push rod assembly, spring and indicator rod.

Assembly

10. *Brake Chamber.*

a. Slide stroke indicator rod through mounting stud.

b. Stand push rod assembly upright on a flat surface.

c. Position return spring and non-pressure plate on push rod.

d. Press the non-pressure plate down against the tension of the spring until the plate bottoms on the flat surface and clamp the push rod at the non-pressure plate in a vice or with vice-grip pliers with grips taped or covered.

e. Place the clamp ring over the clamping surface of the non-pressure plate.

f. Position diaphragm in pressure plate and join the two with the non-pressure plate by working the clamp ring over the clamping surface of the pressure plate, with vice-grip pliers or like tool drawing the clamp lugs together.

g. Assemble bolt and nut in clamp. It is sometimes necessary to tap the clamping ring to centre it, and this should be done only with a soft faced mallet.

h. Release hold on push rod and install remaining clamp ring nut and bolt. Tighten the clamp ring nuts and bolts evenly and only sufficiently to eliminate leakage.

11. *Actuator Unit.*

a. Fit master cylinder to bracket.

b. Using a depth gauge, measure the depth from the brake chamber side of the bracket to the bottom of the push rod hole in the master cylinder.

c. Leaving the depth gauge set, place it on the end of brake chamber push rod and note the distance between the end of the depth gauge and the mounting face of the brake chamber.

d. Calculate the number of shims required to make up this difference plus a minimum clearance of 1/32 inch between the end of the push rod and the bottom of the bore in the master cylinder piston adding one extra shim if necessary.

NOTE:- Shims are 0·032 inch thick.

e. Place the shims over the brake chamber push rod and mounting studs.

f. Fit brake chamber to mounting bracket ensuring that mounting nuts are tight.

g. Fit elbow and breather.

Installing

12. a. Fit actuator unit on chassis.

b. Connect air and hydraulic lines.

c. Remove the filler cap and top up to within half an inch below the bottom of the filler cap orifice with clean brake fluid. Replace the filler cap and the gasket.

d. Bleed the system and check for leakage by applying a firm pressure to the brake pedal and inspecting the lines and connections.

GOVERNOR

13. Before dismantling remove all dirt or grease from exterior of governor using cleaning solvent and a brush. Inspect body for breakage or other damage. All broken or damaged parts must be replaced.

14. *Dismantling.*

a. Unscrew both filter cap nuts from body and remove grommets, felt washers and strainers from body.

b. Unscrew body cap nut and remove inlet valve spring, seat retaining spring, and inlet exhaust valve. Remove inlet valve seat, being careful not to damage actual seating surface. Lift out shims found under valve seat.

c. Unscrew spring cage cap nut and remove adjusting nut from stem. Remove spring seat and pressure setting spring.

d. Remove four screws and separate body from spring cage. Remove diaphragm and stem assembly from spring cage. Remove nut and remove diaphragm and followers from stem.

e. Remove exhaust stem and conical spring from body.

f. Remove grommets from cap nuts, inlet valve seat, and diaphragm stem. With a small hooked wire, remove grommet from exhaust stem bore in upper body.

15. *Cleaning and Inspection of Parts.*

a. Clean all parts in cleaning solvent and be particularly careful that all passages through the body and exhaust stem are not obstructed in any way. The strainers may be re-used if they can be washed thoroughly clean in cleaning solvent.

b. Inspect both seats on the inlet-exhaust valve for grooves or damage. If either seat is grooved or damaged, the valve must be replaced.

c. Inspect inlet valve seat for wear or damage. If seat is worn or damaged it must be replaced.

d. Inspect seat on exhaust plunger for wear or damage. If seat is worn or damaged it must be replaced.

e. Check fit of exhaust stem in body. It should be a smooth sliding fit.

16. *Assembly, Adjustment and Test.*

a. Carefully install new greased grommet in groove in exhaust stem bore in body. Install conical spring and exhaust stem and check to be sure the stem is a smooth sliding fit in its bore.

b. Assemble diaphragm and stem assembly using new diaphragm and grommet, making sure that beveled side of both followers is toward diaphragm. Tighten nut (10 to 15 inch pounds torque) and install cotter pin, bending both legs of the cotter pin toward the diaphragm. Check to be sure diaphragm stem is a smooth sliding fit in its bore. Assemble spring cage to body.

c. Install filters making sure felt washers are on bottom.

d. Measure total valve travel (fig 3) by pulling diaphragm assembly stem out as far as possible and setting dial indicator at zero when contacting exhaust valve stem. Push diaphragm stem completely in and read total valve travel. Total valve travel should be 0·060 inch to 0·098 inch.

e. Install inlet valve seat and inlet valve and repeat above procedure with dial indicator zeroed on end of inlet valve. Add or remove shims under inlet seat until inlet valve travel is 0·030 inch to 0·040 inch.

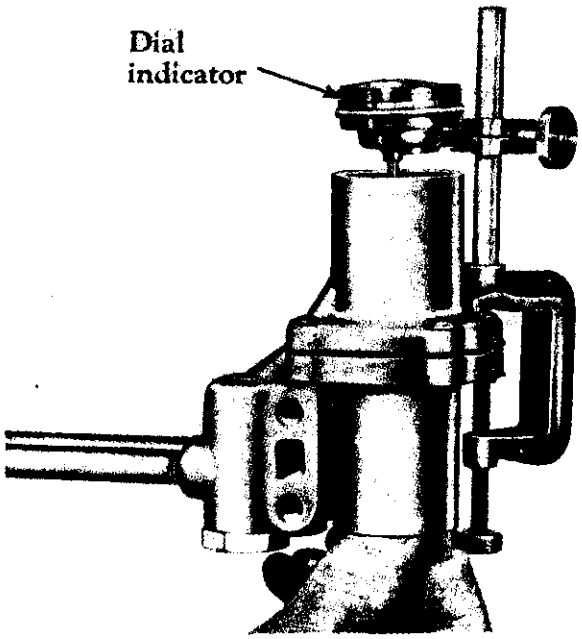


FIG 3 - CHECKING VALVE TRAVEL (GOVERNOR)

f. Install inlet valve spring and seat retaining spring. Install valve body cap nut with new grommet greased before assembly.

g. Position pressure setting spring and spring seat and install nut on stem. Mount governor on vehicle and with spring cage cap nut off, build up reservoir pressure from zero and note pressure at which air starts to escape from spring cage. If pressure is below 100 lb/sq in turn adjusting nut clockwise and if pressure is above 105 lb/sq in turn adjusting nut counter-clockwise. After final adjustment leakage should start at 100 to 105 lb/sq in. After final adjustment insert cotter pin and tighten cap nut.

NOTE:- The range between the cut-in and cut-out pressure is a function of the design of the governor and cannot be adjusted.

RESERVOIR

Testing and Inspection

17. a. *Leakage Tests.* With the air brake system charged, coat the outside of the reservoir with soap suds to check for leakage. If any leakage is found, replace the reservoir.

b. *Inspection.* Inspect inside and outside surfaces for damage or corrosion. A small flashlight is helpful when inspecting the interior. If damage or corrosion is found that would weaken the reservoir, replace the reservoir.

TRACTOR PROTECTION VALVE (REFER FIG 5)

Dismantling

18. The three springs in the valve should be carefully marked as to their proper location in the valve as the valve is dismantled.

a. Remove four cap screws, lock washers, and cover from valve.

b. Remove emergency disc valve and emergency disc valve spring from cover.

c. Remove emergency disc valve seat, service and exhaust valve guide, "O" rings, service and exhaust valve, and service and exhaust valve spring from body.

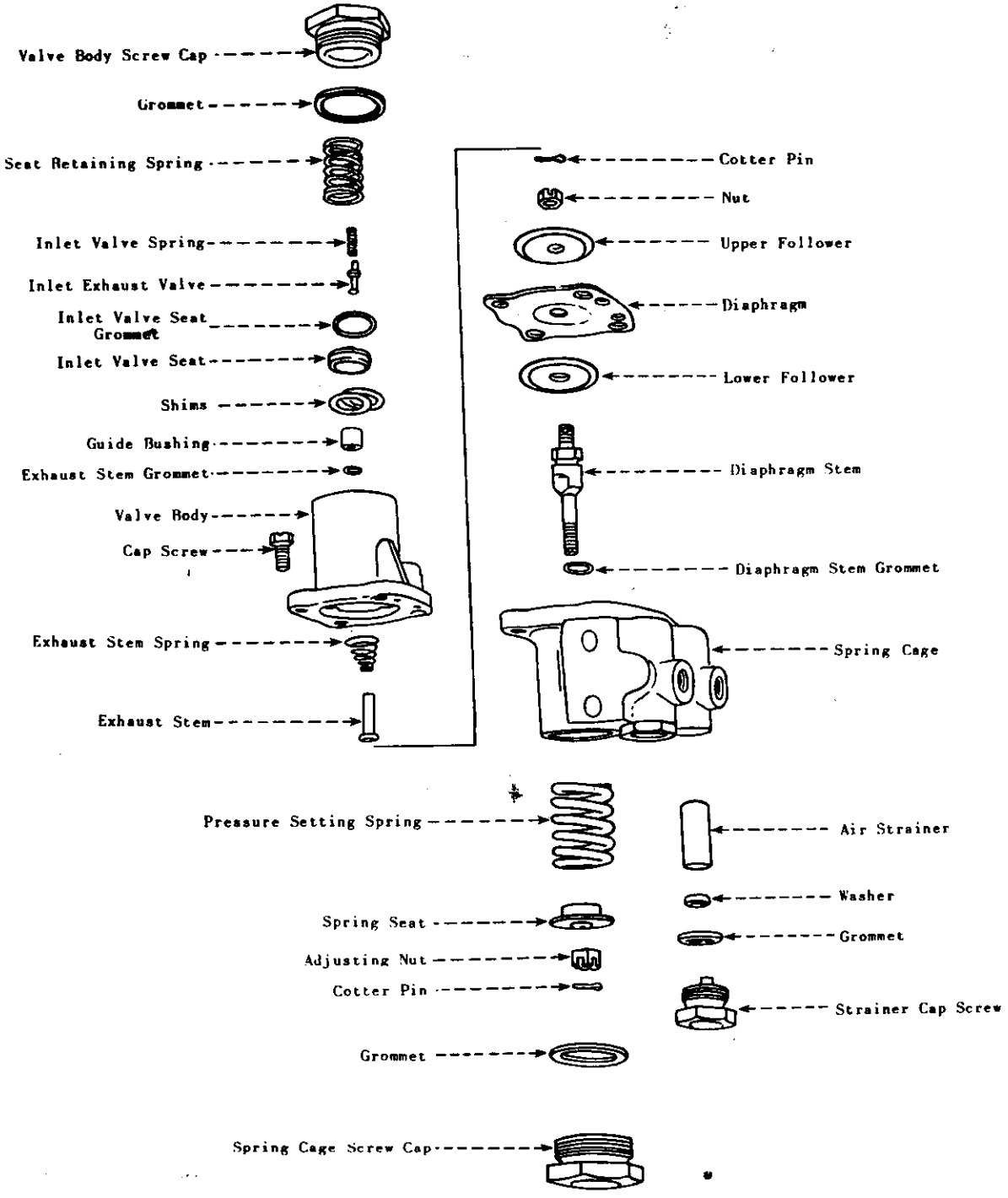


FIG 4 - EXPLODED VIEW OF GOVERNOR

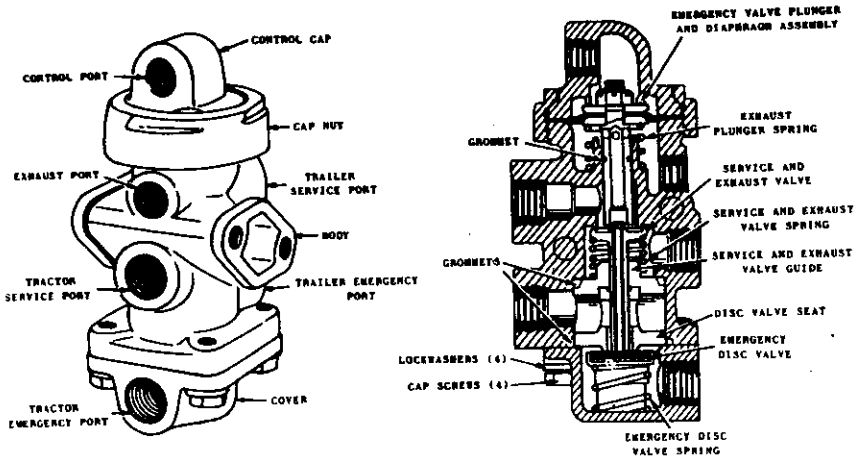


FIG 5 - EXTERIOR AND SECTIONAL VIEWS OF TRACTOR PROTECTION VALVE

d. Remove cap nut and control cap.

e. Remove exhaust valve plunger and diaphragm assembly from body.

f. Remove exhaust plunger spring from body.

Cleaning and Inspection of Parts

19. a. Inspect bores in valve body to be sure they are not damaged or out of round. Clean body, control cap and cover.

b. Wash all metal parts in cleaning solvent and dry them thoroughly.

c. Inspect all moving parts for wear or damage.

d. Inspect diaphragm and bonded rubber valves for wear or deterioration.

e. Inspect springs for breaks or deterioration.

f. Inspect valve seats for nicks or burrs.

g. Replace any parts which are no longer serviceable by these inspections.

Assembly

20. Prior to assembly, ensure that the "O" ring is in position in its groove in the stem of the exhaust valve plunger and diaphragm assembly.

a. Lubricate lightly the following surfaces with Liqui-Moly or Moly-Kote or equivalent:-

(1) Stem and "O" ring of exhaust valve plunger and diaphragm assembly.

(2) All bores in valve body.

(3) Stem of service and exhaust valve.

(4) Three "O" rings.

(5) Bores and outside surfaces of service and exhaust valve guide and disc valve seat.

b. Position valve body in a vice. Install exhaust plunger spring (dichromate-yellow-gold color) in valve body and install exhaust plunger and diaphragm assembly, being careful not to cut "O" ring on plunger stem. Plunger should be a neat sliding fit in bore. Position control cap and cap nut. Position control cap to desired port angle and holding it firmly on diaphragm to avoid distorting or damaging diaphragm, tighten cap nut.

c. Reposition valve body in the vice and install medium "O" ring in valve body.

d. Preassemble the following parts before installing them in valve. Place service and exhaust valve spring (cadmium plated-silver colored) on service and exhaust valve guide. Install service and exhaust valve in its guide. Place small "O" ring on stem of service and exhaust valve in contact with service and exhaust valve guide. Slide disc valve seat on stem of service and exhaust valve until it contacts service and exhaust valve guide.

e. Carefully install preassembled parts in body and hold in place, making sure that preassembled parts are properly centered in body.

f. Position large "O" ring in its groove in the valve body.

g. Position emergency disc valve spring (black color) and emergency disc valve in cover so that metal side of valve is in contact with spring. Install cover in desired port position and note that "O" ring and emergency disc valve are in position. Hold cover in position and install four lockwashers and cap screws.

Testing Tractor Protection Valve

21. Apply air pressure to all ports of tractor protection valve except exhaust port and coat ports and valve with soap suds to check for leakage. Perform operating and leakage check.

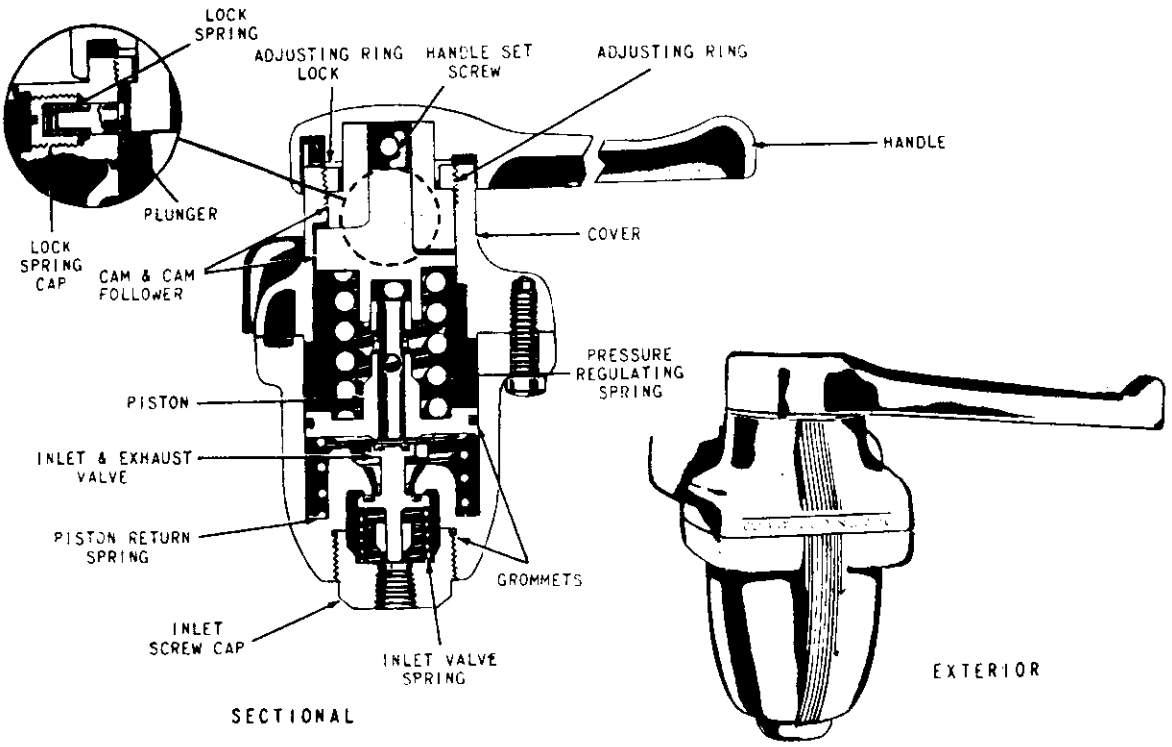


FIG 6 - TRAILER CONTROL BRAKE VALVE

TRAILER CONTROL BRAKE VALVE

Dismantling (Fig 6)

22. a. Remove set screw from handle and lift off.

b. Lift out adjusting ring lock.

c. Remove adjusting ring nut with a suitable spanner wrench.

d. Remove plunger lock spring cap, spring, and then plunger.

e. Remove four screws that hold the body to cover and separate cover from body.

f. Remove pressure regulating spring, cam, and cam follower.

g. Pull piston assembly from body and lift out the piston return spring.

h. Remove piston grommet.

j. Remove inlet screw cap.

k. Remove inlet valve spring, then inlet and exhaust valve.

Cleaning and Inspection

23. a. Wash all metal parts in good cleaning solvent and dry.

b. All rubber parts should be wiped clean and dried.

c. Inspect all parts for excessive wear or deterioration.

d. Check springs for cracks, corrosion or distortion.

e. Inspect valve seats and piston bore for nicks and burrs.

f. Replace all parts not considered serviceable during these inspections.

Assembly

24. a. Before assembling the valve lubricate the piston, grommet, piston and valve bores with XG-271.

b. Place inlet and exhaust valve in body, follow with inlet valve spring and screw cap grommet. Install inlet screw cap into body making sure the inlet and exhaust valve guide stem fits into the guide hole of the screw cap. Tighten inlet screw cap just enough to compress its grommet to prevent leakage.

c. Place piston return spring in body.

d. Install piston grommet and place piston into body.

e. Place pressure regulating spring over piston.

f. Install cam in bottom of the cover.

g. Install cover with cam on body. Make sure the piston stem fits into the cam counterbore. Connect body and cover together with the four cap screws and tighten.

h. Place cam follower in cover over top of the cam so the indent groove aligns with the lock plunger hole.

j. Install lock plunger, spring and spring cap; tighten the lock spring cap and prick punch to prevent it from working loose. Install adjusting ring, screw it down until the top of the ring is flush with cover.

k. Install adjusting ring, lock with its lock prong positioned in the cover slot. Place handle over cam follower and align the hole in the handle with the one in the follower.

l. Install handle set screw and tighten securely.

Testing Trailer Control Brake Valve

25. Perform operation and leakage checks.

QUICK RELEASE VALVE

Dismantling

26. a. Remove cover using wrench on square portion of exhaust port.

b. Remove spring, spring seat and diaphragm.

Cleaning and Inspection

27. a. Clean all parts in good cleaning solvent.

b. Inspect diaphragm, especially the lower part that contacts the exhaust seat for wear or deterioration.

c. Check the cover exhaust seat for pitting or nicks. This seat should be smooth and sharp. If not, use a fine piece of emery cloth to dress the seat.

d. Check the spring and spring seat for wear or corrosion. Clean or replace as necessary.

Assembly

28. a. Position the spring seat over the diaphragm and then both into the body.

b. Position spring in place.

c. Install cover and tighten securely.

Test of the Quick Release Valve

29. Perform the operating and leakage tests.

SINGLE CHECK VALVE

Dismantling

30. Unscrew cap nut from body and remove internal components.

Cleaning and Inspection of Parts and Repairs

31. Clean all parts in cleaning solvent. Inspect disc valve and seat for pitting or corrosion. Inspect body and cap nut for cracks or damage. Replace damaged parts. It is advisable to replace the two copper sealing gaskets (reference 1, fig 7) one on either side of the check valve seat.

Assembly

32. a. Lightly lap valve seat and disc valve.

b. Assemble internal components ensuring that there is a copper sealing gasket on each side of the valve seat.

c. Screw body into cap nut and tighten just enough to ensure an airtight seal. If the assembly is tightened too much the copper seals will distort, resulting in leakage.

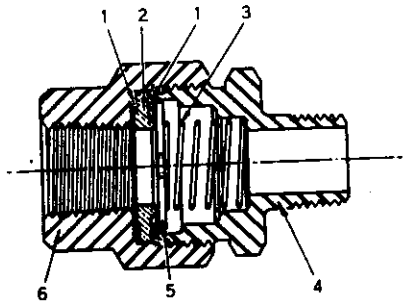


FIG 7 - SINGLE CHECK VALVE

Installing

33. The single check valve is mounted horizontally. An arrow is stamped on the body indicating the direction of normal air flow, into the reservoir.

Testing Single Check Valve

34. Both operating and leakage tests must be made after rebuilding or repairing a single check valve. Leakage at the open end of the valve should not exceed a 1 inch soap bubble in one second.

FRONT AXLE

Tracta Joint and Axle Shafts

35. *Dismantling the Front Hub, Tracta Joint and Axle Shafts.*

a. Remove wheel. Both right and left wheel studs have right hand threads.

b. Remove the six slotted lock nuts located in the sling ring from the driving studs which will allow the sling ring to come free (item 72, fig 8).

c. The centre tap screw (item 67, fig 9) can be removed from the end face of the driving flange (item 66, fig 9) to come free with "O" ring, retainer and cork seal, located in the centre of the flange. The driving flange, however, may still be quite firm in position, in which case the centre capscrew can be used as a puller in the extractor holes (item 86, fig 9) tapped through the driving flange for that purpose.

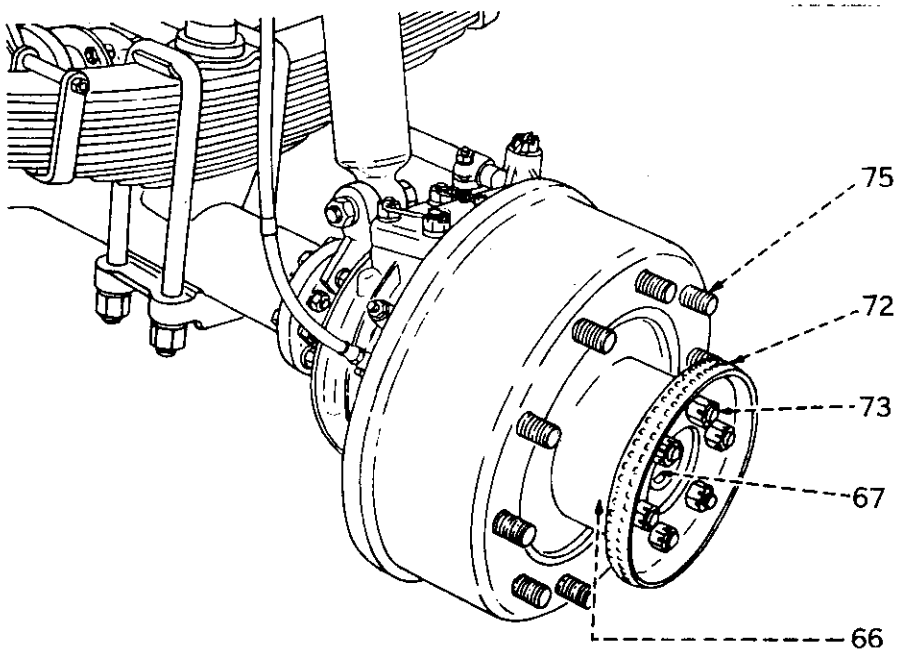


FIG 8 - LEFT HAND FRONT WHEEL

d. The wheel bearing outer adjusting nut is now exposed. The locking tab on one side of the hexagon must be bent away from the flat and the nut can be unscrewed using the special wheel bearing tube spanner supplied. The nut locking washer is now removed, following which the inner adjusting nut can be unscrewed and the outer wheel bearing cone removed (items 60 to 63, figs 9, 10).

e. The hub will then slide off the stub axle, exposing the brake shoe assembly.

f. The brake shoes are removed and the brake hose (item 84, fig 11) disconnected from the wheel cylinder on the inner face of the brake torque plate.

g. The ten cap screws securing the torque plate and stub axle are removed. A container should be available to catch the oil from the tracta joint housing when the stub axle together with driving axle outer is removed (items 78, 79, fig 10).

h. To remove the inner driving axle the bell housing flange bolts (items 34, 22, fig 10) are removed. This allows the bell housing and outer tracta housing assembly, together with inner driving axle, to slide out. The driving axle is tapped out through the bell housing and at the same time the locating collar (item 38, fig 10) is driven off the shaft allowing the shaft to slide free.

King Pin Bearings

36. *Dismantling.*

a. Complete steps a. to g. of para 35.

b. Remove the 11 cap screws from the inner face of the tracta housing outer to allow the rubber sealing ring and metal spacer rings to come free (fig 11).

c. Remove the locking wires from the slotted nuts to the top and bottom of the tracta housing outer (fig 12).

d. Remove the four slotted nuts securing the steering arm. The steering arm is then removed, using two set screws (3/8 UNC x 2 inches long) in the extractor holes provided (fig 12).

e. The outer tracta housing complete with bottom king pin bearing cone and cap should now come clear of the bell housing.

LEGEND TO FIGS 8 TO 14

1 Rim
2 Inner wheel bearing
3 Oil seal
4 Bolt
5 Spring washer
6 Brake drum
7 Dust shield brake drum
8 Brake torque plate
9 Gasket
10 Tracta joint housing outer
11 Steering arm stud
12 Steering arm RH
13 Steering arm LH
14 Shim stack
15 Capscrew
16 Spring washer
17 Top king pin bearing
18 Tracta joint
19 Shock absorber bracket
20 Tie rod socket
21 Split pin
22 Bell housing flange bolt, shock absorber mounting
23 Spring washer
24 Nut (see also 34, 35, 36)
25 Ball bolt
26 Nut
27 Split pin
28 Tie rod
29 Front axle housing
30 Driving axle, front, inner
31 Bolt
32 Washer (spring)
33 Nut
34 Bell housing flange bolt
35 Bell housing flange spring washer
36 Bell housing flange nut
37 Lubricator
38 Locating collar, inner axle
39 Bush, inner axle
40 Gasket
41 Bottom king pin bearing
42 Bell housing, tracta joint
43 Serrated oil retainer (2 halves)
44 Retainer, serrated, oil seal (rubber)
45 Ring seal (assembly)
46 Spacer, seal
47 Retainer, inner seal
48 Stud, bottom king pin bearing (3)
49 Cap, bottom, king pin
50 Spring washer
51 Slotted nut
52 Wire
53 Bolt
54 Spring washer
55 Brake shoes
56 Tube, grease trap
57 Grease trap
58 Screw
59 Spring washer
60 Outer wheel bearing
61 Nut, inner, wheel bearing adjusting
62 Lockwasher
63 Nut, outer, wheel bearing adjusting
64 Hub front
65 Gasket
66 Driving flange
67 Centre cap screw
68 Spring washer
69 "O" ring seal
70 Retainer "O" ring
71 Sling ring lock nut
72 Sling ring
73 Stud, drive
74 Stud, wheel, RH
75 Stud, wheel, LH
76 Wheel nut
77 Snap ring, driving axle, outer
78 Driving axle, front, outer
79 Stub axle
80 Bush, axle, outer
81 Wheel stop
82 Filler plug
83 Brake return springs
84 Brake hose
85 Steering arm extractor holes
86 Driving flange extractor holes
87 Cork seal

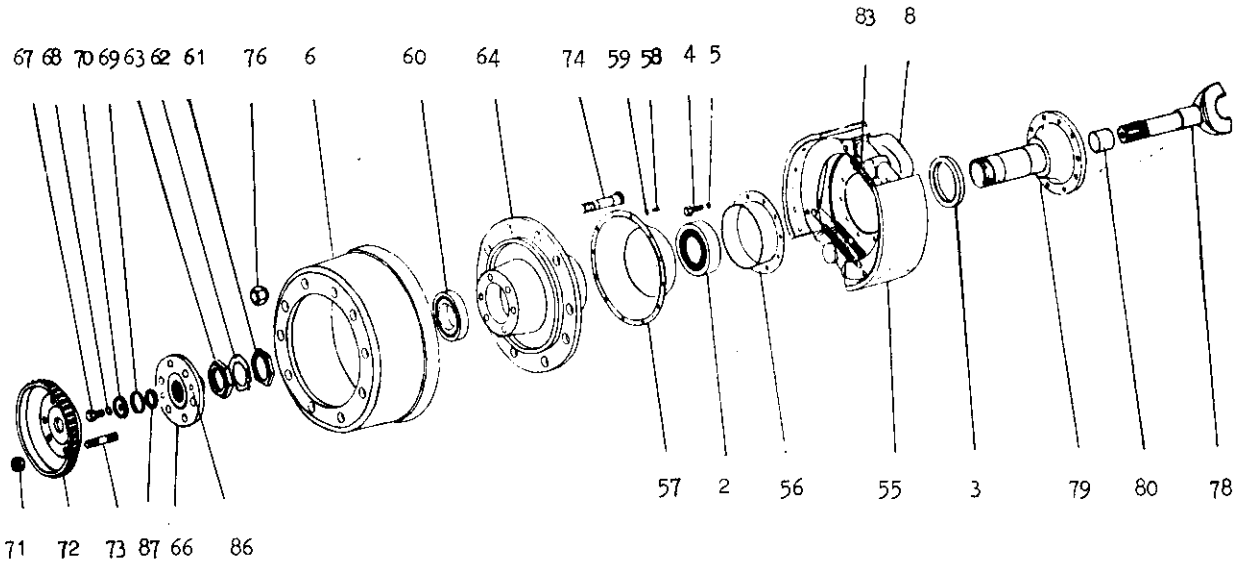


FIG 9 - FRONT RIGHT HUB ASSEMBLY (EXPLODED)

f. Remove the three slotted nuts holding the bottom king pin bearing cap and extract the cap using the aforementioned set screws.

Front Differential

37. *Removal.*

a. Disconnect front propeller shaft.

b. Remove both front wheels. All wheel studs have right hand threads.

c. Remove each wheel hub and constant velocity joint housing assembly complete by removing the 12 bolts through the bell housing flange. The complete assembly with drive shafts will then slide out.

d. The 12 cap screws securing the differential carrier assembly can be removed, following which the assembly will come free.

NOTE:- Adjustment of the front axle differential assembly is identical with that of the rear axle. The front differential assembly is the same as the rear except that the oil scoop attached to the side of the differential is of the opposite hand to the rear, to allow for the opposite direction of rotation. Serious damage can occur if the correct oil scoop is not used.

Assembly of Front Axle

38. a. Assemble the differential carrier in the axle housing similarly to the rear differential. To avoid serious damage to the differential, check that the oil scoop fitted will feed oil to the differential planetory gears during forward rotation of the wheels.

b. Pass the rubber oil seal and three retaining rings over the axle housing in the following order; large ring with locating dowels; rubber ring; thick plain ring; thin plain ring. Ensure that the rubber seal is facing with the knife edge towards the differential and that the locating dowels on the large ring are towards the rubber seal (see fig 10).

c. Press upper and lower king pin bearing cups into the position in the bell housing. Press the inner bronze bush into the bore of the bell housing from inside the cavity, being careful that the oil feed groove in the bush is towards the smaller diameter king pin bearing (see fig 10).

d. Assemble the inner driving axle in the bell housing and bush and slip the locating collar over the splined end of the shaft, driven up to the bush to give an end float of 0·010 inch to 0·015 inch (fig 10).

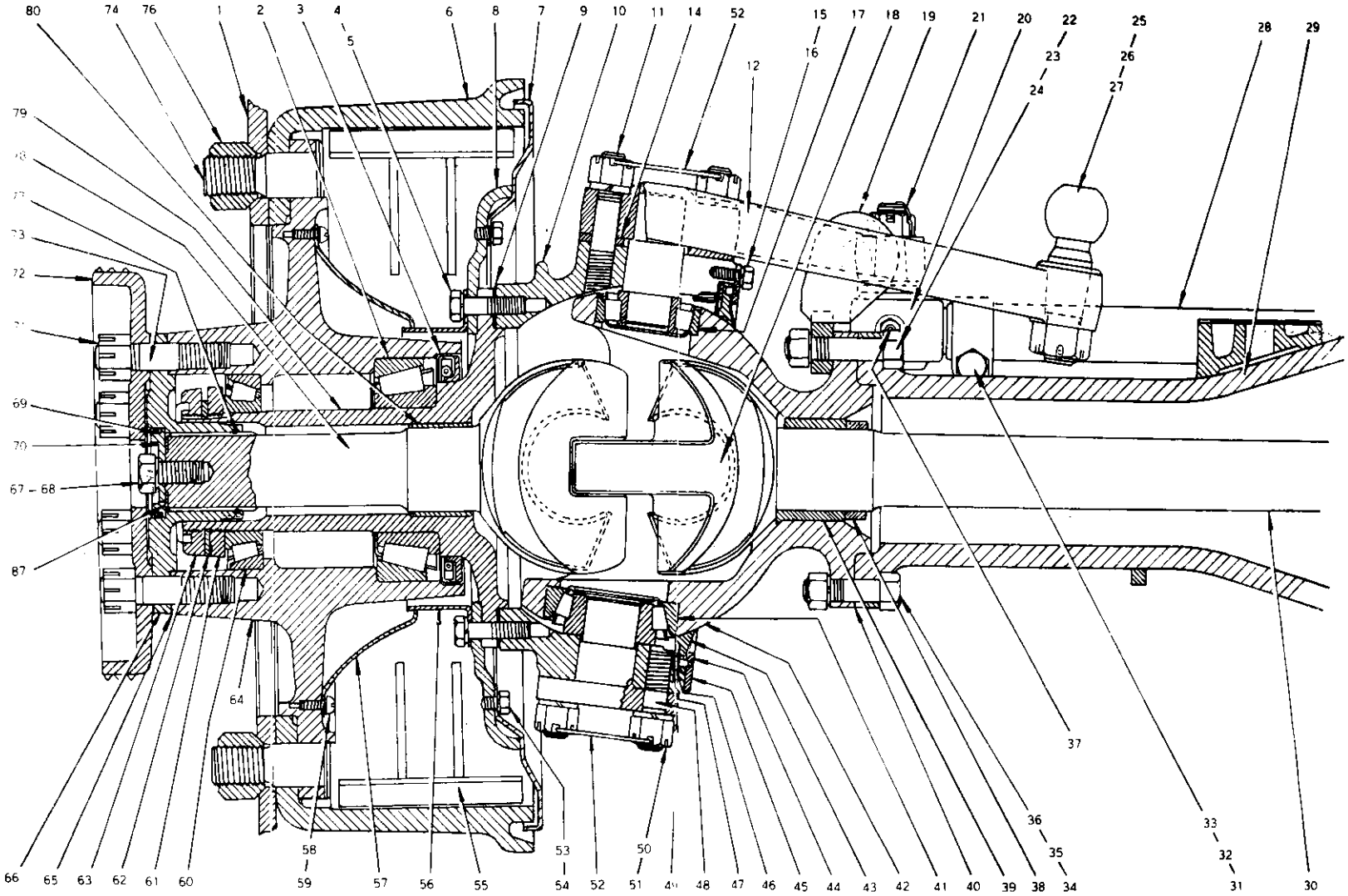


FIG 10 - FRONT AXLE RH HALF (SECTIONAL VIEW)

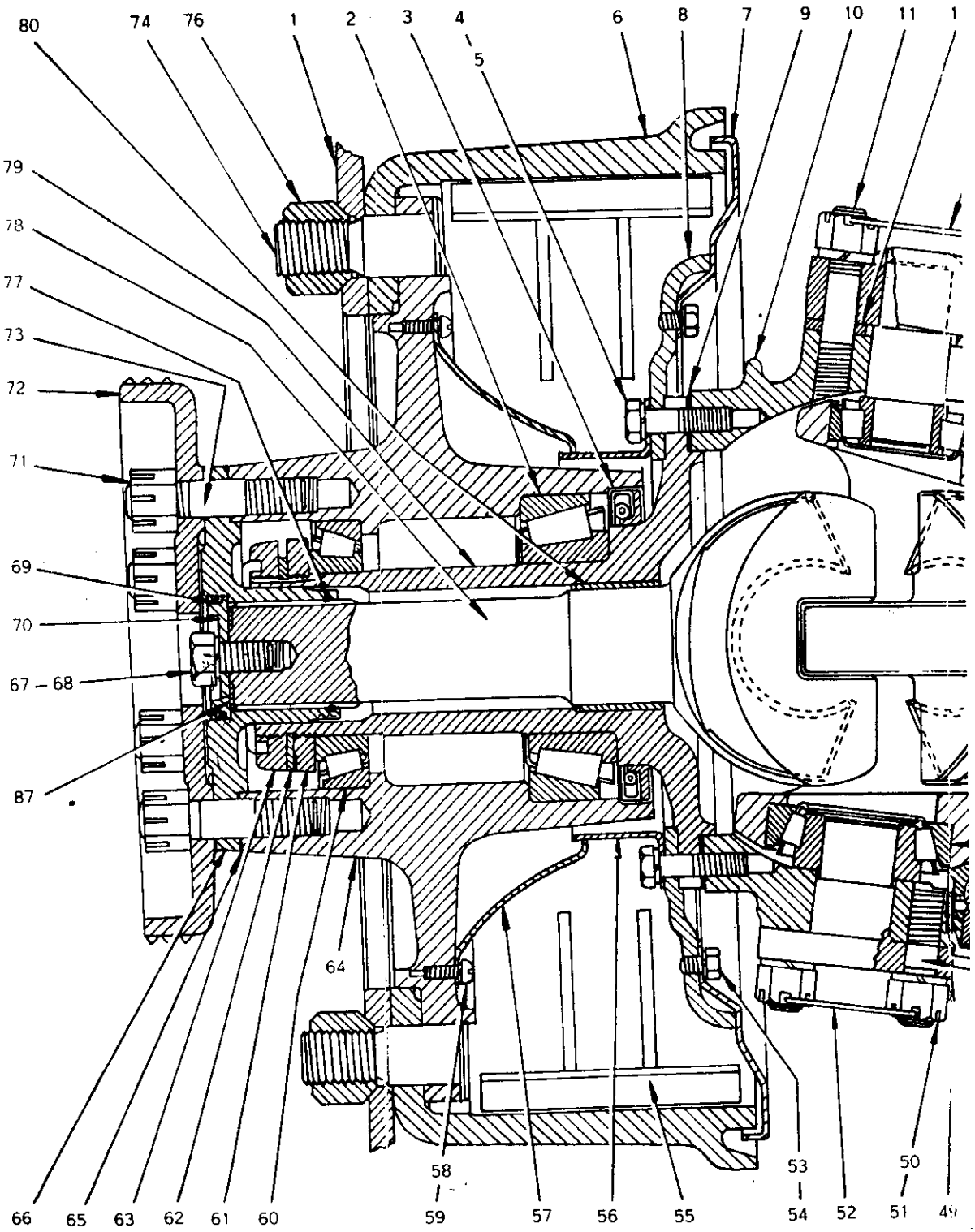
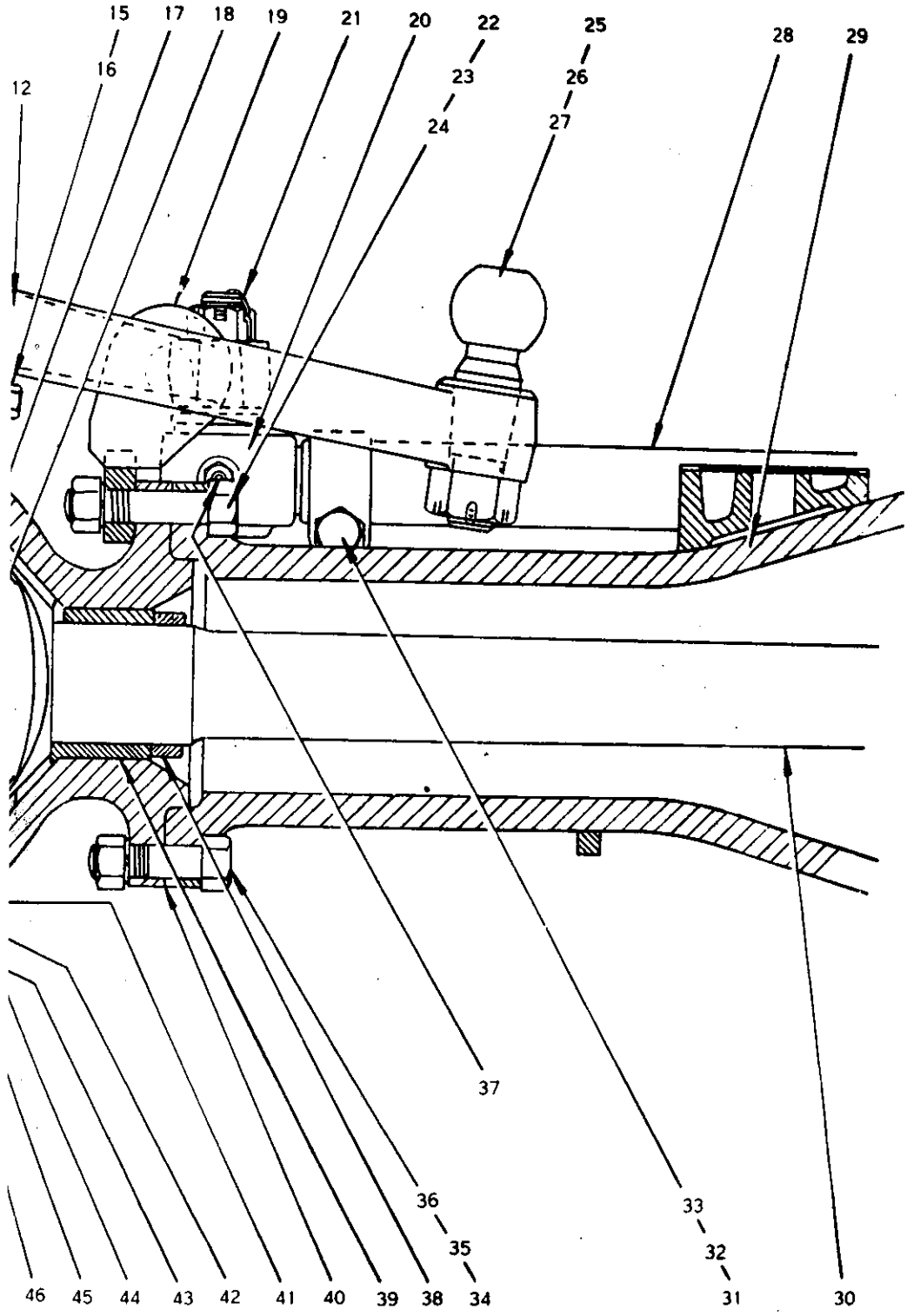


FIG 10 - FRONT AXLE



(SECTIONAL VIEW)

e. Mate the bell housing flange to the axle housing with gasket and retain by one of the flange bolts. The rubber sealing ring and locating rings must now be moved over the flange to hang on the bell housing. All of the 12 high tensile flange bolts can be fitted, the three longer ones also securing the shock absorber bracket in position at the top of the flange (facing as shown in fig 11). These bolts are tightened to a 75 lb ft torque.

f. Place the top king pin bearing cone in position and hold the bottom king pin bearing cone in place, slip the tracta housing outer over into its approximate position and place the bottom king pin cap over the studs and tap home. The three slotted nuts can be screwed finger tight.

g. Place the shim stack over the top four studs on the tracta housing outer. (This consists of one 0·111 inch shim and an average number of seven shims 0·005 inch thick below it). Place the steering arm in position, tap home, and screw the four slotted nuts down finger tight.

h. Tighten the bottom three slotted nuts to 90 lb ft torque and lock-wire the three nuts together.

j. Tighten the top four slotted nuts in stages to 90 lb ft torque, checking at each increment that the king pin bearings have not excessive preload. The correct preload is obtained using a spring balance on the steering arm. A force of 6 to 10 lb is required on the end of the track rod arm to turn the outer tracta housing. This is adjusted by adding or removing 0·005 inch shims from the stack. Note that the torque measurements with the spring balance are done *WITHOUT* the rubber oil seal and retaining rings assembled. After the preload is set correctly tighten the four slotted nuts to 90 lb ft torque and lock-wire in pairs (fig 12).

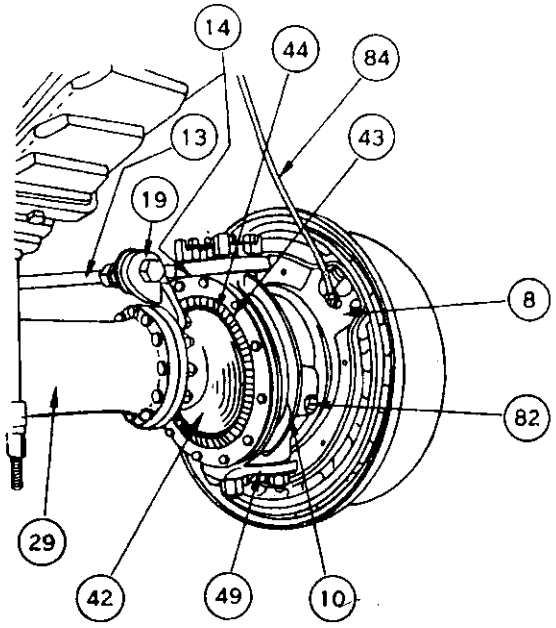


FIG 11 - LEFT HAND FRONT WHEEL

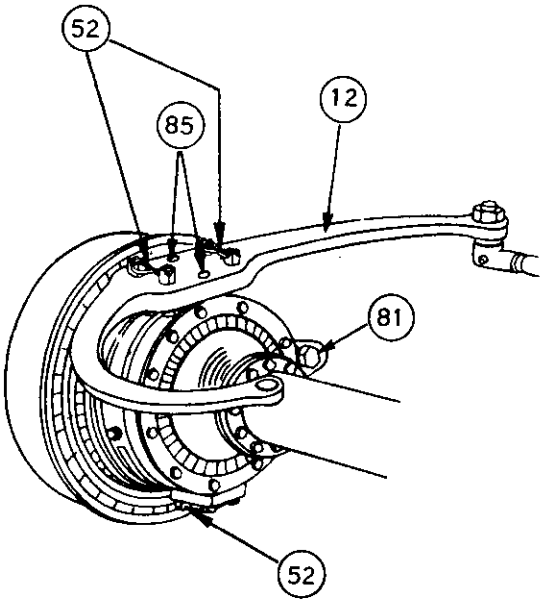


FIG 12 - RIGHT HAND FRONT WHEEL

NOTE:- When bearings are found fit for further service, they should be assembled with half the original preload torque loading specified.

k. Fit the rubber oil sealing ring and retaining rings in position in the tracta housing outer. Two serrated bronze half rings are located between the rubber ring and large locating ring to reinforce the knife edge of the rubber sealing ring. Tighten the seal assembly in place by 11 cap screws (fig 10).

l. Press the bronze bush outer into the stub axle with oil groove breaking through to the end of the bush on the flanged end of the axle and with the groove located circumferentially closest to another groove through the threads on the stub axle. Fit the circlip into a groove in the splines on the outer driving axle, and place the two centre floating components of the tracta joint in the bell housing to mate with the driving axle inner (fig 10).

m. Place the driving axle outer in the stub axle and bush, and mate the stub axle flange to the outer face of the tracta housing outer, with a gasket between the two. At the same time, the driving axle outer must mate with the centre floating components of the tracta joint. Locate the stub axle with the groove through the threads uppermost (fig 13). Tighten the stub axle up together with the brake torque plate and dust cover to 30 lb ft torque.

n. Fit the brake shoes, ensuring that the four return springs are correctly placed with the overhang of the coils towards the brake shoe webs (fig 14). The compression struts must be correctly located between the twin shoe webs in the socket of both equalizing arms. For adjustment of these struts see VEH G 553 para 3.g.

o. Screw the grease trap with 12 slotted round head screws to the inner face of the hub and press the wheel bearing cups in from both ends of the hub. Assemble the inner bearing cone in the cup and press the oil seal over it, taking care to have the lip of the seal facing in towards the bearing. Assemble the wheel hub on the stub axle and fill the bearings and cavity between them approximately 2/3 full with wheel bearing grease. Assemble the outer wheel bearing cone and screw the wheel bearing inner adjusting nut on (shoulder outwards). Using the special tube spanner provided, tighten the nut so that the end float is eliminated but the hub still turns freely. Assemble the nut locking washer and tighten up the second wheel bearing nut. Check that the hub still turns freely.

WHEEL BRG ASS.
ASSEMBLE WITH SLIGHT PRELOAD

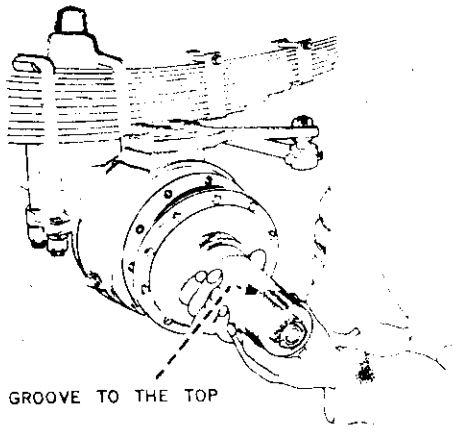


FIG 13 - ASSEMBLY OF STUB AXLE ON TRACTA HOUSING

p. Assemble the driving flange on the outer face of the hub with a gasket underneath. The hub should be turned until the line visible on the end of the drive shaft outer is horizontal (line shown in figs 14 and 13). Assemble the "O" ring oil seal and retainer in position with the centre cap screw finger-tight, using a new cork seal.

q. Assemble the sling ring over the driving studs and screw the slotted lock nuts up firmly on them (fig 10).

r. The running clearance on the tracta joint components should now be checked. The hum must be located with the line on the drive shaft horizontal and the hub turned to the maximum lock position. The centre cap screw is slackened off approximately 1/2 inch and the end float on the driving axle outer measured by pushing this screw in and out.

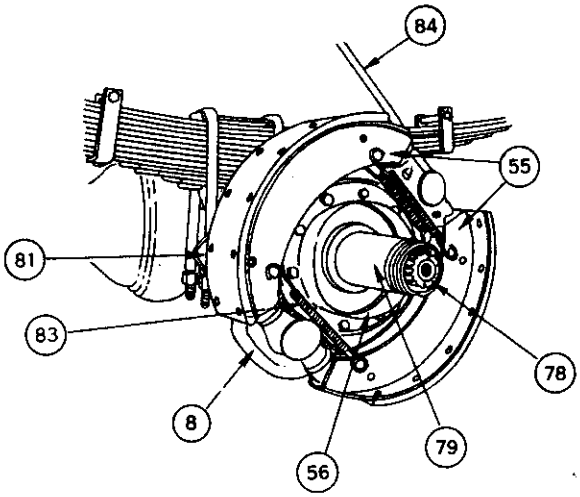


FIG 14 - RIGHT HAND FRONT WHEEL (HUB REMOVED)

The end float should be between 1/8 and 11/32 inch. If it is not, a check should be made on all measurements and adjustments, before altering anything. (If this clearance becomes less than 1/8 inch a shim may be inserted between the driving flange and the hub outer face, but care must be taken that this does not seize the driving axle outer hard up against the bronze bush). When the end float is correct, tighten the slotted lock-nuts on the driving studs to 150 to 160 lb ft torque. The centre cap screw should be tightened firmly.

s. The brake hose should be connected and the brakes bled and adjusted.

t. Fill the tracta housing outer and the differential with oil.

u. Place the wheel on the hub, connect track rod and drag link and adjust toe-in by rotating the track rod. The toe-in is to be 1/16 inch to 3/16 inch measured on the side of the wheel rims.

v. Each hub must turn from neutral through an angle of 33 degrees before striking the stop on the outer tracta housing. The camber angle of each wheel is 1 degree positive. An axle is unacceptable if the camber angles of the wheel differ by more than 1/2 degree.

Removal and Replacement of Rubber Sealing Ring

39. a. Remove wheel.

b. Remove wheel hub and constant velocity joint housing assembly complete by removing bell housing flange bolts (as in para 38).

c. Remove oil seal and replace with new one.

d. Reassemble.

CAB

Front End Removal

40. The front end section of the cab can be removed in one piece as follows:-

a. Disconnect the battery terminals and remove the battery (see fig 15).

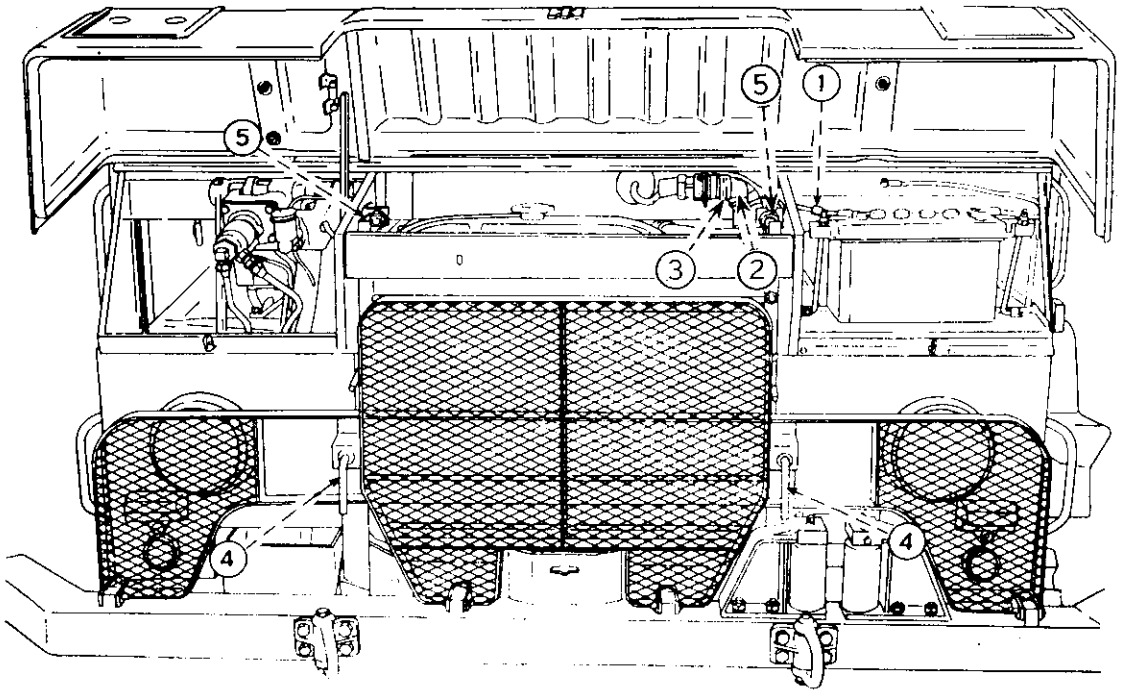


FIG 15 - CAB FRONT END

b. Pull the negative cable through the grommet hole in the side of the battery compartment, bringing the grommet with it. The cable can then hang loose.

c. Disconnect the cannon plug by unscrewing the serrated ring nut (item 3, fig 15) and pulling out the elbow sleeve (item 2).

d. Disconnect the five lower pull/off terminals (item 2, fig 16) and disconnect the earth cable (item 3, fig 16).

e. Remove the two windscreen wiper arms and blades.

f. Detach the steering column at the instrument panel (two bolts) one of which can be seen as item 3, fig 17.

g. Unclip three clips which secure the horn-to-steering-column cable to the front end crossmember (item 4, fig 18).

h. Unscrew the two hand bolts (item 4, fig 15) and swing the brush guard forward and down on its hinges. This then becomes a step up to the front compartments.

j. Remove the engine cover.

k. Remove two bolts from the top of each "A" frame, one of which is shown as item 1, fig 19.

l. Disconnect the clutch hydraulic pipe at the union near the air compressor.

m. Remove four bolts (two from each side) attaching the radiator stabilizers to the side of the front compartments, and swing the brackets clear (item 5, fig 15).

n. Disconnect the front speedometer drive cable from the rear cable, unclip it from the chassis and cab, and coil it up to the front end. It will then come away with the front end assembly.

o. Take out all floor mats.

p. Remove right hand toe board attaching screws (but not the toe board itself).

q. Remove four screws attaching the left hand toe board to the floor panel.

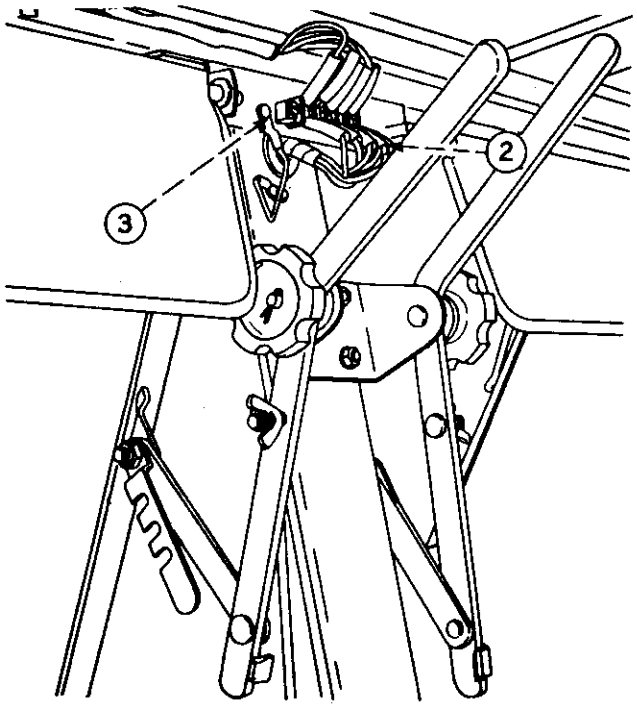


FIG 16 - CENTRE PILLAR CONNECTIONS

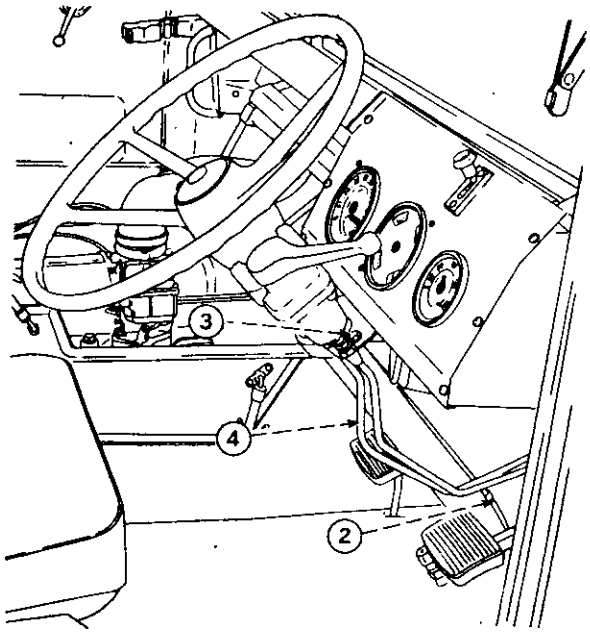


FIG 17 - AIR CONNECTIONS

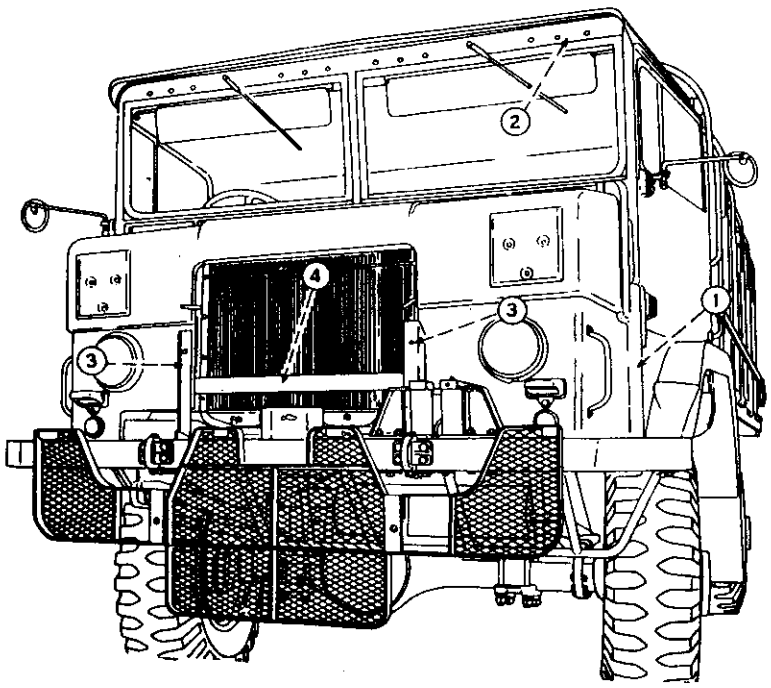


FIG 18 - CAB FRONT END REMOVAL

r. Remove the small toe panel to which the accelerator cross shaft is attached.

s. Remove the air lines (item 2, fig 20) and (item 4, fig 17) from the air control valve and toe board fittings. Disconnect the air gauge pipe (item 2, fig 17) at the manifold fitting on the toe board.

t. Remove eight capscrews from each side flange (item 1, fig 18) and ten capscrews from the top mounting flange (item 2, fig 18).

u. Remove the two brush guard attaching pillars (item 3, fig 18) and the front bumper bar.

v. The front end assembly can then be removed.

NOTE:- During front end removal take particular note of the locations of all seals to ensure correct installation on reassembly.

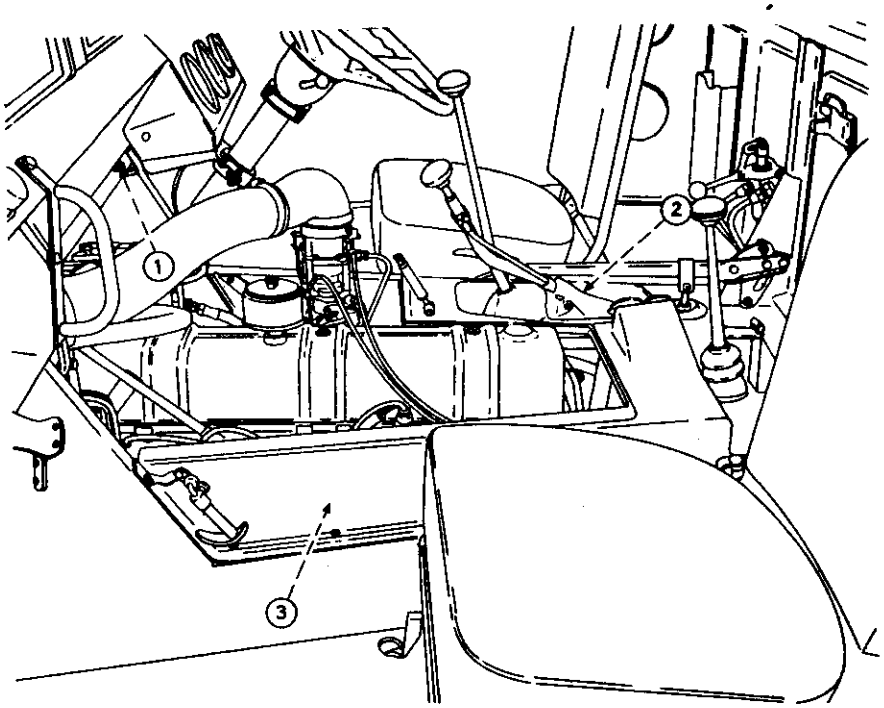


FIG 19 - CAB INTERIOR

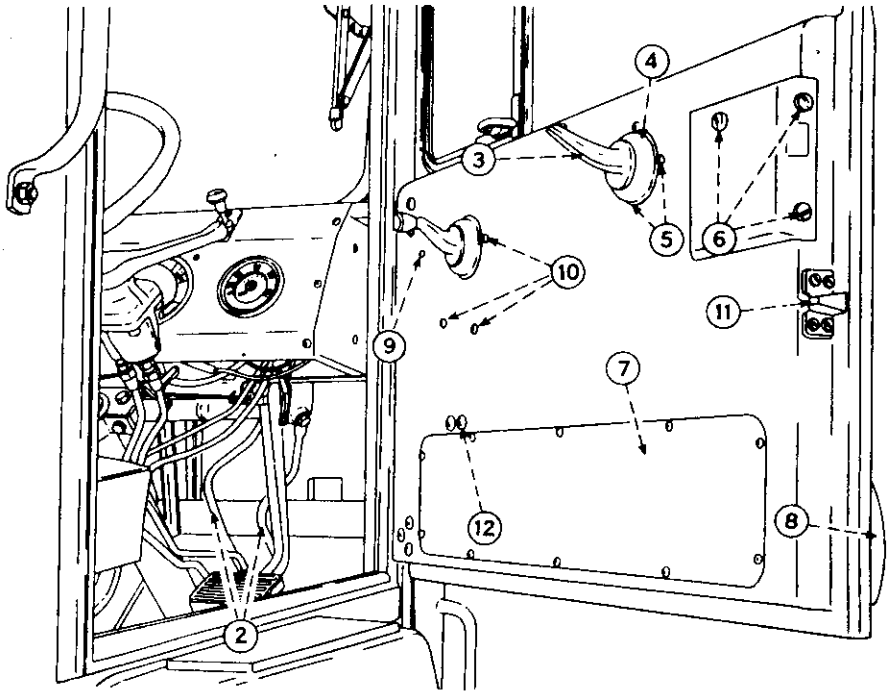


FIG 20 - CAB DOOR

Removal of Cab Front Mountings (Figs 21 and 22)

41. Note the correct order of assembly of the front mounting rubbers and remove the 1/2 inch x 3 1/2 inch hex hd bolts.

Removal of Cab Rear Mountings (Figs 22 and 23)

42. Place suitable blocks between the chassis side rails and the cab crossmember rear, to support the cab. Remove four 3/8 inch x 1 inch hex hd bolts which attach the rear mountings to the cab crossmember. (Hand holes in the cab crossmember provide access to the bolt heads).

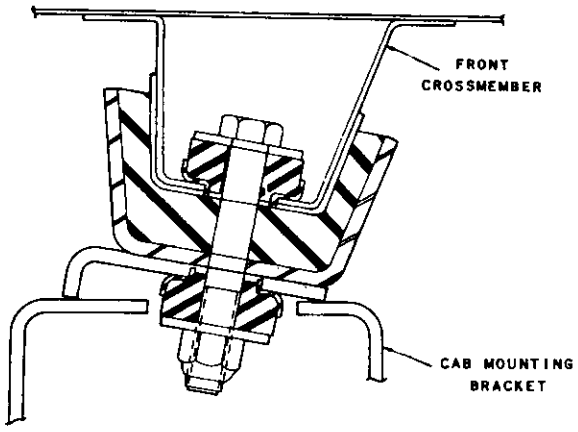


FIG 21 - CAB MOUNTING FRONT

Cab Removal

43. Having removed the cab mountings front and rear, proceed as follows:-

a. Remove the engine cover by unhooking the spring catches.

b. Disconnect the throttle and choke cables from the carburettor.

c. Undo the press buttons of the control lever boot (item 2, fig 19).

d. Remove 16 screws from the lower cover (item 3, fig 19) and lift off the cover.

e. Remove the rear clevis pin to disconnect the handbrake rod from the bellcrank.

f. Disconnect earth strap at LH front cab mounting bracket.

g. Disconnect the horn wire at the cable connector located near the chassis rail beneath the engine air cleaner.

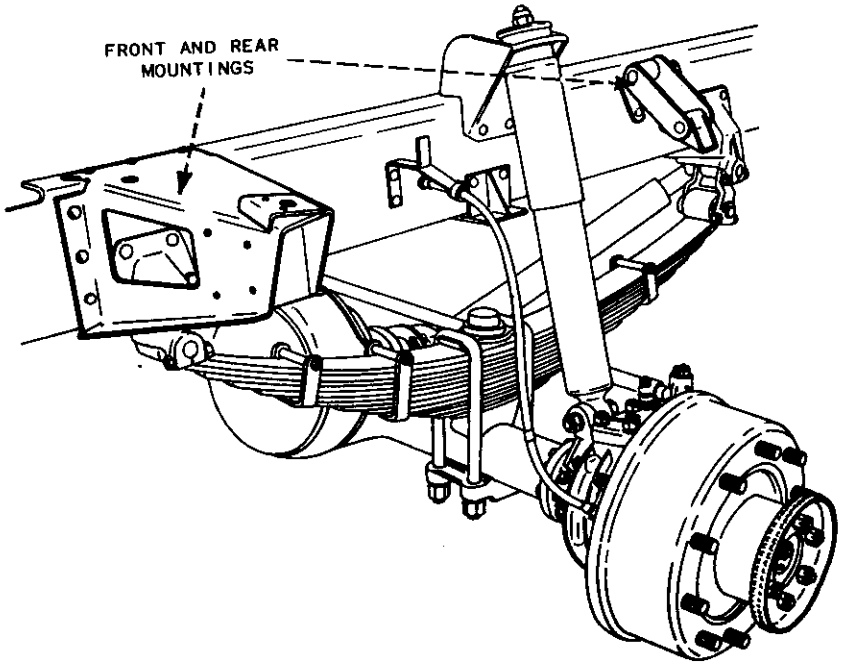


FIG 22 - CAB MOUNTING BRACKETS

h. Disconnect the starter motor cable from the starter motor and pull clear.

j. Disconnect the flexible fuel pipe from the fuel pump.

k. Disconnect the oil pressure sender cable at the sender unit.

l. Disconnect the engine temperature sender cable at the sender.

m. Disconnect the low tension cable from the negative terminal of the ignition coil.

n. Disconnect the foot throttle to carburettor rod at the front end.

o. Remove the hydraulic clutch control pipe bracket from the engine tunnel RH side.

p. Disconnect the fuel sender cable connector situated under the rear LH corner of the engine tunnel.

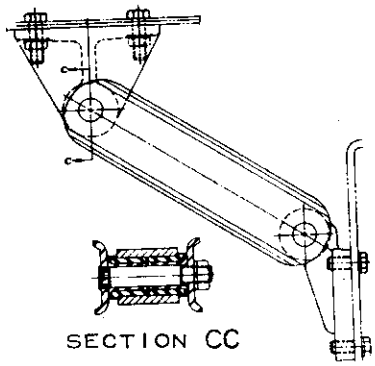


FIG 23 - CAB MOUNTING REAR

q. Remove the clevis pin from the front yoke of the transfer case control rod.

r. Remove the swivel bolt from the rear end of the transmission control rod.

s. After identifying with tags to ensure correct reassembly, uncouple the three winch control hoses beneath the cab.

t. Disconnect the fuel pipes from the two-way cock under the cab floor.

u. Disconnect the front speedo cable from the rear speedo cable at the coupling situated inside the RH chassis rail just rear of the front spring rear hanger. (If the front end has been removed this will have been disconnected previously). Unclip the cable and coil it up as described for front end removal.

v. After carefully identifying for correct reassembly, disconnect two air brake hoses below the RH toe panel. (If the front end has not been removed, access to these hoses can be obtained by taking out the RH headlamp).

w. Disconnect six cable connectors on the harness leading into the steering column. (These are coloured for identification on reassembly).

x. Remove the horn button and steering wheel.

y. Lift the cab a few inches and check to ensure all cables, pipes and controls are free, then lift off the cab.

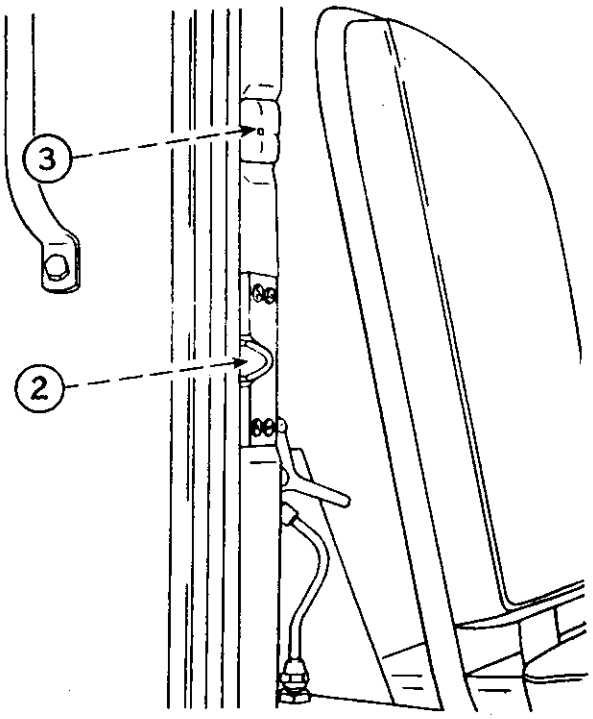


FIG 24 - DOOR PILLAR

Cab Door Removal

44. Tap out the two hinge pins - the doors are then free to lift off.

Door Glass Renewal

45. a. Remove ten tapping screws and take off the door access plate (7).

b. Open the vent window.

c. Wind the main window right down.

d. Remove two round head screws (12) securing the front glass run channel.

e. Remove one round head screw securing the same run channel. This screw is situated just below the vent window and access to it is gained by raising the lower seal of the vent window the screw head being upwards.

f. Remove one flat head countersunk screw and nut securing the top end of the glass run channel to the top of the door; access to this screw is downwards from above the door near the top corner of the vent glass.

g. The glass run channel can now be moved forward sufficiently to allow the main door window to be slid off the roller on the actuating arm of the regulator.

h. Pull the bottom of the window towards you and down through the door access opening.

j. Remove all broken glass and the rubber insert from the glass run channel.

k. Using raw rubber sheet, press the new glass centrally into the channel and trim off excess rubber. Allow the rubber to air cure for 24 hours before using the window again.

Vent Window Removal

46. To remove the vent window take out two pan headed screws securing the top swivel bracket to the door, and two screws securing the bottom swivel bracket to the inside of the door inner panel. One of these screws is visible as item 9. The vent window can then be lifted out bringing the lower swivel bracket with it.

Door Lock Removal

47. a. Remove the access cover (7).

b. Wind the main door glass to the top.

c. Remove the inside door lock handle (3) by pressing the escutcheon and removing the locking pin from the spindle. Take off the handle and escutcheon (4).

d. Remove the three round head screws and washers (5) securing the handle plate to the door panel.

e. Push the spindle and plate through into the door and let it swing down on the actuating link to which it is attached.

f. Remove the three round head screws (6) securing the lock to the door (two located on the jam face and one on the inside panel).

g. Through the access hole remove the circlip attaching the lever of the exterior door handle to the actuating link.

h. Lower the lock plate with both actuating links down and out through the door access hole.

Door Fitting

48. Two adjustments are provided:-

a. The wedge plate dove tail (item 11, fig 20) on the door can be adjusted vertically by loosening the fixing screws and sliding the dove tail to the desired position.

b. Similarly the door lock striker plate (item 3, fig 24) can be adjusted horizontally.

WINCH

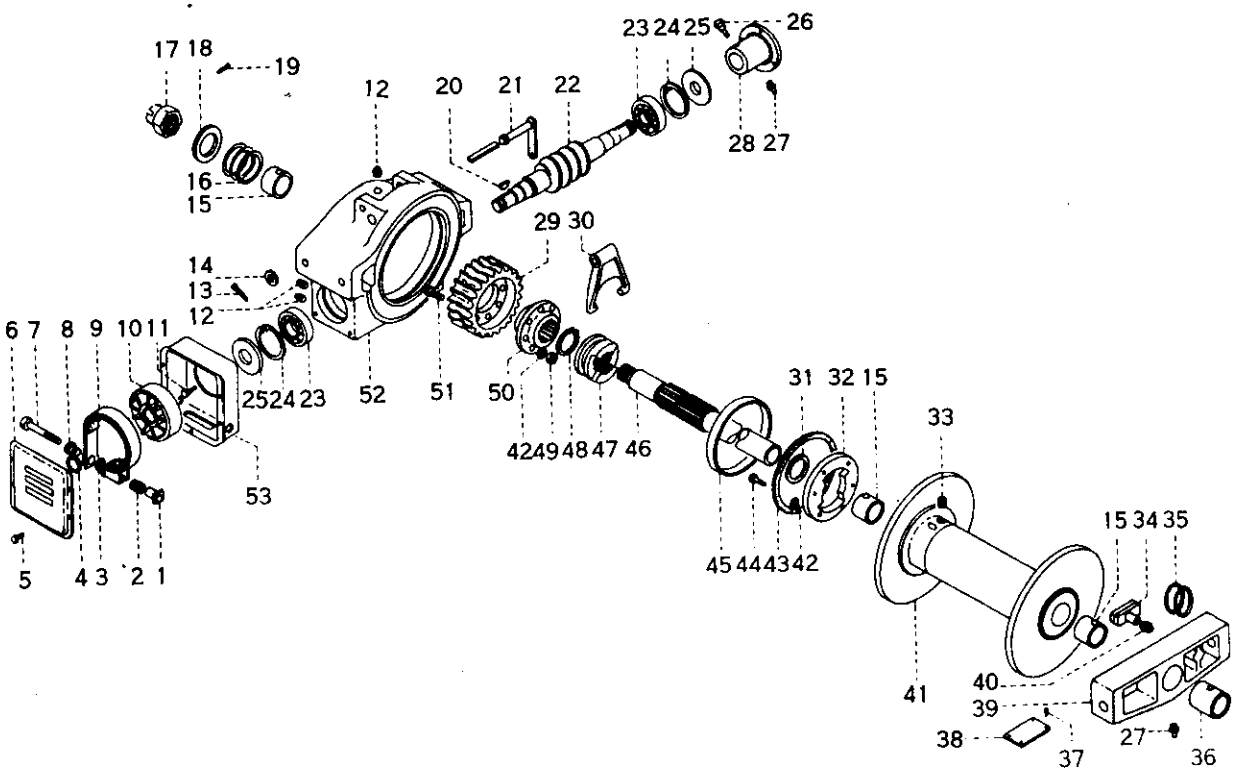
Automatic Brake

49. a. If the brake fails to hold the winch rated load, remove cover (6) and inspect brake mechanism to see no parts are damaged or broken. Increase brake tension by tightening adjusting bolt (7).

b. Check brake adjustment by load testing and readjust spring if necessary. (A properly adjusted brake band will smoke if the winch is run for a long time without stopping).

Dismantling and Assembling the Winch

50. a. Remove input drive flange (28), automatic brake case (53), automatic brake band and automatic brake drum from the worm shaft.



1	Nut, adjusting	18	Washer	35	Shim, drumshaft
2	Spring	19	Split pin	36	Bush, frame
3	Circlip	20	Key	37	Screw
4	Circlip	21	Lever, clutch operating	38	Nameplate
5	Screw	22	Worm shaft	39	Frame, end
6	Cover, automatic brake	23	Bearing, ball	40	Spring, drag brake
7	Bolt, brake adjusting	24	Circlip	41	Drum, assembly
8	Bushing	25	Oil seal	42	Washer, spring
9	Band, brake, w/lining	26	Pin, shear	43	Ring, oil retaining
10	Drum, automatic brake	27	Nipple, grease	44	Bolt, hex hd
11	Bolt, hex hd, w/shake-proof washer	28	Flange, input drive	45	Bushing, drum
12	Plug, pipe	29	Gear, worm	46	Shaft, drum
13	Split pin	30	Yoke, shift	47	Clutch, sliding
14	Washer	31	Washer, thrust	48	Circlip
15	Bush	32	Ring, clutch	49	Nut, hex
16	Shim	33	Setscrew, socket	50	Spider
17	Nut, castellated	34	Shoe, assembly, drag brake	51	Bolt, hex hd
				52	Case, gear
				53	Case, automatic brake

FIG 25 - WINCH (EXPLODED VIEW)

b. Remove the oil seals (25) from each end of the worm shaft by means of a pointed tool driven into the seals.

c. Remove the circlip (24) from one end of the worm shaft.

d. Using a soft hammer, tap the worm shaft through the housing. It will be necessary to rotate the winch shaft slightly as this operation is being performed to allow the worm shaft to clear.

e. Remove end frame setscrews.

f. Remove end frame (39) complete with the end frame bush (36).

g. Remove spacer washers.

h. Slide off winch drum assembly from winch shaft. In carrying out this operation, care must be taken to see that thrust washer (31) is not lost.

j. Remove clutch operating lever and shaft (21) by removing the split pin and retaining washer.

k. Slide the dog clutch (47) outwards. This will allow the clutch operated yoke to fall and so enable it to be removed through the housing.

l. Remove the nut (17), washer (18) and adjusting shims (16).

m. The winch shaft complete with worm wheel and spider may now be removed from the winch housing.

n. Remove winch support angle members.

NOTE:- With all parts dismantled in the manner indicated, it is advisable to check all parts for wear and replace where necessary.

Winch Reassembly

51. Assemble the winch in the reverse order to dismantling, with the following conditions:-

a. New circlips are always to be fitted.

b. When fitting spacer shims between the washer (18) the gear case housing (52), ensure that a running clearance of between 0·010 inch and 0·020 inch is maintained.

c. The above running clearance (0·010 inch to 0·020 inch) must also be maintained when fitting spacer shims between the end frame (39) and the winch drum assembly. To achieve this clearance loosen the base angle bolts and pull the end frame in a direction away from the gear case. This will take up all the clearance in the bolt holes and permit the correct amount of shims to be determined.

d. When fitting the winch drum assembly to the winch shaft, ensure that the thrust washer (31) is located in the retaining groove machined into the winch drum.

Shear Pin Replacement

52. The winch is protected from overload damage by the drive line shear pin (26). Should this pin fail, unscrew the head portion from the drive flange (28) and remove the broken section by using a fine punch inserted through the drift hole in the flange located diametrically opposite the tapped hole for the shear pin. Insert and securely wire a replacement shear pin.

Lubrication

53. a. *Winch Assembly.*

(1) Fill gear case to oil level plug at the end of the case just above the drain plug (4 1/2 pints of OMD-330 gear case oil).

(2) Lubricate all grease fittings on the winch and winch drive parts.

b. *Controls.*

(1) Grease the cylinder grease nipples.

(2) Oil the pivots and the clevis pins of the cylinder control.

(3) Check cylinder and valve seals for leakage whilst lubricating.

c. *Guide Rollers and Fair Leads.* Grease all nipples and lubrication points.

AIR CYLINDER, WINCH (REFER FIG 26)

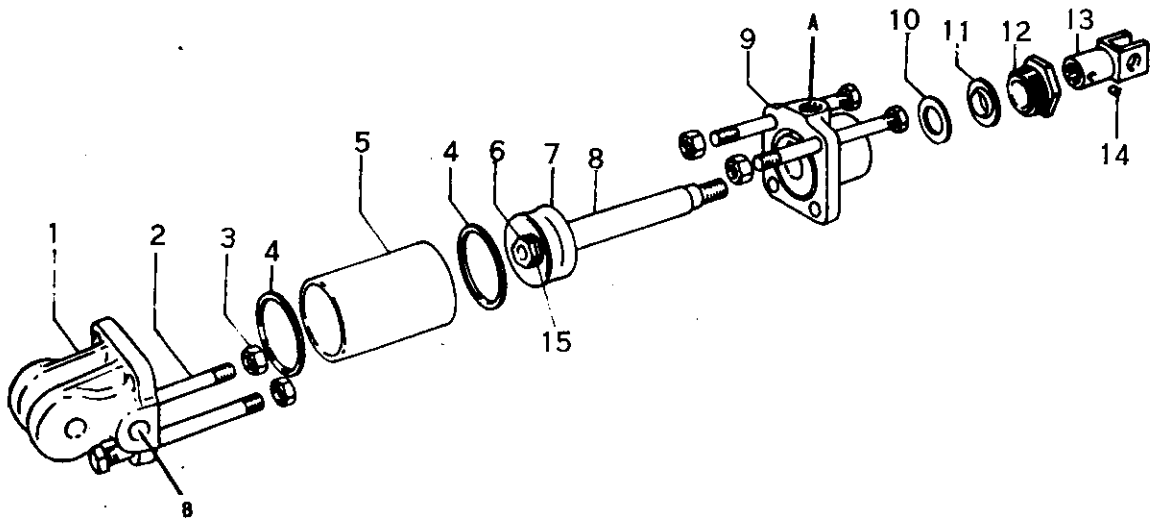
NOTE:- Except for lubrication of the two clevis pins, no maintenance is required.

Dismantling and Inspection

54. Should air leaks develop, the reservoir is to be drained and the air cylinder removed, dismantled and inspected as follows:-

a. Loosen the grub screw (14) which secures the yoke (13) to the piston rod (8) and screw off the yoke.

b. Loosen the gland adjuster (12).



1 Blind end
2 Strap bolt
3 Nut, strap bolt
4 Gasket
5 Barrel
6 Nuts (two)
7 Piston
8 Rod
9 Seal end and bush assembly
10 Tulip seal
11 Gland packings (two)
12 Gland adjuster
13 Yoke
14 Grub screw
15 Washer

FIG 26 - AIR CYLINDER, WINCH

c. Remove the nuts (3) from the four strap bolts (2).

d. Remove the seal end (9) with the piston (7) and rod (8) assembly.

e. Remove the piston rod from the seal end.

f. Remove the barrel (5) from the blind end (1).

g. Remove the gasket (4) from the annular groove in the seal end (9) and blind end (1).

h. Clean and examine all parts. The cylinder bore should be smooth and free from scuffs, burrs or damage.

j. Cylinder end faces must be clean and free from damage.

k. The annular grooves in the two ends, must be clean and free from burrs, nicks or other flaws.

l. The piston (7) should be examined for imperfections such as scratches or distortion, and replaced if at all faulty.

m. To remove the piston from the piston rod, clamp the flats at the yoke end in a vice and remove the two nuts (6) and flat washer (15) which secure the piston cup. Fit new piston and reassemble the washer and nuts, locking them together securely.

Reassembly

55. Lightly smear all internal surfaces with Molybdenum Disulphide grease and reassemble in reverse order to disassembly, observing the following:-

a. In entering the piston into the cylinder bore every care must be taken to avoid damaging the piston.

b. Ensure that the ends are assembled in correct relation to each other. The port A at the piston rod end is to be located at the top with the other port B facing forward.

c. Assemble a new tulip seal (10) and new gland packing (11) with gland adjuster (12), and screw the adjuster up to the gland packing finger tight.

d. When assembling the yoke (13) to the piston rod, screw it up to the end of the thread and, if necessary, back it off until the grub screw hole registers with one of the flats on the rod. Assemble the grub screw and tighten.

e. Reassemble the cylinder in the truck and before connecting up the air hoses, operate the control valve in both positions to blow out any dust in the lines.

f. Check the mounting bracket bolts for tightness.

g. Charge the air reservoir to maximum pressure, place the control valve in the engaged position, smear soap suds around the gland adjuster, and tighten the nut until bubbles cease to appear.

AIR VALVE, WINCH CONTROL (REFER FIG 27)

Dismantling and Inspection

56. If an air leak develops at the valve it should be removed, dismantled and inspected as follows:-

a. Drain the air system by opening the drain cock in the reservoir.

b. Disconnect three pipes from the winch control valve.

c. Remove the valve complete from the cab back panel by removing the two bolts.

d. Clamp the valve bracket (1) in a vice. *DO NOT CLAMP THE VALVE BODY (8) IN THE VICE.*

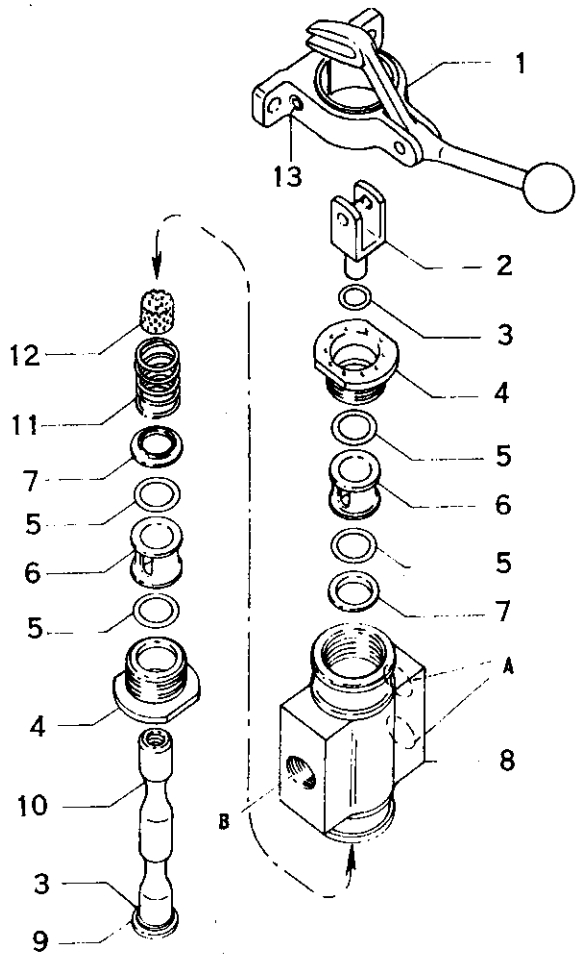
e. With a large broad bladed screwdriver turn the slotted spindle screw (9) at the bottom end in an anticlockwise direction. This should loosen the threaded yoke (2) at the other end. Continue turning until the yoke is free and remove it and its lockwasher (3).

NOTE:- If the slotted spindle screw unscrews, remove it. Then take out the socket screw (13) which clamps the bracket to the body, and remove bracket, yoke, and spindle (10) together. The exhaust bearings (4) can then be removed allowing the valve ports to be pushed out either way.

f. Unscrew the exhaust bearing from the lever end by turning it with a wrench in an anticlockwise direction and slide it off the valve spindle.

g. With a piece of round wood about 3/4 inch diameter, push the spindle out of the body along with all valve components, noting the order of assembly which should be as in fig 27.

h. Clean and examine the cylinder bore which should be perfectly clean, smooth and free from scratches.



1	Bracket	8	Body
2	Yoke and clevis pin	9	Slotted screw
3	Lock washer	10	Spindle
4	Exhaust bearing	11	Spring
5	"O" ring	12	Spacer, centre
6	Spacer	13	Socket screw
7	Pressure washer		

FIG 27 - WINCH CONTROL VALVE (EXPLODED VIEW)

j. Similarly examine the spindle, particularly the larger diameters.

k. Renew all parts which are faulty in any way.

Reassembly

57. Lightly smear all the working parts with ZX-28 grease and reassemble in the reverse order to dismantling, observing the following:-

a. The pressure washers (7) must be assembled with the raised lip towards the "O" rings.

b. The centre spacer (12) locates inside the spring (11).

c. The body (8) has two ports on one side as shown in fig 27 (item A) and one port on the opposite side as indicated by the arrow at B.

d. The valves are supplied with the ports plugged, one of which is shown in fig 27.

e. To ensure that all components are correctly located, it is best to assemble them onto the spindle first, and insert the group into the body, then screw in the exhaust bearings and tighten. Finally assemble the yoke with lockwasher and tighten by turning the spindle with a screwdriver.

ENGINE

58. The engine assembly can be removed and replaced by two men in the manner detailed in table 1, provided the vehicle is modified in accordance with VEH G 557-31.

59. Equipment and tools required for the removal and replacement of the engine are:-

a. Normal vehicle mechanic's tool kit.

b. Recovery vehicle or other suitable lifting device.

c. Trolley engine removal.

d. Bar engine lifting.

NOTE:- Items c. and d. are of local manufacture as laid down in VEH G 574.

TABLE 1 - ENGINE REMOVAL PROCEDURE

Ser	*Man 1*	*Man 2*
1	Lower brush, guard, lift bonnet. Undo radiator cap, open radiator drain cock. Disconnect one battery terminal.	Remove engine hatch and lower panel.
2	Remove front bumper bar and brush guard, and lift off (Man 2 assists).	Remove air intake horn and hose. Disconnect accelerator rod. Disconnect coil, heat switch, oil pressure switch wires. Assist Man 1 in lifting bumper bar.
3	Disconnect horn wire (steering box to horn). Remove front cabin lower cross bar.	Disconnect clutch slave cylinder hose.
4	Remove radiator cowl, disconnect hoses and lines, remove radiator. (Man 2 assists).	Remove gear change tower and clutch slave cylinder complete. Assist Man 1 in lifting radiator.
5	Disconnect three air lines on right side of crossmember and remove top fitting to allow removal of top cross member bolt.	Disconnect exhaust flange. Disconnect generator wires.
6	Disconnect two air lines secured on crossmember and remove small lines. Disconnect large line at reservoir and turn line vertical resting alongside cabin.	Remove all clutch housing bolts.
7	Disconnect accelerator rod at front of engine. Disconnect front engine mounting.	Disconnect starter motor leads. Pick up engine removal trolley.

TABLE 1 (CONTD)

Ser	Man 1	Man 2
8	Assisted by Man 2 install engine removal trolley by removing rollers from one side of trolley, placing trolley in position and replacing the rollers.	Assist Man 1 to install trolley.
9	Remove front crossmember.	Position recovery vehicle or lifting gear. Support gear box. Open new engine crate and install lifting bar on new engine.
10	Place old engine mounting in outer chassis hole to act as stop for trolley. Assist Man 2 in lifting new engine out of crate.	Assisted by Man 1 lift new engine out of crate.
11	Draw out engine and trolley to the stop and remove compressor, pass compressor to Man 2.	Remove lifting bar from new engine and pass to Man 1. Install air cleaner etc on new engine and carry out instructions detailed in packing note.
12	Install lifting bar on old engine, remove air cleaner etc. Assemble clutch on new engine. Assisted by Man 2 lift old engine out of vehicle and place in crate.	Install compressor on new engine. Assist Man 1 in lifting old engine out of vehicle into crate.
13	Crate old engine.	Remove lifting bar from old engine and install on new one. Fill new engine with oil as detailed in packing note.
14	Assisted by Man 2 lift new engine in vehicle onto trolley. Align engine and slide in place. Align by measuring gap at top and bottom of housing. When gaps are equal slide into place.	Assist Man 1 in lifting new engine in vehicle.
15	Remove trolley stop. Replace front crossmember.	Remove recovery vehicle or lifting gear. Remove engine lifting bar. Remove gear box support.
16	Replace front engine mounting (do not tighten). Replace two air lines secured on crossmember (one large, one small).	Replace clutch housing bolts except small bolts at bottom of housing.
17	Replace air fitting and three lines on right side of crossmember.	Replace gear change tower and clutch slave cylinder complete.
18	Connect accelerator rod at front of engine. Bleed clutch slave cylinder.	Connect slave cylinder hose. Bleed clutch slave cylinder.
19	Assisted by Man 2 lift in radiator, connect all hoses and lines, replace radiator cowl.	Assist Man 1 to lift in radiator. Replace coil, oil switch, heat switch wires. Replace fuel line and accelerator rod. Replace air intake hose and trunk.
20	Assisted by Man 2 remove trolley.	Assist Man 1 in removing trolley.
21	Assist Man 2 in replacing exhaust flange. Tighten front engine mounting bolts. Close cocks and fill radiator.	Assisted by Man 1 replace exhaust flange.

TABLE 1 (CONTD)

Ser	*Man 1*	*Man 2*
22	Replace front cabin lower cross bar. Connect horn wire.	Replace clutch housing lower bolts. Connect starter and generator wires.
23	Assisted by Man 2 replace front bumper bar.	Assist Man 1 in replacing bumper bar.
24	Check for leaks etc.	Final check of all connections before starting engine. Connect battery terminal.
25	Check for leaks etc.	Start engine, warm up. Check for leaks etc.
26	Drain engine oil and remove oil filter body.	Stop engine. Replace lower engine panel.
27	Replace sump plug and oil filter complete with element.	Fill sump with OMD-110.
28	Lower bonnet. Lift brush guard and secure.	Start engine, final adjustment if required. Replace engine hatch.

TRANSFER CASE

Gear Change Lock

NOTE:- The repair procedure detailed in the following paragraphs applies to transfer cases modified in accordance with VEH G 557-32.

60. If high ratio front wheel drive will not engage when the control trigger is operated, proceed as follows:-

a. Disconnect the air line at the gear change lock assembly (item B, fig 28).

b. Operate the control trigger to determine if air is supplied to the gear change lock assembly. If not check air line for kinks or other restriction.

c. If the air supply to the lock assembly is in order, replace the lock assembly.

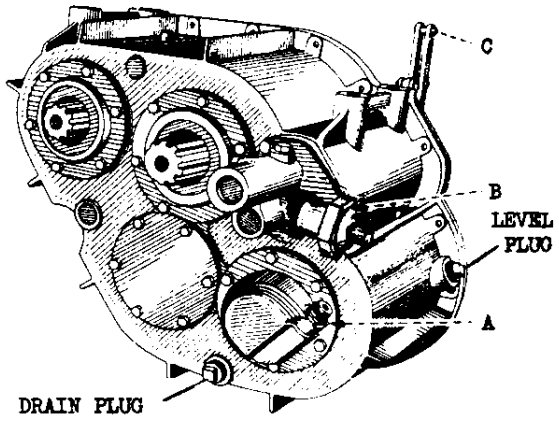


FIG 28 - TRANSFER CASE, OUTPUT SIDE

61. *Removal.*

a. Disconnect the air line.

b. Screw the lock assembly out.

62. *Installation.*

a. Using the two shims(0·010 inch and 0·025 inch thick) from the old lock assembly, screw the new lock assembly into place and tighten securely.

b. Connect and tighten the air line to the lock assembly and check operation.

NOTE:- If the air inlet connection is inaccessible when the assembly is tightened, an accessible location to permit the air hose to be connected to it, may be achieved by discarding one or both of the shims. (The combined thickness of the two shims is equivalent to one half turn of the lock assembly).

Removal and Installation of Transfer Case

63. *Removal.*

a. Remove the clevis pin (item C, fig 28) and disconnect the control rod.

b. Disconnect the air line at the gear change lock assembly (item B, fig 28).

c. Remove the bolts from each of the four drive shaft universal joint flanges at the transfer case end, and tie the shafts up out of the way.

d. Disconnect the speedometer drive cable from the speedometer drive pinion sleeve (item A, fig 28) located at the rear end of the forward drive shaft.

e. Loosen the stay rod nuts at the upper ends of the rods to relieve tension on the lower bolt which secures the stay rods to the transfer case bracket (item 15, fig 29).

f. Remove the 5/8 x 1 1/2 inch bolt (item 16, fig 29) from the lower end of the stay rods.

g. Place a suitable floor jack or transmission cradle jack, under the transfer case and jack up to take the weight of the transfer case.

h. Remove four 3/4 inch screws (items 17 and 18, fig 29) (two - 1 1/4 inch long and two - 3 3/4 inch long) which secure the transfer case to the crossmember.

j. Lower the transfer case out.

NOTE:- Each of the long 3/4 inch bolts has a spacer sleeve between the transfer case and the crossmember.

64. *Installation.*

a. Check to see that crossmember is in good condition. If cracked, repair or replace it. If rusty, remove rust and repaint.

b. Lift the transfer case up into position and start the two short mounting screws to line up the bolt holes.

c. Place the two spacer sleeves in position and screw in the two long mounting screws.

d. Tighten the four mounting bolts (items 17 and 18) to 150 to 175 ft lb torque.

e. Install and tighten the stay rod bolt (item 16) to 135 to 150 ft lb torque.

f. Ensure that retainers (item 8) are properly seated in brackets (item 7), then tighten up the nuts (item 4) until all slack is taken out of the rubbers (item 8), then tighten the nuts one further turn.

g. Tighten the lock nuts (item 3) finally locking the nuts together, without removing the plain nuts (item 4).

h. Connect the speedometer cable.

j. Connect the control rod and secure the clevis pin with a split cotter pin.

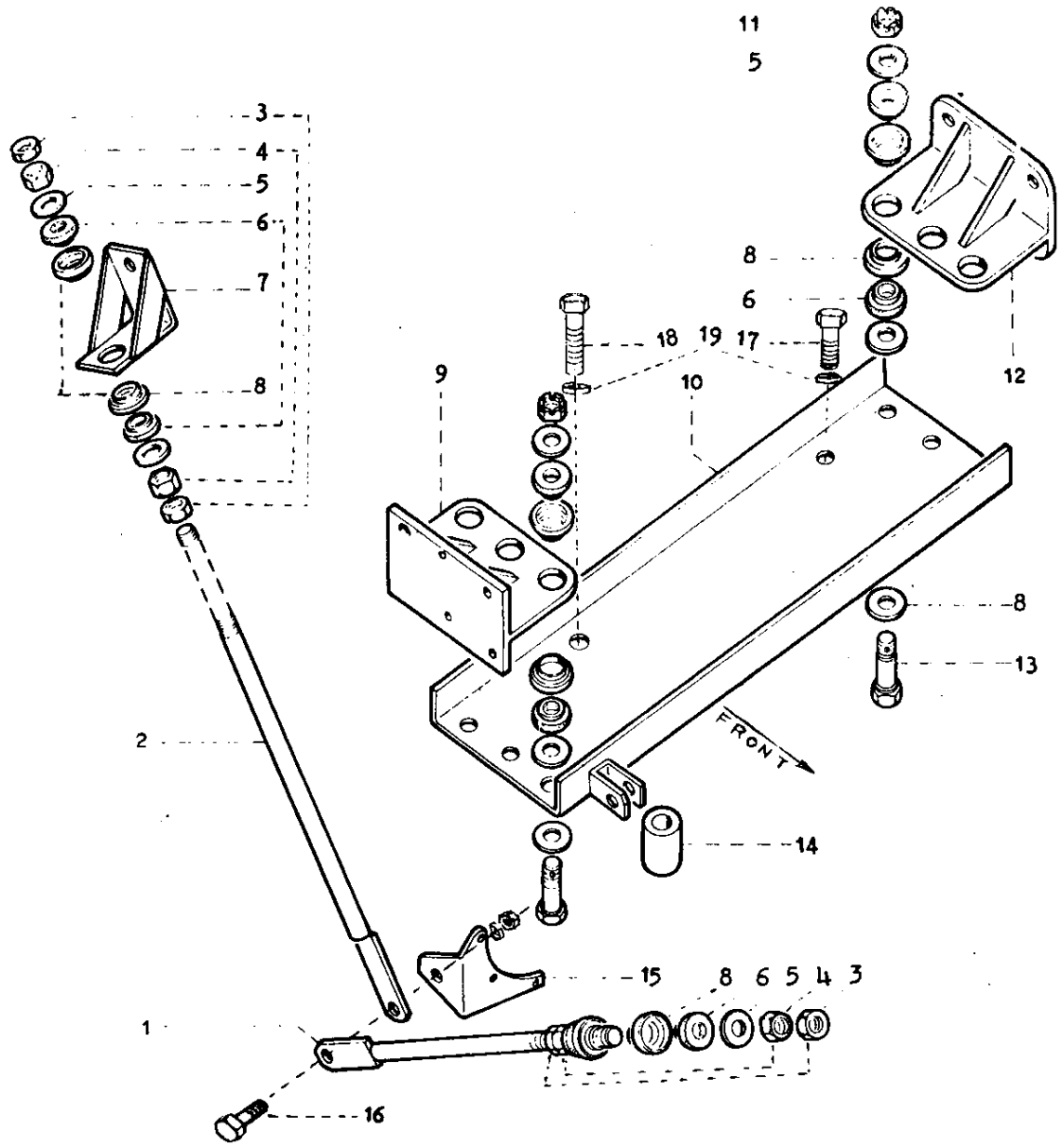
k. Connect up the propeller shafts and winch drive shaft and tighten the flange bolts evenly to 40 to 44 ft lb.

l. Connect air line to the gear change lock assembly.

m. Check oil level in the transfer case to the level plug (see fig 28).

n. Check all bolts to the correct torque loads (in ft lb) as follows:-

(1) 3/8 bolts: 24
(2) 5/16 bolts: 16
(3) 1/4 bolts: 8 to 10
(4) Stay rod bolt: 135 to 150
(5) Case to crossmember mounting bolts: 150 to 175
(6) Universal joint bolts: 40 to 44
(7) PTO ballcrank bolt: 33 to 37
(8) Control lever shaft nut: 80 to 90
(9) Stay rod bracket bolt to siderail: 28 to 31.



1 Rod stay front
2 Rod stay rear
3 Nut 5/8 UNF
4 Nut 5/8 UNF
5 Washer flat
6 Bushing rubber
7 Bracket stay rod rear
8 Retainer - rubber - mounting
9 Bracket frame RH
10 Crossmember
11 Nut slotted 5/8 UNF
12 Bracket frame LH
13 Bolt 5/8 UNF 2 3/4 inch
14 Spacer sleeve
15 Bracket transfer case
16 Bolt 5/8 UNF 1 1/2 inch
17 Screw 3/4 UNF 1 1/4 inch
18 Screw 3/4 UNF 3 3/4 inch
19 Washer spring 3/4 inch

FIG 29 - MOUNTING, TRANSFER CASE

STEERING GEAR

Removal and Installation

65. *Removal.*

a. Disconnect the horn cable at the connector below the steering gear.

b. Remove the horn button (item 2, fig 30) by pressing on it with the palm of the hand and turning it to right or left until it can be lifted out.

c. Lift out items 3, 4 and 5 (fig 30).

d. Pull out the cable along with item 6 (fig 30).

e. Remove three slotted screws (item 7) and remove (item 8) base plate, along with the contact (item 9, fig 30).

f. Remove steering wheel nut (item 10, fig 30).

g. Remove the steering wheel, using, if necessary, a suitable puller.

h. Disconnect and tape up the five cables at the connectors located below the instrument panel (fig 31). Untape the sixth cable (colored red, and not used) and tape the six cables together as shown in fig 32.

j. Remove the two bolts which clamp the steering column to the bracket on the instrument panel, and remove the clamp.

k. Disconnect the steering drag link from the pitman arm.

l. Remove the pitman arm nut (item 15), washer (item 14) and pitman arm (item 13) (fig 33).

m. Remove one bolt (item A) and two capscrews (item B) (fig 33) which attach the steering box to its mounting bracket.

n. Remove the toe boards to permit the steering column to pass through.

o. The steering gear and column assembly can then be taken out from below.

66. *Installation.* Installation is made in the reverse order to removal but some points require particular attention as follows:-

a. Correct alignment of the column is extremely important and is to be ensured as follows:-

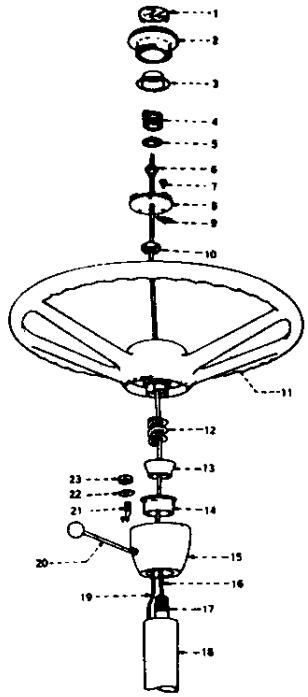
(1) Assemble and lightly tighten the mounting bolts A and B (fig 33) leaving them just loose enough to permit the column to be raised into the column clamp top half without strain.

NOTE: - The column must centralize in the column clamp.

(2) Assemble the lower half of the column clamp and tighten the two clamp bolts.

(3) Tighten the three mounting bolts, items A and B (fig 33).

b. Reassemble the pitman arm so that the location marks line up as shown in fig 34. Reassemble the lock washer and lever shaft nut, and tighten to 145 to 155 ft lb torque.



1 Insert, horn button
2 Button, horn assembly
3 Cup, contact
4 Spring, horn button, contact
5 Cap, horn cable contact
6 Ferrule, horn cable, insulating
7 Screw, rd-hd, slotted
8 Plate, base, horn button
9 Contact, horn button
10 Nut, wheel
11 Wheel, steering
12 Spring, bearing spacer
13 Retainer, spring
14 Bearing, jacket tube, upper
15 Flange, with bearing assembly
16 Cable, horn assembly
17 Cam, with tube and wheel nut assembly
18 Tube, jacket, assembly
19 Cable, turn signal switch and wiring
20 Lever, turn signal
21 Bolt, clamp
22 Washer, plain
23 Nut, lock

FIG 30 - STEERING WHEEL MOUNTING

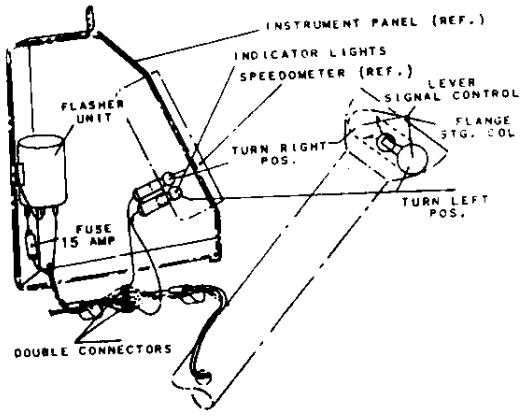


FIG 31 - TURN SIGNAL CONTROL

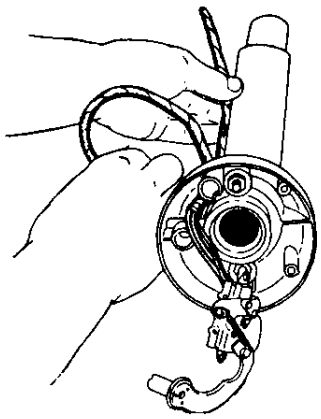


FIG 32 - REMOVAL OR ASSEMBLY OF CABLES

c. Assemble the steering wheel so that its spokes are towards 10 and 2 o'clock when the front wheels are steering straight ahead. Tighten the nut to 55 to 56 ft lb.

d. Untape the six cables and retape the red cable to insulate it. Connect the five other cables to their appropriate connectors as follows:-

(1) Black to flasher unit.

(2) Blue to circuit 116 and 461.

(3) White to 114 and 460.

(4) Green to 117.

(5) Brown to 115.

Testing for Cam Wear

67. Before dismantling the steering gear, reinstall the steering wheel temporarily, and carry out the adjustment of the lever shaft to nil end play without binding (see Unit Repair VEH G 553) and test for cam wear as follows:-

a. Turn steering to full lock, then counting the turns, turn the wheel to the other lock.

b. Turn the wheel back half way. At this point a slightly tight spot should be felt when the wheel is turned through mid position. If no tight spot is detectable, wear on the cam (item 21, fig 33) is indicated and this should be replaced.

Dismantling

68. a. Remove the steering wheel.

b. Loosen the column tube clamp bolt (item 26, fig 33) and remove the column tube (item 25).

c. Remove six capscrews and lock washers (items 3 and 4, fig 33), remove the side cover as shown in fig 35.

d. Withdraw the lever shaft assembly.

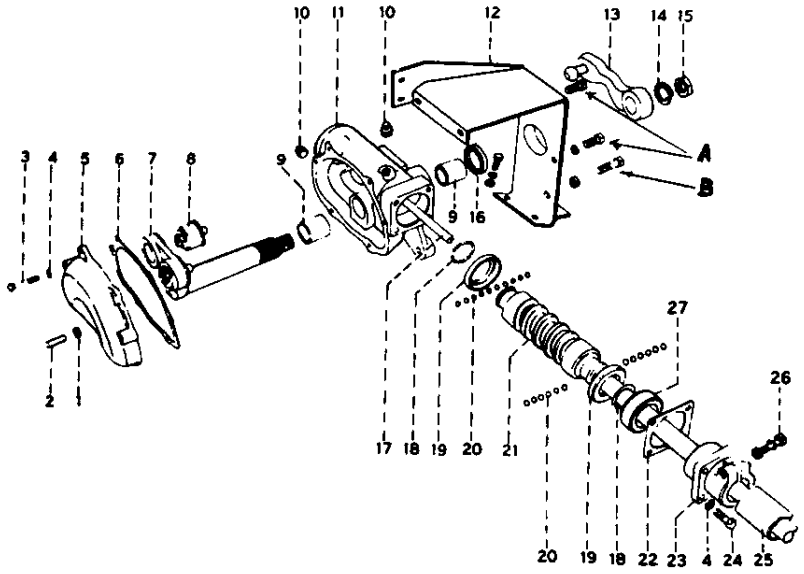
e. Remove four capscrews (item 24) and lock washers and lift off the upper cover (item 23) and shims (item 22, fig 33) as shown in Unit Repair VEH G 553.

f. Remove the cam and tube as shown in fig 36.

g. Remove the oil seal (item 16, fig 30).

h. Remove the two studs and bearings from the lever shaft.

j. Clean all parts in solvent.



1 Nut, side cover, adjusting screw
2 Screw, adjusting, side cover
3 Bolt, hex-hd
4 Washer, lock
5 Cover, gear housing, with adjust screw and nut
6 Gasket, side cover
7 Lever shaft, w/studs, nut and lock washer
8 Stud, set, w/bearings assembly (matched set)
9 Bushing, housing
10 Plug, pipe sq-hd
11 Housing, w/bushing, seal and end cover, assembly
12 Bracket, mounting, steering gear
13 Arm, steering, w/ball
14 Washer, lock
15 Nut, lever shaft
16 Seal, oil
17 Cover, housing end, w/tube assembly
18 Ring, snap
19 Bearing, cup
20 Ball, steel
21 Cam, with tube, assembly w/cup bearing, ball and snap ring
22 Shim, housing cover upper
23 Cover, gear housing, upper, w/bolt, nut and lock washer
24 Bolt, hex-hd
25 Column, steering assembly
26 Bolt, hex-hd
27 Spacer

FIG 33 - STEERING GEAR

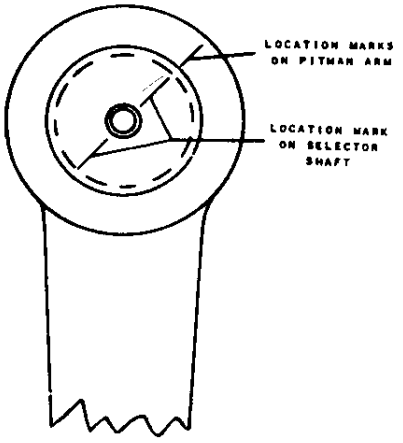


FIG 34 - PITMAN ARM TO LEVER SHAFT ASSEMBLY MARKS

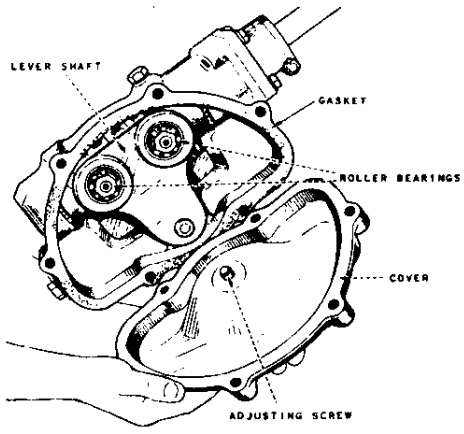


FIG 35 - REMOVAL OF HOUSING SIDEGEAR COVER

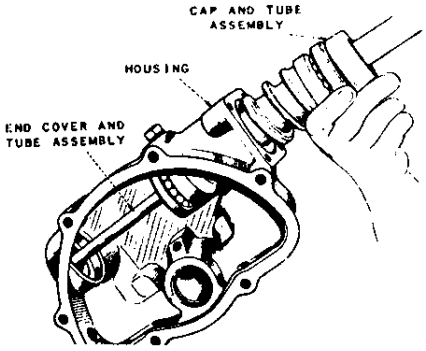


FIG 36 - REMOVING CAM AND TUBE ASSEMBLY WITH BEARING

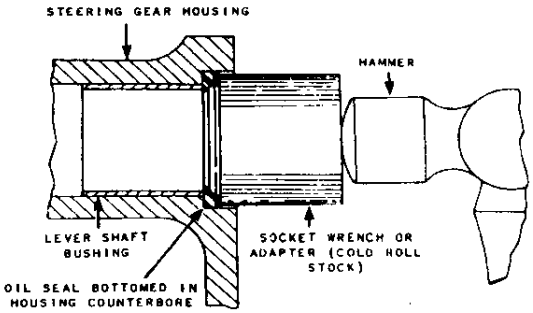


FIG 37 - LOCATION AND INSTALLATION OF LEVER SHAFT OIL SEAL

Inspection and Assembly

69. *Examination of Parts.*

a. Housing and covers are to be checked for the following:-

(1) Cracks in the casting.

(2) Machined faces flat and smooth. Remove any remaining gasket material. Minor damage or burrs on these faces can be removed by rubbing over emery cloth placed on a surface plate.

(3) Condition of threads in bolt holes.

(4) Lever shaft bushings for wear.

b. Cam and tube assembly is to be checked as follows:-

(1) If wear was indicated by test (para 67), use new part.

(2) If not worn, examine the cam grooves for scoring or brinelling.

(3) Examine the bearing races at each end of the cam for wear, pitting or brinelling. Discard the cam if such faults are found.

(4) Examine the tube for deep scratches, nicks or other faults.

c. Ball bearings are to be examined for wear, pitting, and brinelling in balls and races.

d. Lever shaft and studs are to be checked for the following:-

(1) Wear of shaft bearing surfaces.

(2) Twisted or worn splines.

(3) Wear of the tapered portion of the studs. (Flats worn on the tapers indicate non-rotation in the roller bearing). Disassemble the roller bearings and examine for wear.

70. *Assembly.*

a. Install new lever shaft oil seal (fig 37). Position oil seal in housing with side stamped "Fluid Side" toward bottom of counterbore. Using a hammer, tap lightly on the end of a socket wrench or adaptor (cold rolled stock having a slightly smaller outside diameter than the oil seal) so that the seal bottoms in the counterbore of housing.

b. Place cam and tube assembly with bearings in the housing (fig 36).

c. Assemble housing upper cover with shims and make bearing adjustments described in Unit Repair VEH G 553.

d. Install lever shaft in housing and assemble housing side cover with new gasket, first loosening the adjusting screw (fig 35). Draw side cover screws tight.

e. Adjust lever shaft stud in cam groove for backlash and lock adjustment with lock nut, as described in Unit Repair.

f. Assemble jacket tube with clamp collar and tighten clamp.

71. *Roller Stud Assemblies.* The following is important regarding roller stud assemblies:-

a. They are supplied in matched sets and must be used in sets.

b. They can be pressed into the lever shaft as assembled if they are perfectly clean and lubricated. Press in flush.

c. The torque pre-load on the stud rollers is 2 1/2 to 3 1/2 inch pounds, which can be checked by using an inch pound tension wrench and wrench socket on the stud nut.

d. To adjust the pre-load, remove the outer nut and lock washer and tighten or loosen the inner nut until correct pre-load is obtained. Readings must be taken after the lock washer and outer nut have been reassembled and tightened.

NOTE:- Take readings while the stud is being turned.

TRANSMISSION

Replacement of Gaskets

NOTE:- Replacement of seals and gaskets may be effected without removing transmission case from vehicle.

72. To replace PTO-to-transmission case gasket (item 67 fig 38):-

a. Drain transmission.

b. Remove capscrews and cover, PTO opening.

c. Replace gasket, replace cover, PTO opening. Install and tighten capscrews to 15 to 30 ft lb torque.

d. Refill transmission.

73. To replace mainshaft rear bearing retainer gasket (item 72, fig 38) or mainshaft oil seal (item 71, fig 38):-

a. Drain transmission.

b. Remove propeller shaft transmission to transfer case.

c. Remove capscrews.

d. Remove mainshaft rear bearing retainer (item 69, fig 38).

e. Replace gasket (item 72, fig 38) and/or oil seal (item 71, fig 38).

f. Replace retainer, replace and tighten capscrews to 35 to 40 ft lb torque.

g. Refill transmission.

Removal and Installation of Transmission

74. To remove the transmission from vehicle:-

a. Remove shift tower by removing (refer fig 39):-
   (1) Rod assembly (item 9).
   (2) Items 10 to 18.
   (3) Housing assembly (item 19).
   (4) Lever control (item 26).

b. Remove propeller shafts:-
   (1) Transmission to transfer case.
   (2) Transfer case to front axle.

c. Remove spare wheel.

1. HOUSING, SHIFT BAR
2. CUP, SHIFT BAR DUST
3. BALL, 1/2 SHIFT BAR POPPET
4. SPRING, POPPET BALL
5. BAR, SECOND AND THIRD SPEED SHIFT
6. BAR, FOURTH AND DRIVE SPEED SHIFT
7. CUP, SHIFT BAR DUST
8. BALL, 3/4, SHIFT BAR INTERLOCK
9. PIN, SHIFT BAR INTERLOCK PLUNGER
10. BAR, FIRST AND REVERSE SPEED SHIFT
11. BLOCK, FIRST AND REVERSE SHIFT
12. SCREW, SHIFT BLOCK AND SHIFT FORK SET
13. BEARING, MAINSHAFT PILOT, ASSY.
14. FORK, FOURTH AND DRIVE SPEED SHIFT
15. FORK, SECOND AND THIRD SPEED SHIFT
16. FORK, FIRST AND REVERSE SPEED SHIFT
17. MAINSHAFT
18. SLINGER, OIL, MAINSHAFT BEARING
19. SPACER/GEAR
20. WASHER, MAINSHAFT BEARING
21. BEARING, MAINSHAFT REAR
22. GEAR, MAINSHAFT, FIRST SPEED SLIDING
23. RING, SNAP, MAINSHAFT SECOND SPEED GEAR
24. WASHER, THRUST
25. GEAR, MAINSHAFT SECOND SPEED
26. RING, W/PINS, SYNCHRONIZER UNIT INNER REAR
27. SPRING, SLIDING CLUTCH
28. PIN, SPRING
29. CLUTCH, SLIDING, W/PINS AND SPRINGS
30. RING, W/PINS, SYNCHRONIZER UNIT INNER FORWARD
31. RING, SYNCHRONIZER UNIT OUTER STOP
32. GEAR, MAINSHAFT THIRD SPEED
33. WASHER, THRUST, THIRD SPEED GEAR
34. RING, SNAP, EXTERNAL
35. GEAR, MAINSHAFT FOURTH SPEED
36. RING, OUTER STOP
37. SYNCHRONIZER, FRONT ASSY.
38. GEAR, MAINSHAFT CLUTCH
39. RING, SNAP MAINSHAFT
40. BEARING, COUNTERSHAFT FRONT
41. WASHER, COUNTERSHAFT FRONT BEARING
42. RING, SNAP, COUNTERSHAFT GEAR
43. GEAR, COUNTERSHAFT DRIVE
44. SPACER, COUNTERSHAFT GEAR
45. GEAR, COUNTERSHAFT FOURTH SPEED
46. GEAR, COUNTERSHAFT THIRD SPEED
47. KEY, WOODRUFF
48. COUNTERSHAFT
49. BEARING, COUNTERSHAFT REAR
50. NUT, COUNTERSHAFT REAR BEARING
51. BEARING, REVERSE IDLER GEAR
52. GEAR, REVERSE IDLER
53. SPACER, REVERSE IDLER GEAR BEARING
54. LOCK, REVERSE IDLER GEAR SHAFT
55. SHAFT, REVERSE IDLER GEAR
56. GEAR, MAIN DRIVE
57. BEARING, MAIN DRIVE GEAR
58. NUT, MAIN DRIVE GEAR BEARING
59. SEAL, OIL BEARING RETAINER
60. GASKET, BEARING RETAINER
61. RETAINER, W/SEAL, MAIN GEAR BEARING
62. RING, SNAP, EXPANSION PLUG
63. PLUG, EXPANSION, COUNTERSHAFT FRONT BEARING
64. CASE, W/PLUG, TRANSMISSION
65. PLUG, FILTER
66. COVER, P.T.O. OPENING
67. GASKET, P.T.O. OPENING
68. PLUG, PIPE, DRAIN
69. COVER, W/SEAL AND BUSHING, MAINSHAFT REAR BEARING
70. PLUG, SPEEDOMETER OPENING
71. SEAL, MAINSHAFT OIL, ASSY.
72. GASKET, MAINSHAFT REAR BEARING COVER
73. PLUG, PIPE SLOTTED
74. GASKET, SHIFT BAR HOUSING MOUNTING
75. NUT, COMPANION FLANGE
76. WASHER, COMPANION FLANGE NUT

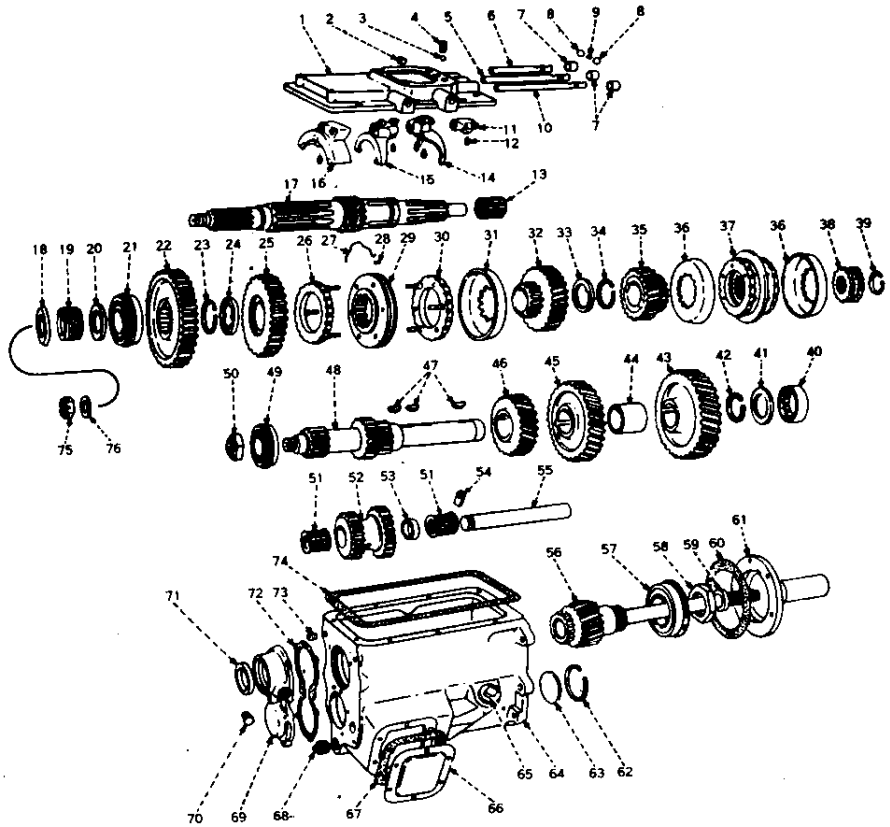


FIG 38 - TRANSMISSION (EXPLODED VIEW)

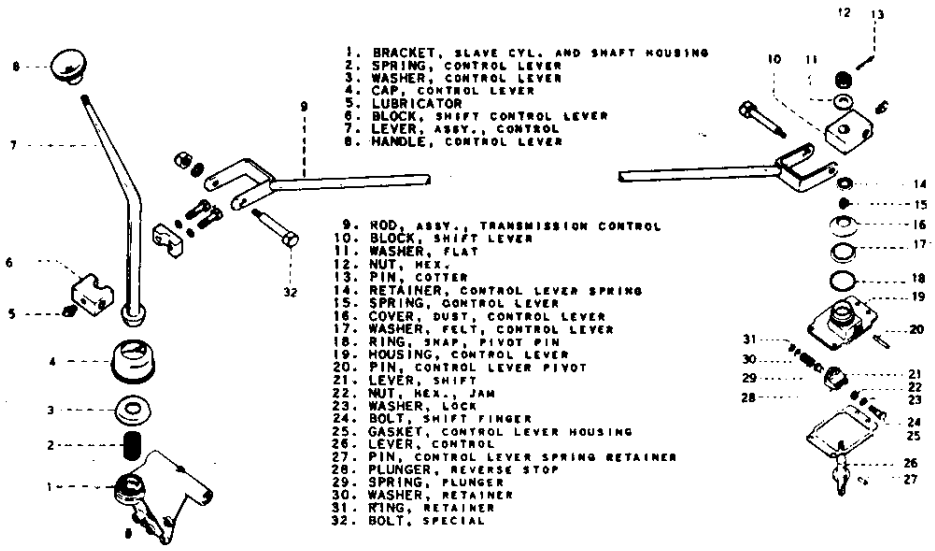


FIG 39 - CONTROL LEVER, SHIFT LEVER AND HOUSING

d. Support transmission case with trolley jack and remove six nuts and lockwashers securing transmission case to clutch housing.

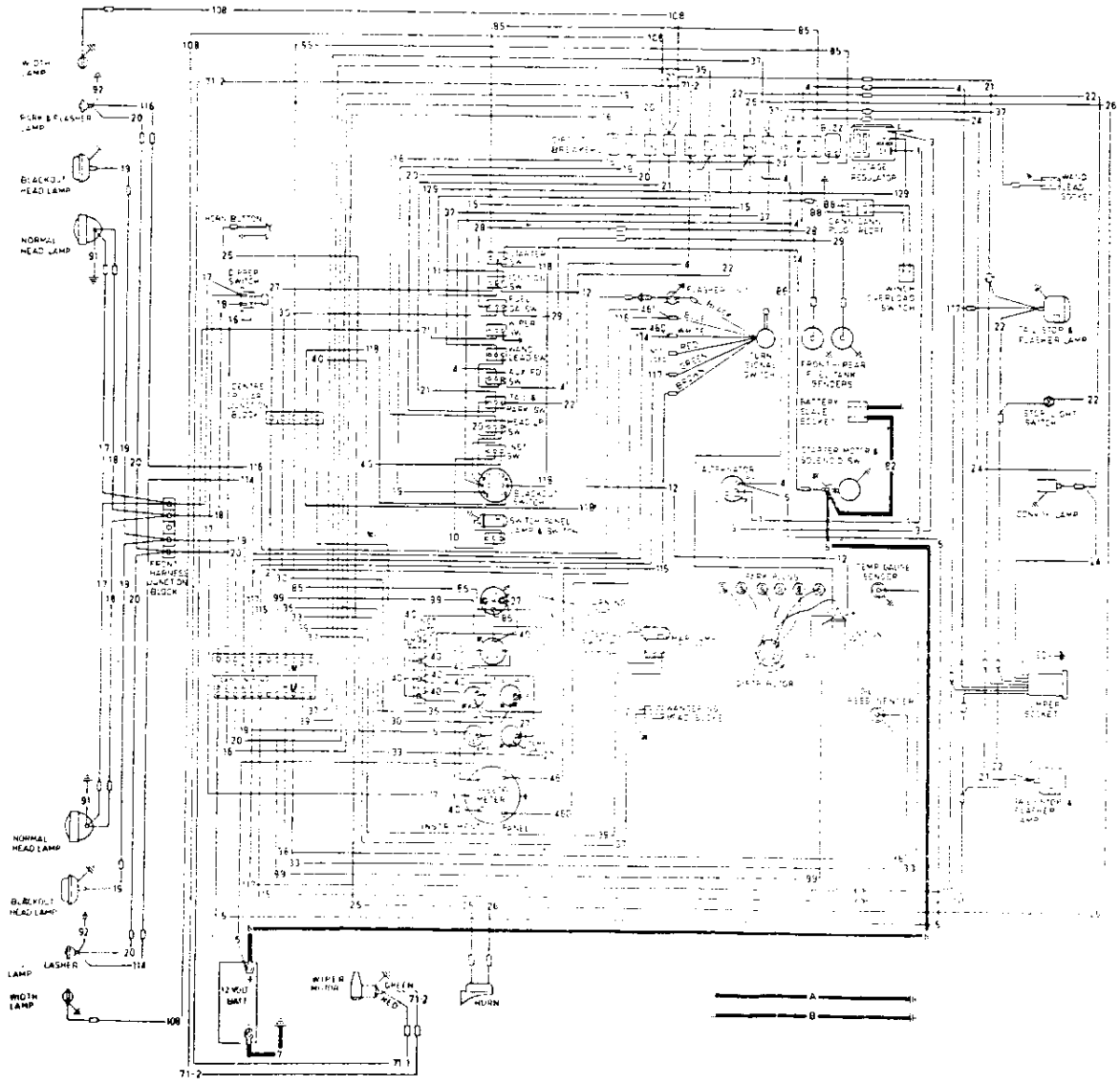
NOTE:- When removing transmission for the purpose of gaining access to the clutch, or for any other reason, extreme care should be taken to support the weight of the transmission until it is completely removed so that the main shaft splines will clear the driven member. If the weight is not supported there is a possibility of distorting the driven member which will not permit free release of the clutch.

e. Lower and remove transmission case.

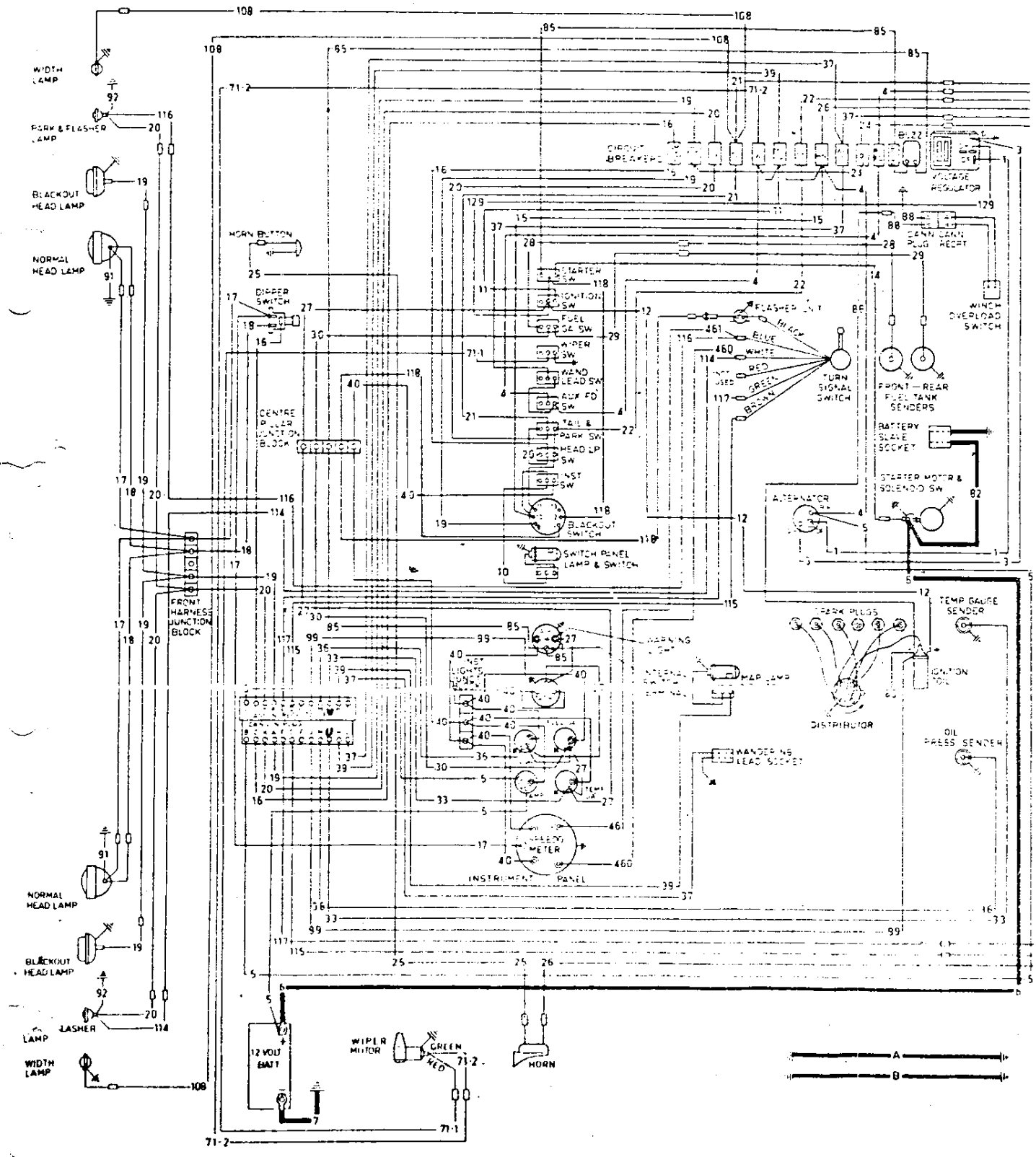
75. Installation of the transmission is to be done in reverse order to removal from the vehicle.

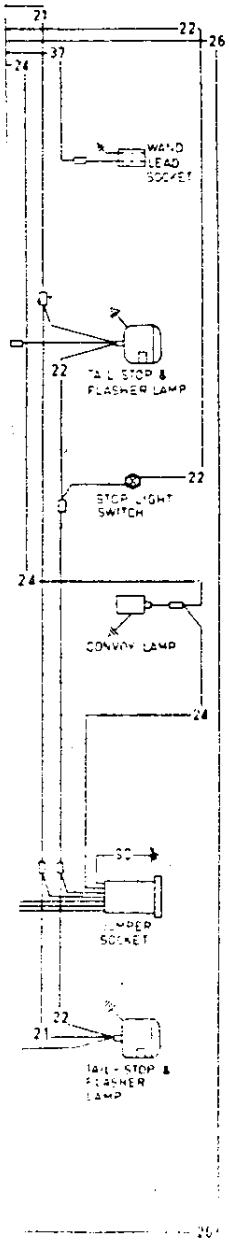
ELECTRICAL

76. Wiring layout diagrams are given in figs 40, 41, and 42 for reference purposes. See VEH G 553 for full schematic wiring diagram.



CIRC. NO.	CABLE GAUGE	DESCRIPTION
1	16	ALTERNATOR FIELD
3	16	ALTERNATOR GROUND
4	0 TO 16	MAIN FEED CIRCUIT
5	10	CHARGE CIRCUIT
6	2	STARTER MOTOR FEED
7	2	BATTERY GROUND
10	16	SWITCH PANEL LAMP FEED
11	12	IGNITION SWITCH FEED
12	16	IGNITION COIL FEED
14	16	STARTER SOLENOID FEED
15	12	NORMAL AND BLACKOUT LAMPS SWITCH FEED
16	14	DIPPER SWITCH FEED
17	14 TO 18	HIGH BEAM AND INDICATOR FEED
18	14 & 16	LOW BEAM FEED
19	16	BLACKOUT HEAD LAMP FEED
20	16	PARK LAMP FEED
21	16	TAIL LAMP FEED
22	16	STOP LIGHT FEED
24	16	CONVOY LAMP FEED
25	16	HORN BUTTON TO HORN
26	16	HORN FEED
27	16	INSTRUMENT FEED
28	18	FRONT FUEL TANK SENDER TO SWITCH
29	18	REAR TANK SENDER TO SWITCH
30	18	SWITCH TO FUEL GAUGE
33	18	TEMP. GAUGE SENDER FEED
36	18	OIL PRESS. GAUGE SENDER FEED
37	14	WANDERING LEAD FEED - FRONT AND REAR
39	16	MAP LAMP FEED
40	18	INSTRUMENT LIGHTS FEED
89	16	TACHOMETER TO IGNITION COIL
71	16	WINDSCREEN WIPER CIRCUIT
99	16	IGNITION COIL DISTRIBUTOR
82	2	STARTER MOTOR TO SLAVE SOCKET
45	16	LOW AIR PRESS. BUZZER & WARNING LIGHT CIRC.
88		LIGHT IN COIL TO WINCH SWITCH VIA CANN PLUG
40	14	JUMPER SOCKET GROUND
91	16	NORMAL HEADLAMP GROUND
92	16	PARK & FLASHER LAMP GROUND
115	18	ALL LAMPS FEED - FRONT AND REAR
114	16	DIRECTIONAL TURN SIGNAL - LEFT - FRONT
115	16	DIRECTIONAL TURN SIGNAL - LEFT - REAR
116	16	DIRECTIONAL TURN SIGNAL - RIGHT - FRONT
117	16	DIRECTIONAL TURN SIGNAL - RIGHT - REAR
119	16	DIRECTIONAL TURN SIGNAL SWITCH FEED
129	16	[illegible] REGULATOR FEED
[illegible]	16	DIRECTIONAL TURN SIGNAL INDICATOR - LEFT
121	18	DIRECTIONAL TURN SIGNAL INDICATOR - RIGHT
-	16	[illegible] GROUND
-	18	[illegible] GROUND


WIDTH LAMP
PARK & FLASHER LAMP
BLACKOUT HEAD LAMP
NORMAL HEAD LAMP
HORN BUTTON
DIPPER SWITCH
CENTRE FUSE JUNCTION BLOCK
FRONT HARNESS JUNCTION BLOCK
STARTER SW
IGNITION SW
FUEL PRESS SW
WIPER SW
WAND LEAD SW
AUX FD SW
TAIL & PARK SW
HEAD LP SW
HST SW
BLACKOUT SWITCH
SWITCH PANEL LAMP & SWITCH
CIRCUIT BREAKERS
VOLTAGE REGULATOR
SENN SENN PLUG RECPT
WINCH OVERLOAD SWITCH
FLASHER UNIT
TURN SIGNAL SWITCH
FRONT — REAR FUEL TANK SENDERS
BATTERY EARTH SOCKET
STARTER MOTOR & SOLENOID SW
ALTERNATOR
SPARK PLUGS
DISTRIBUTOR
IGNITION COIL
TEMP GAUGE SENDER
OIL PRESS SENDER
MAP LAMP
WARNING LAMP
INSTRUMENT PANEL
SPEEDO METER
TEMP
WANDERING LEAD SOCKET
WIPER MOTOR
HORN
12 VOLT BATT
FLASHER LAMP
WIDTH LAMP
BLUE
WHITE
RED
GREEN
BROWN
NOT USED
IN BOX
A
B



CIRC. NO.	CABLE GAUGE	DESCRIPTION
1	16	ALTERNATOR FIELD
3	16	ALTERNATOR GROUND
4	10 TO 16	MAIN FEED CIRCUIT
5	10	CHARGE CIRCUIT
6	2	STARTER MOTOR FEED
7	2	BATTERY GROUND
10	16	SWITCH PANEL LAMP FEED
11	12	IGNITION SWITCH FEED
12	16	IGNITION COIL FEED
14	16	STARTER SOLENOID FEED
15	12	NORMAL AND BLACKOUT LAMPS SWITCH FEED
16	14	DIPPER SWITCH FEED
17	14 TO 18	HIGH BEAM AND INDICATOR FEED
18	14 & 16	LOW BEAM FEED
19	16	BLACKOUT HEAD LAMP FEED
20	16	PARK LAMP FEED
21	16	TAIL LAMP FEED
22	16	STOP LIGHT FEED
24	16	CONVOY LAMP FEED
25	16	HORN BUTTON TO HORN
26	16	HORN FEED
27	16	INSTRUMENT FEED
28	18	FRONT FUEL TANK SENDER TO SWITCH
29	18	REAR TANK SENDER TO SWITCH
30	18	SWITCH TO FUEL GAUGE
33	18	TEMP. GAUGE SENDER FEED
36	18	OIL PRESS. GAUGE SENDER FEED
37	14	WANDERING LEAD FEED - FRONT AND REAR
39	16	MAP LAMP FEED
40	18	INSTRUMENT LIGHTS FEED
99	16	TACHOMETER TO IGNITION COIL
71	16	WINDSHIELD WIPER CIRCUIT
80	16	IGNITION COIL DISTRIBUTOR
82	2	STARTER MOTOR TO SLAVE SOCKET
85	16	LOW AIR PRESS. BUZZER & WARNING LIGHT CIRC.
88		IGNITION COIL TO WINCH SWITCH VIA CANN PLUG
90	14	JUMPER SOCKET GROUND
91	16	NORMAL HEADLAMP GROUND
92	16	PARK & FLASHER LAMP GROUND
108	18	WIDTH LAMPS FEED - FRONT AND REAR
114	16	DIRECTIONAL TURN SIGNAL - LEFT - FRONT
115	16	DIRECTIONAL TURN SIGNAL - LEFT - REAR
116	16	DIRECTIONAL TURN SIGNAL - RIGHT - FRONT
117	16	DIRECTIONAL TURN SIGNAL - RIGHT - REAR
118	16	DIRECTIONAL TURN SIGNAL SWITCH FEED
129	16	VOLTAGE REGULATOR FEED
450	18	DIRECTIONAL TURN SIGNAL INDICATOR - LEFT
451	18	DIRECTIONAL TURN SIGNAL INDICATOR - RIGHT
A	3	CAB TO CHASSIS GROUND
B	3	ENGINE TO CHASSIS GROUND

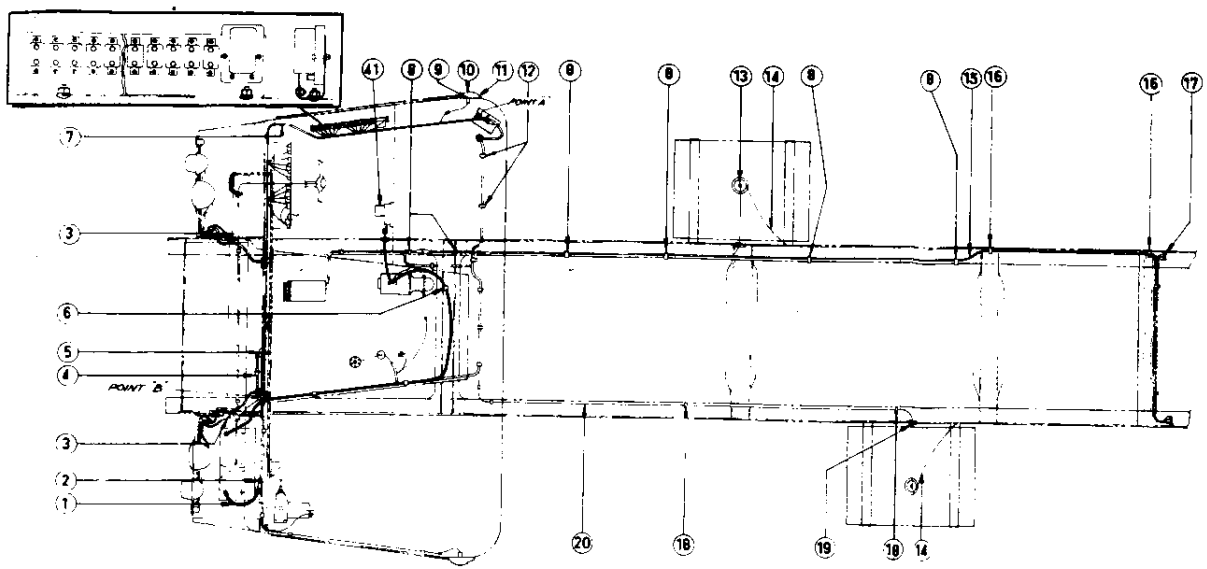


FIG 40 - WIRING LAYOUT DIAGRAM (PLAN VIEW)

LEGEND TO FIGS 40, 41 AND 42

1. CABLE ASSY., GROUND
2. WASHER, LOCK
3. WASHER, LOCK
4. SCREW
5. GROMMET
6. CLIP, CABLE
7. CANNON PLUG AND HARNESS, ASSY
8. CLIP
9. LAMP
10. LIGHT, ASSY. - FRONT WIDTH
11. SEAL - WIDTH LIGHT
12. CLIP
13. NUT
14. CABLE, ASSY. - FUEL TANK GROUND
15. HARNESS, REAR END
16. CLIP, CLOSED
17. CONNECTOR, DOUBLE
18. CLIP
19. GROMMET
20. CABLE, ASSY. CONNECTOR TO LEFT HAND TANK
21. CABLE, ASSY. STARTER TO SLAVE SOCKET
22. GROMMET
23. CABLE, ASSY, WITH SOCKET
24. LAMP
25. GROMMET
26. CABLE, ASSY. - WIPER SWITCH EARTH
27. CABLE, ASSY. - BLACKOUT SWITCH TO HEADLIGHT SWITCH
28. BLOCK, JUNCTION
29. SCREW
30. GROMMET
31. BOLT
32. BRACKET, CANNON RECEPTACLE MOUNTING
33. GROMMET
34. GROMMET
35. CLIP
36. BUS BAR, STARTER MOTOR
37. BOLT
38. CABLE, ASSY. - CIRCUIT BREAKER TO BUZZER
39. SCREW
40. SCREW
41. SOCKET, BATTERY SLAVE

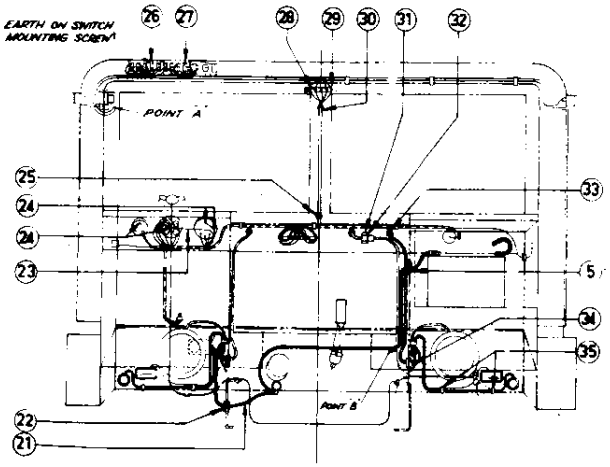


FIG 41 - WIRING LAYOUT DIAGRAM (CAB FRONT VIEW)

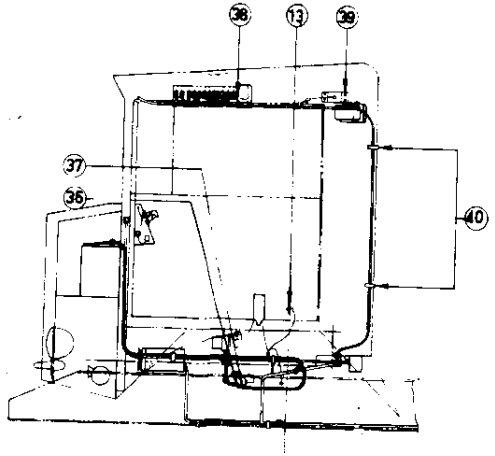


FIG 42 - WIRING LAYOUT DIAGRAM (CAB SIDE VIEW)

E N D

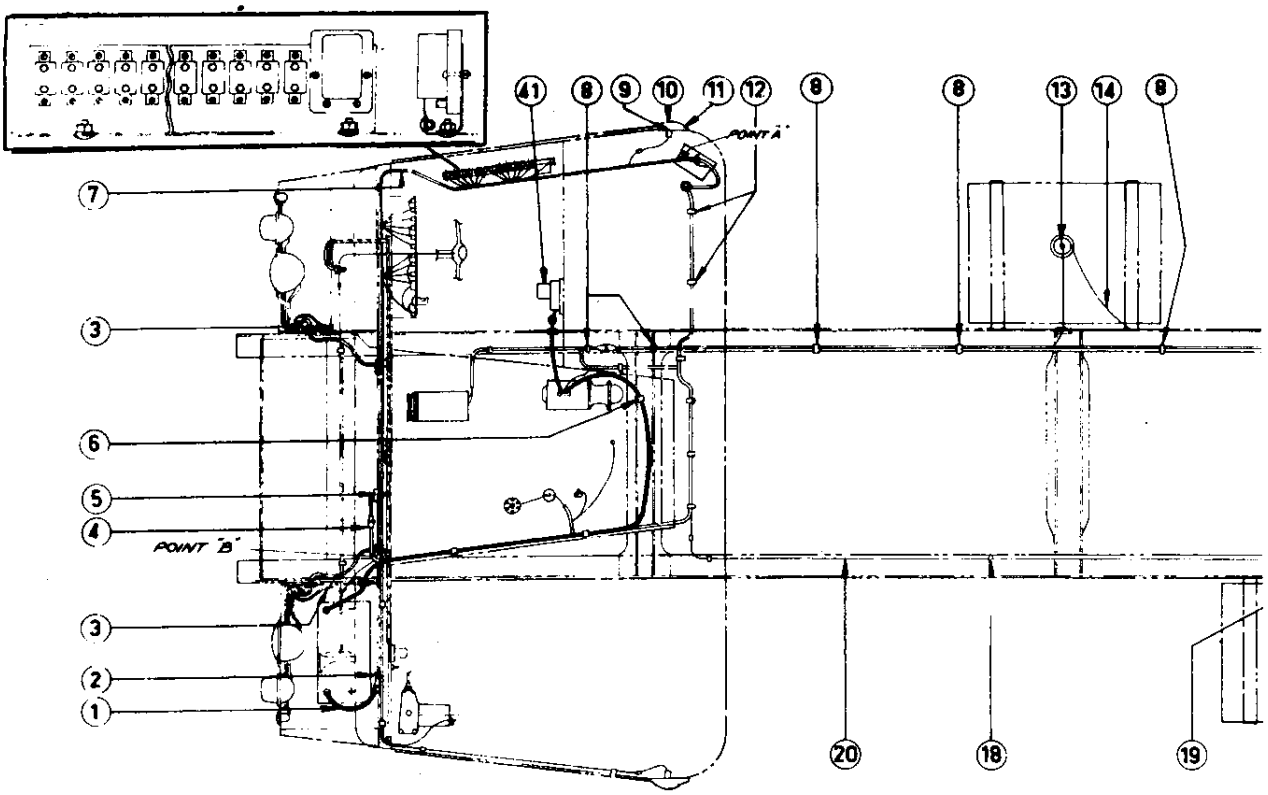


FIG 40 - WIRING LAYOUT DIAGRAM (PLAN VIEW)

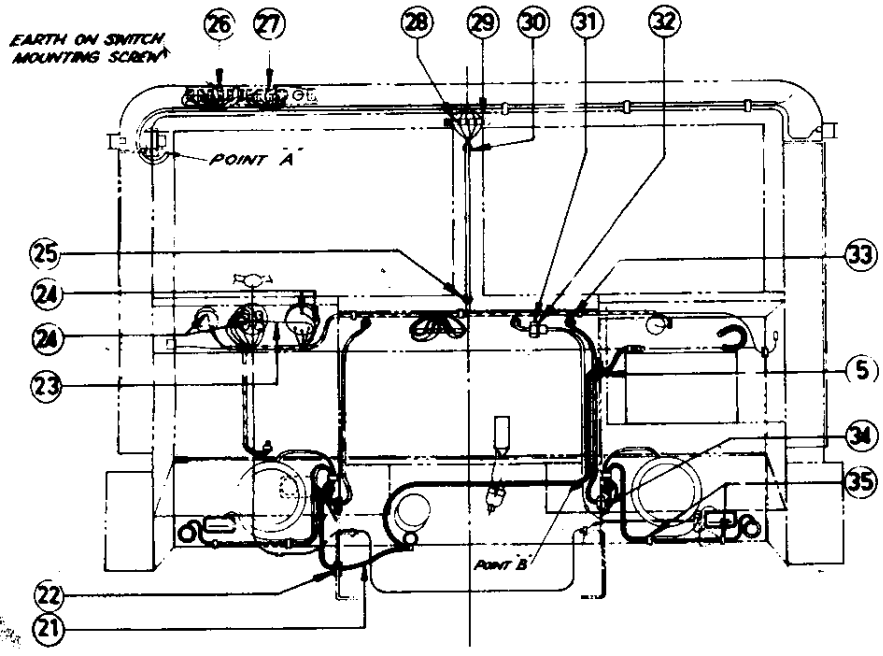


FIG 41 - WIRING LAYOUT DIAGRAM (CAB FRONT VIEW)

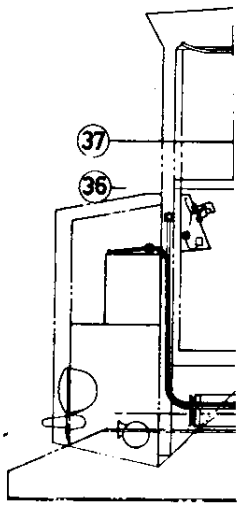
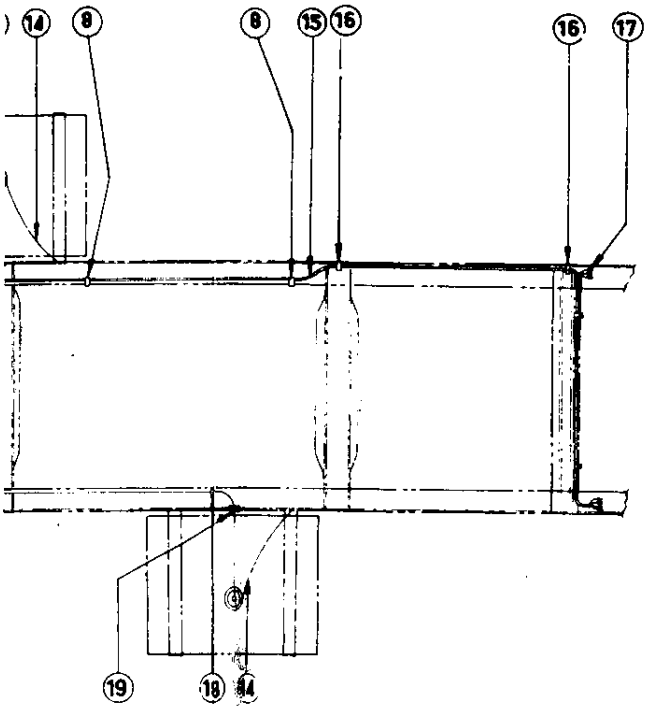
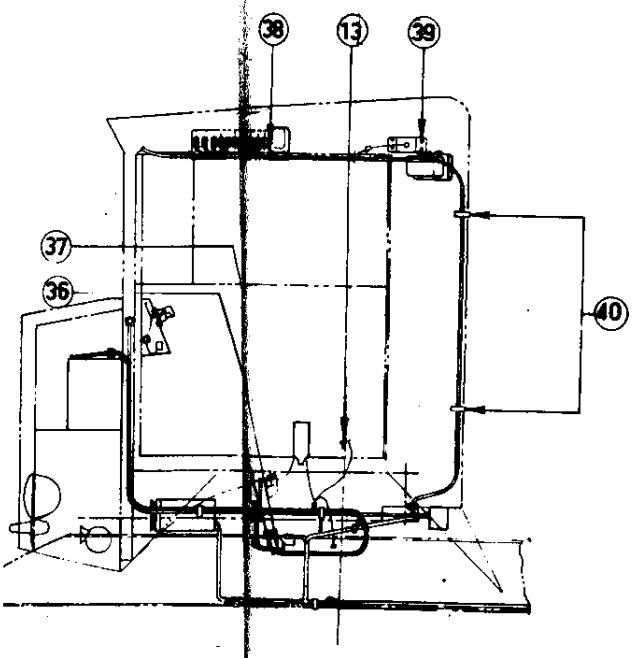


FIG 42 - WIRING



PLAN VIEW)



2 - WIRING LAOUT DIAGRAM (CAB SIDE VIEW)

E N D

LEGEND TO FIGS 40, 41 AND 42

1. CABLE ASSY., GROUND
2. WASHER, LOCK
3. WASHER. LOCK
4. SCREW
5. GROMMET
6. CLIP, CABLE
7. CANNON PLUG AND HARNESS, ASSY
8. CLIP
9. LAMP
10. LIGHT, ASSY. - FRONT WIDTH
11. SEAL - WIDTH LIGHT
12. CLIP
13. NUT
14. CABLE, ASSY. - FUEL TANK GROUND
15. HARNESS, REAR END
16. CLIP, CLOSED
17. CONNECTOR, DOUBLE
18. CLIP
19. GROMMET
20. CABLE, ASSY. CONNECTOR TO LEFT HAND TANK
21. CABLE, ASSY. STARTER TO SLAVE SOCKET
22. GROMMET
23. CABLE, ASSY, WITH SOCKET
24. LAMP
25. GROMMET
26. CABLE, ASSY. - WIPER SWITCH EARTH
27. CABLE, ASSY. - BLACKOUT SWITCH TO HEADLIGHT SWITCH
28. BLOCK, JUNCTION
29. SCREW
30. GROMMET
31. BOLT
32. BRACKET, CANNON RECEPTACLE MOUNTING
33. GROMMET
34. GROMMET
35. CLIP
36. BUS BAR, STARTER MOTOR
37. BOLT
38. CABLE, ASSY. - CIRCUIT BREAKER TO BUZZER
39. SCREW
40. SCREW
41. SOCKET, BATTERY SLAVE

TRUCK, CARGO, 2 1/2 TON, GS, WITH WINCH, AUST, NO 1 MK 3

CARBURETTOR CONTROL BELL CRANK

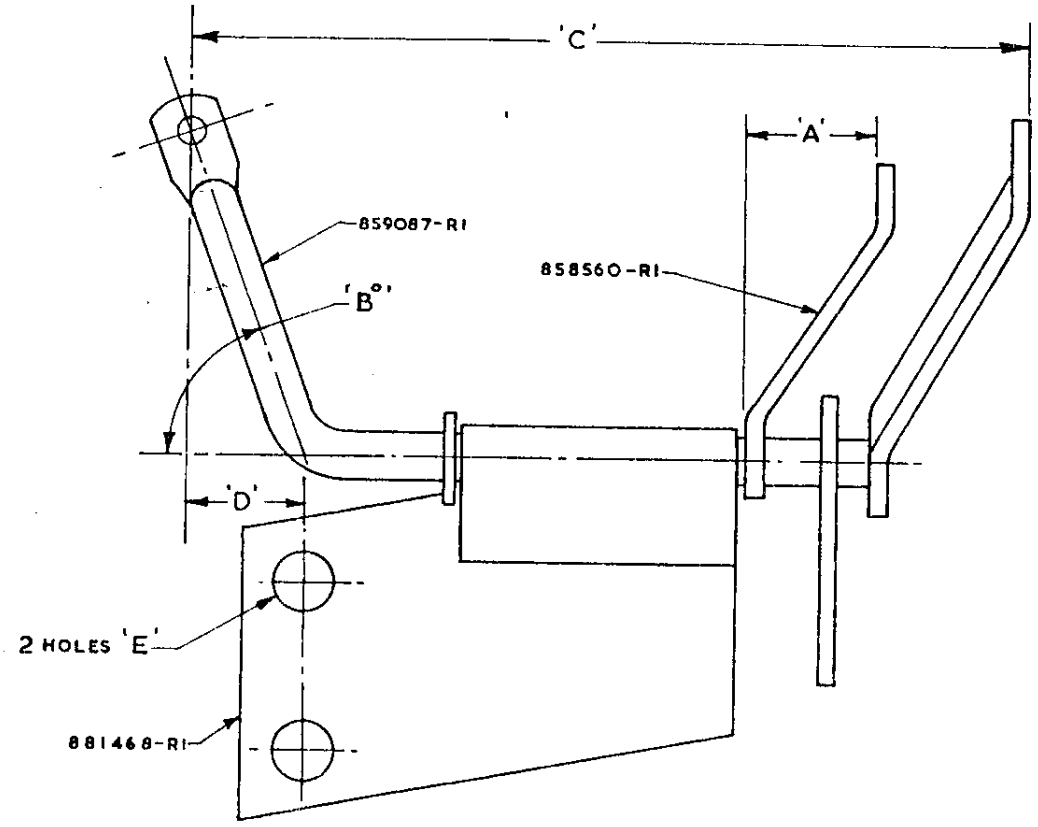
FIELD REPAIR

INTRODUCTION

1. This instruction details the method of rectifying the fouling of the manifold boss by the bell crank under conditions of extreme flexing of the chassis.

REPAIR PROCEDURE

2. Rework bell crank as per fig 1.



Detail	*Present Dimensions*	*New Dimensions*
A	0·90 inch	1·0 inch
B	75°	68°
C	6·1 inch	6·5 inch
D	1·05 inch	1·45 inch
E	11/32 inch holes	3/8 inch holes

FIG 1 - BELL CRANK DETAIL

E N D

EME (4)

TRUCK, CARGO, 2 1/2 TON, GS, WITH WINCH, NO 1 MK 3, IHC

"TRACTA" JOINT HOUSING

FIELD WORK

INTRODUCTION

1. This instruction details the removal of a portion of the "Tracta" joint housing outer rib to allow the removal of the front right hand and left hand hydraulic brake cylinder units without having to remove the front wheels.

REPAIR INFORMATION

2. This work will be carried out when the front hubs are stripped for repair or overhaul.

3. (a) Mark the portion of the "Tracta" housing rib that is to be removed as shown (fig 1).

(b) Remove the marked portion of the "Tracta" housing rib, in accordance with fig 1, using a rotary grinding wheel or cutter, chisel and half round file. *DO NOT USE HEAT.*

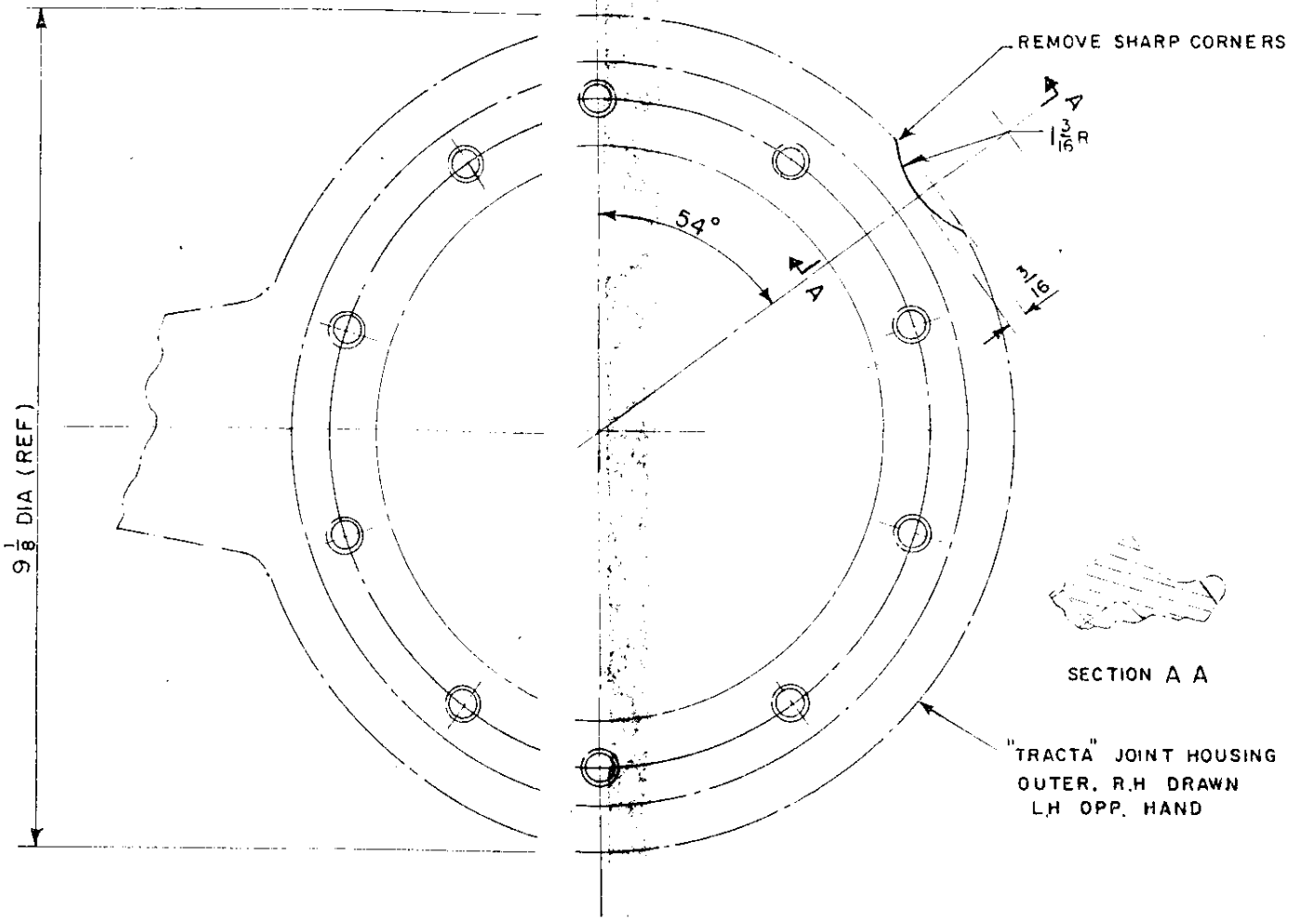


FIG. 1 - REWORK "TRACTA" JOINT HOUSING

N D

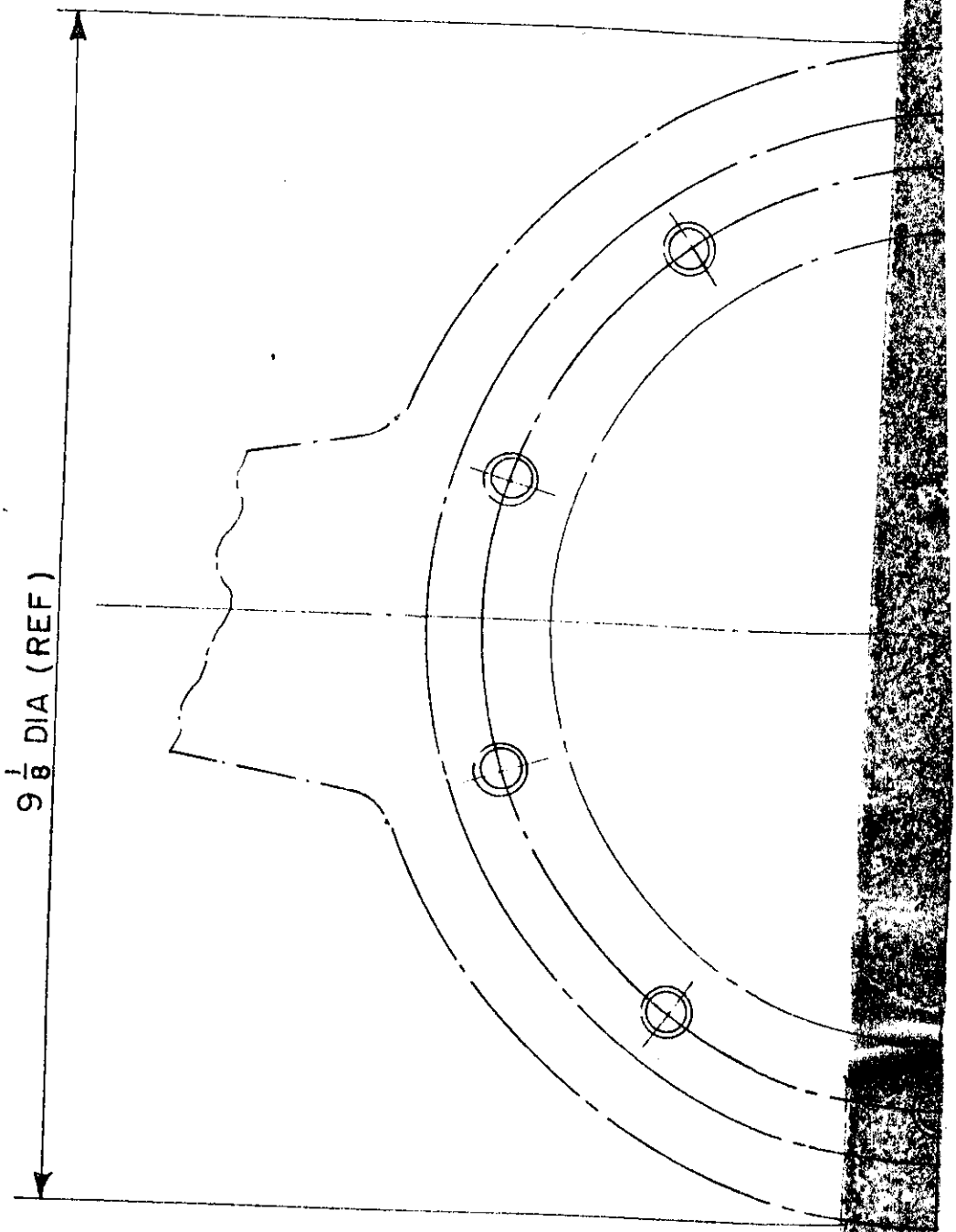
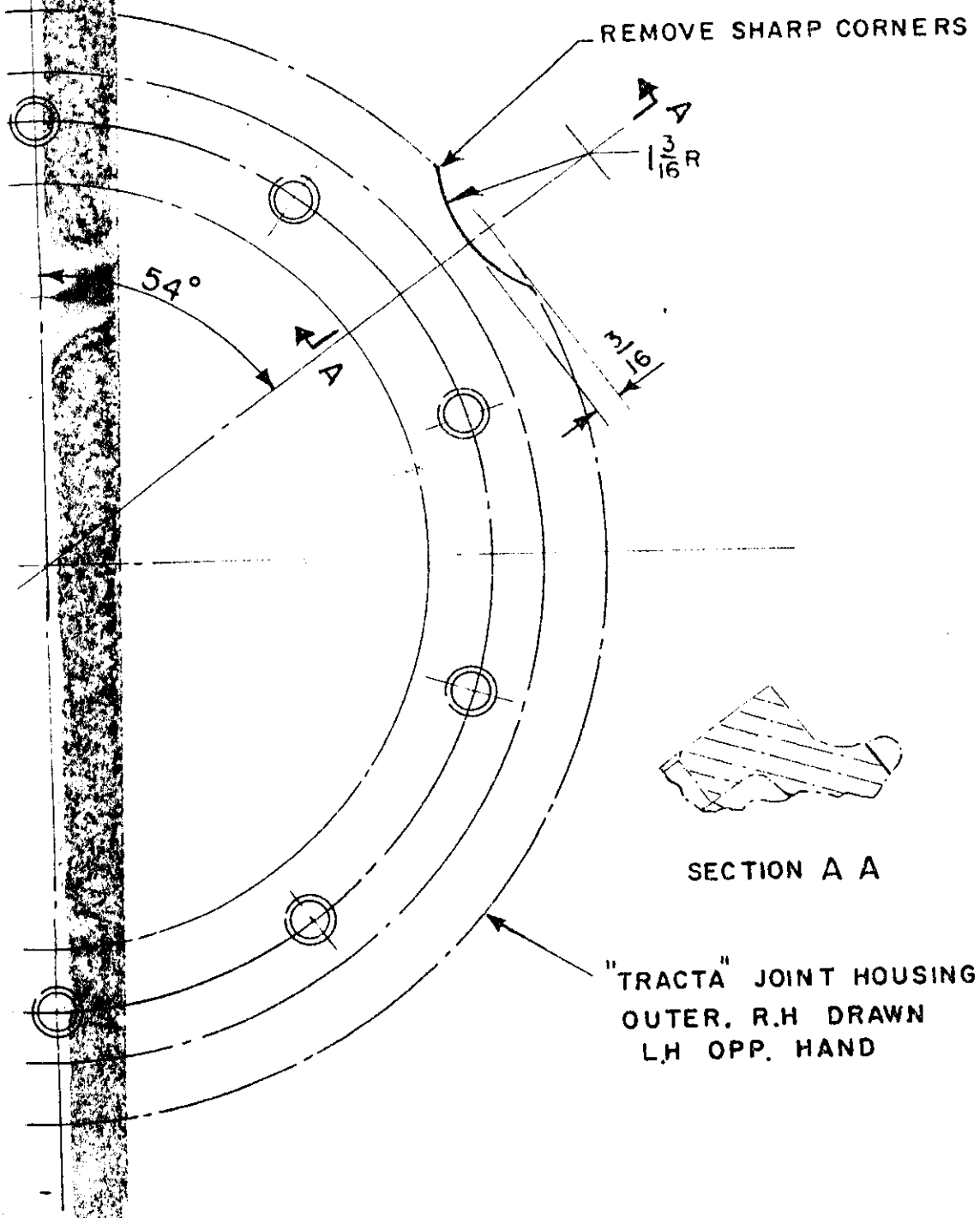


FIG 1 - REWORKING



SECTION A A

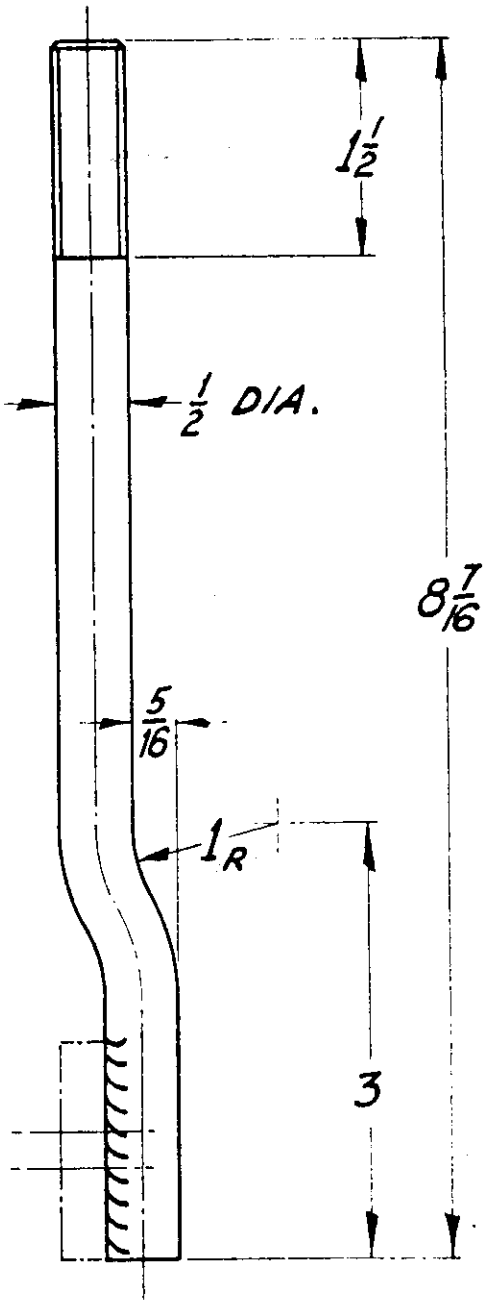
"TRACTA" JOINT HOUSING
OUTER. R.H DRAWN
L.H OPP. HAND

"A" JOINT HOUSING

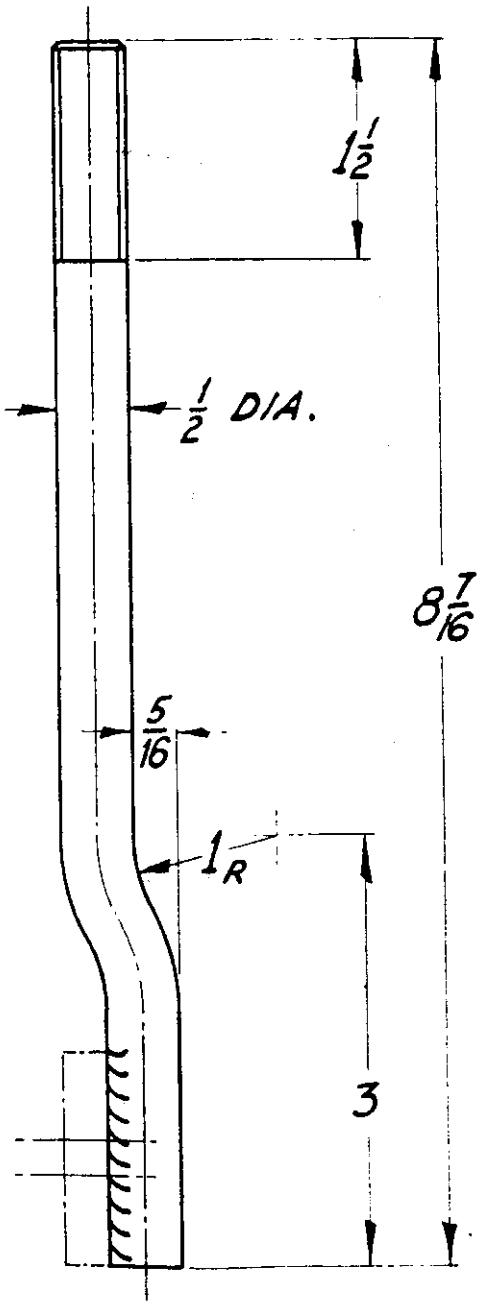
N D"

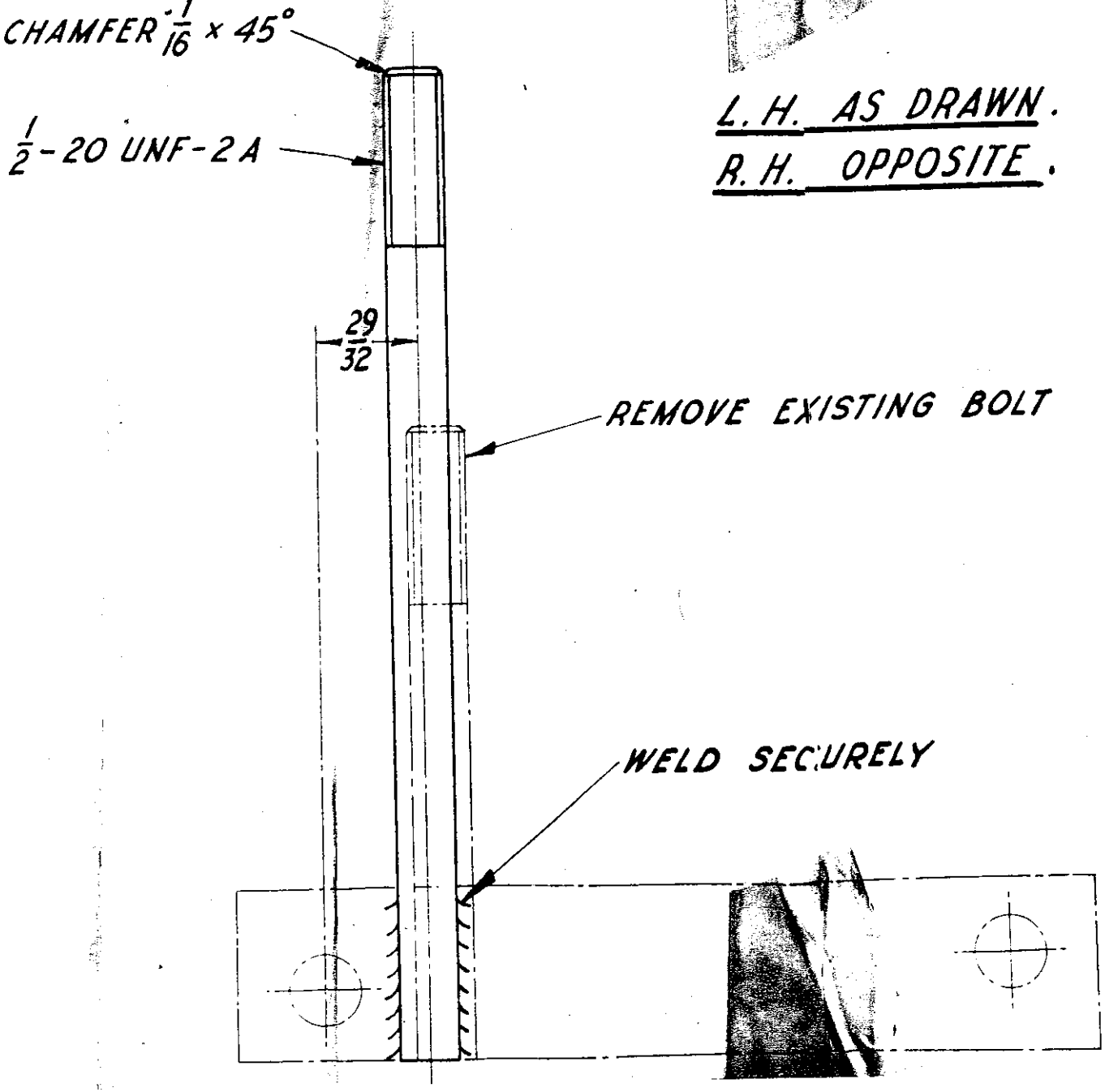
CHAMFER $\frac{1}{16}$ x 4

$\frac{1}{2}$-20 UNF-2A



L. H. AS DRAWN.
R. H. OPPOSITE.





TRUCK, CARGO, 2 1/2 TON, GS, WITH WINCH, AUST, NO 1 MK 3

BOLT AND PLATE ASSEMBLY MOUNTINGS, LEFT AND RIGHT HAND

FIELD REPAIR

INTRODUCTION

1. This instruction details the repair to be carried out when failure occurs at the body bolt and plate assembly mountings LH (2510-66-018-3470) or RH (2510-66-018-3471).

REPAIR PROCEDURE

2. (a) Remove bolt and plate assembly left and right hand.

(b) Remove existing bolt from plate and grind off remains of old weld.

(c) Refer to fig 1001 and manufacture new bolt, using STEEL, BAR, CARBON, cold finished mild, bright, 1/2 inch diameter, Stock No 9510-66-014-1460, and weld to plate.

(d) Inhibit, prime and paint in accordance with WKSP B 700.

(e) Replace and tighten bolt assembly to chassis and body member as shown in fig 1002.

NOTE:- *The next page is Page 1001.*

TRUCK, CARGO, 2 1/2 TON, GS, WITH WINCH, AUST, NO 1 MK 3

SPARE WHEEL CARRIER

FIELD REPAIR

INTRODUCTION

1. This instruction details the repair to be carried out when failure occurs at either the spare wheel carrier bracket assembly or the shaft, spare wheel assembly.

REPAIR PROCEDURE

2. (a) Remove spare wheel from carrier.

(b) Remove bracket assembly, spare wheel carrier from chassis.

(c) Dismantle bracket shaft and remove the shaft assembly from the bracket.

(d) Remove existing LH gusset (short one).

(e) Remove the old weld by grinding flush back to the bracket.

(f) Manufacture, position and weld item 1 in accordance with fig 1001 using STEEL BAR, carbon hot rolled, mild flat 2 1/2 inch x 1/4 inch (Stock No 9510-66-011-5464).

(g) Inhibit, prime and paint bracket in accordance with WKSP B 700.

(h) Assemble all components in reverse order inserting item 2 (fig 1002) WASHER, flat, steel, round, zinc coated, 1 inch bolt size, Stock No 5310-66-016-8932, where required.

NOTE:- The next page is Page 1001.

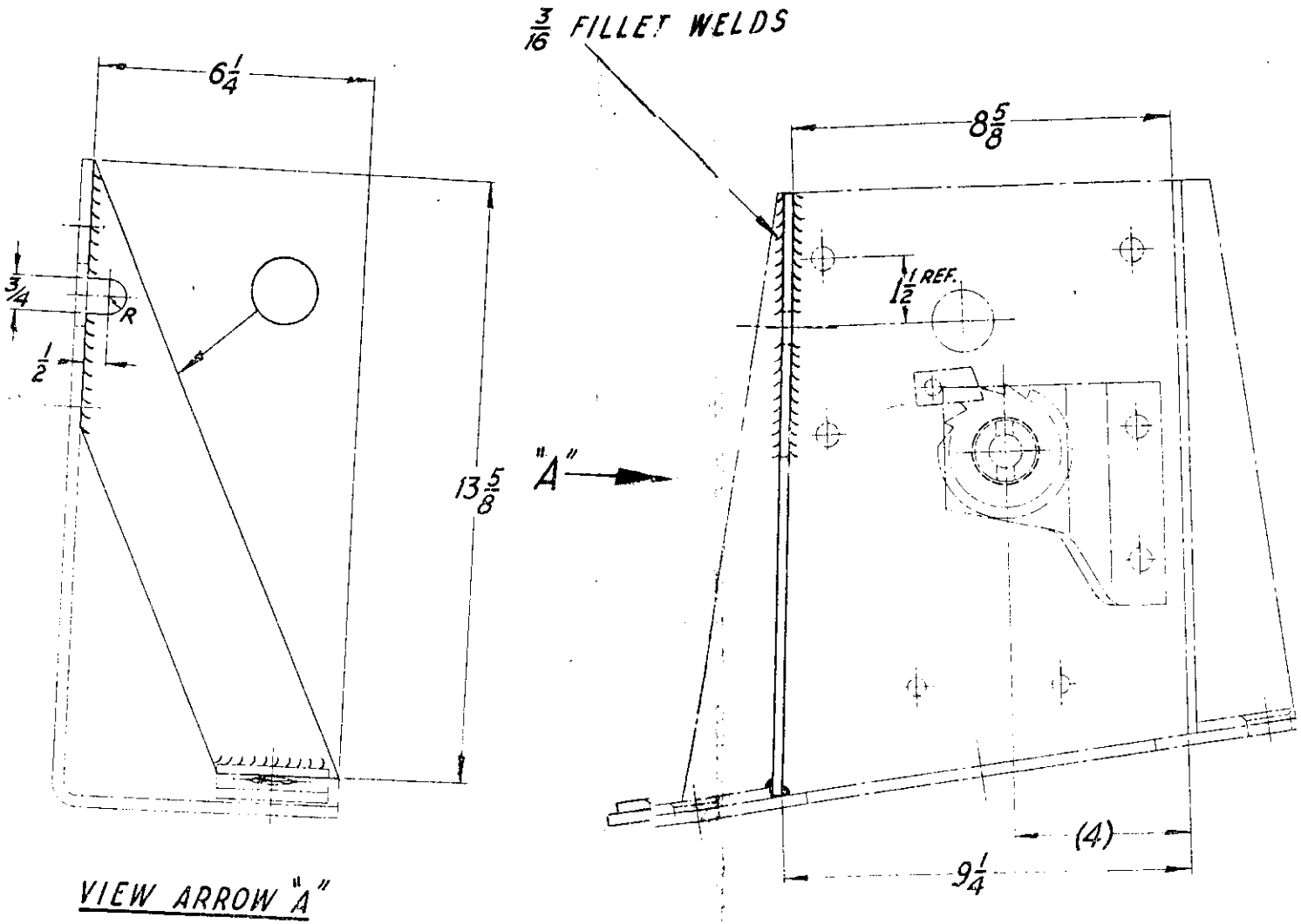
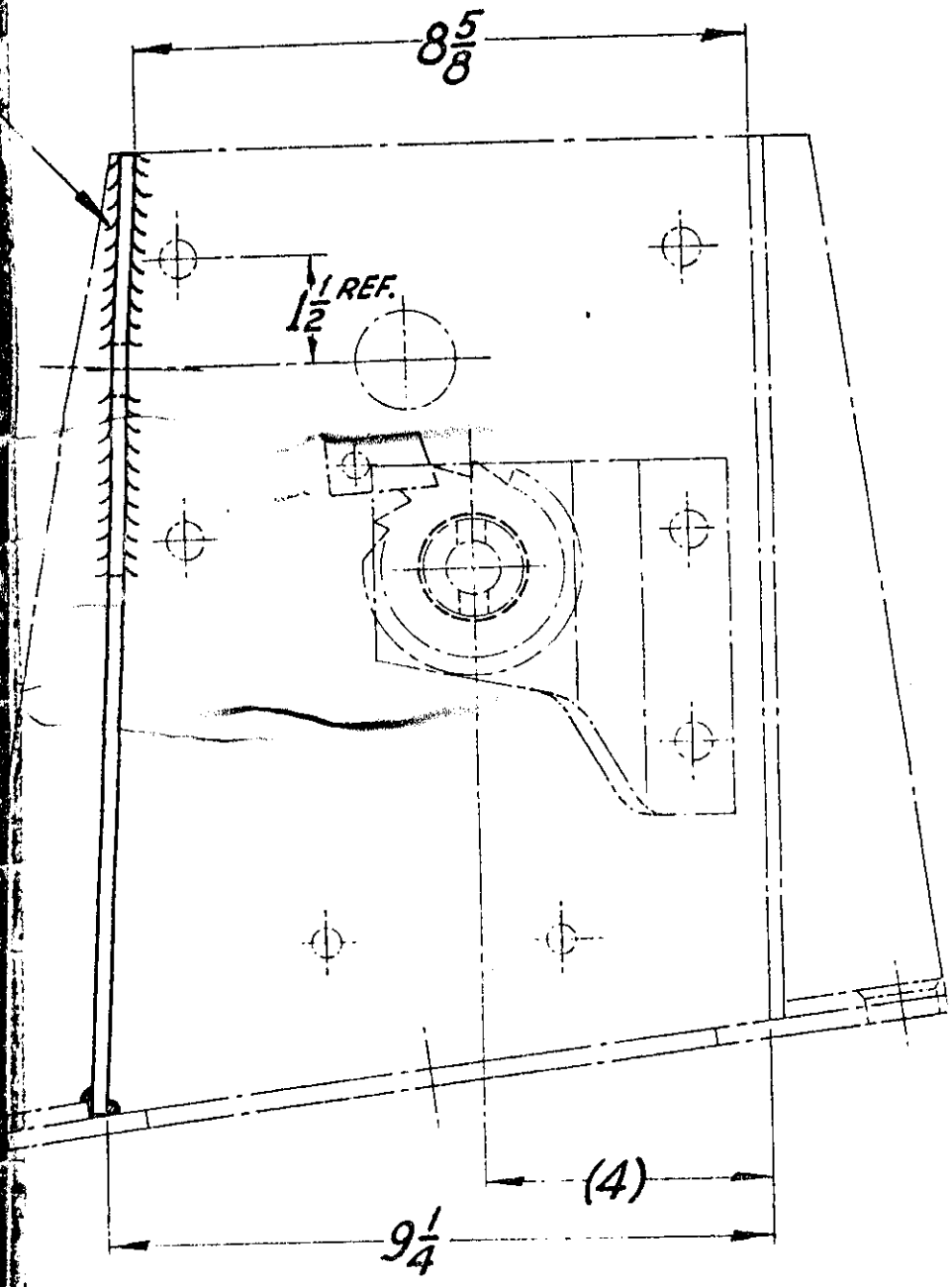
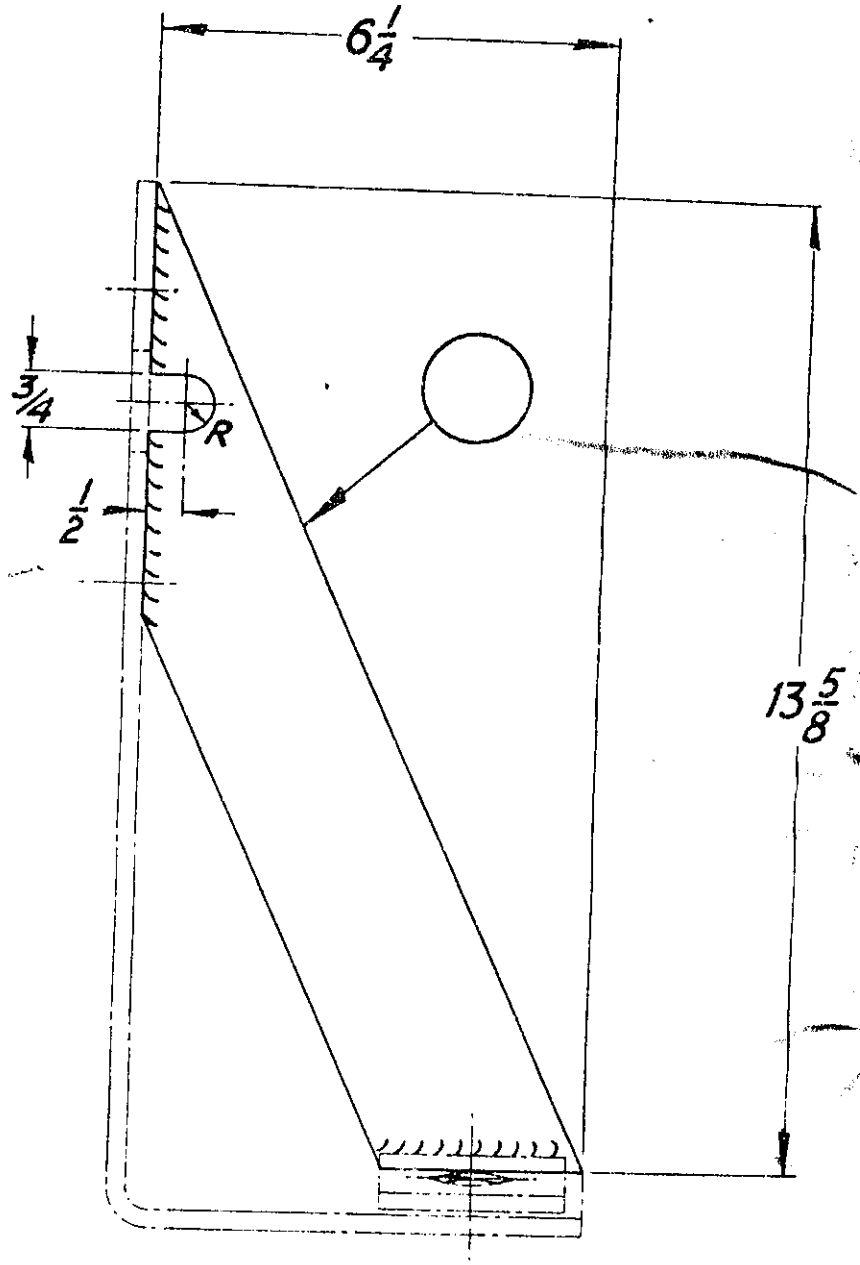


FIG 1001 - BRACKET ASSEMBLY, SPARE WHEEL CARRIER

ELDS



ARE WHEEL CARRIER



VIEW ARROW "A"

FIG 1001 - BRACKET A

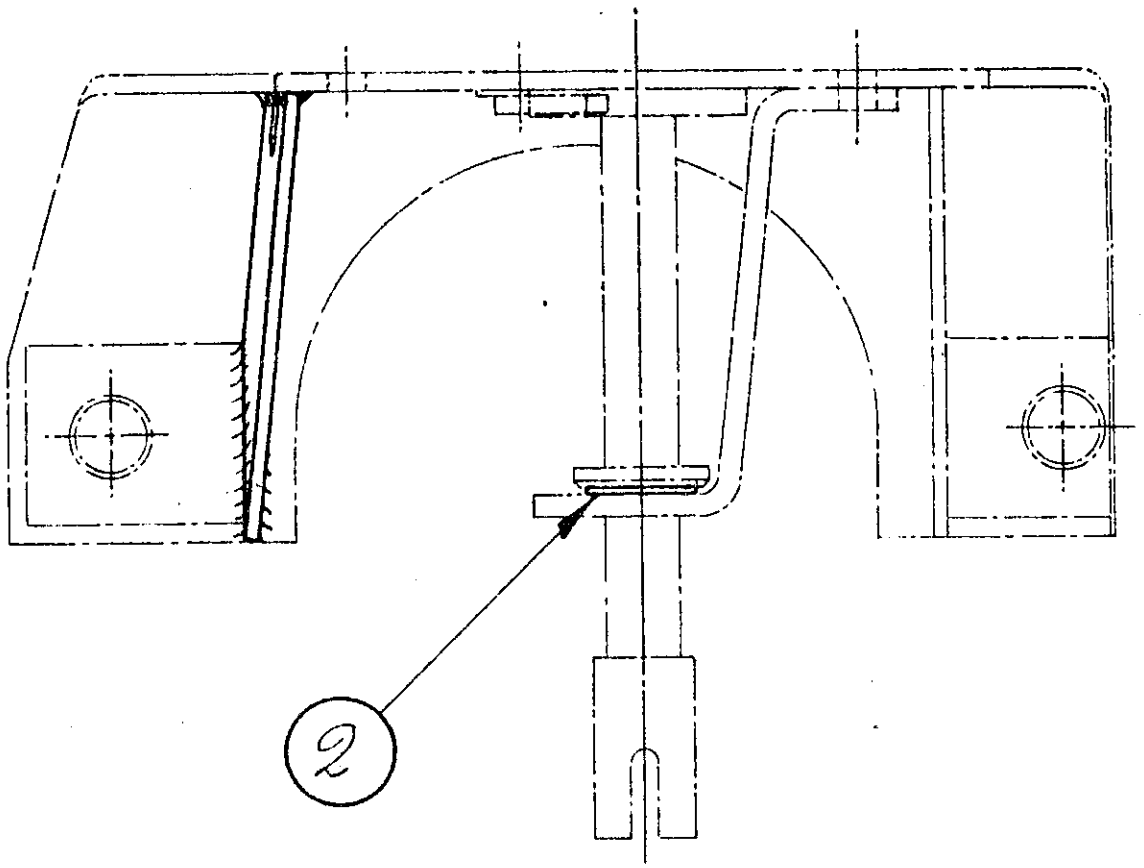


FIG 1002 - SHAFT, SPARE WHEEL ASSEMBLY

E N D

TRUCK, CARGO, 2 1/2 TON, GS AUST NO 1 MK 3

AIR CYLINDER, WINCH CONTROL CLUTCH, BARREL

FIELD REPAIR

INTRODUCTION

1. This instruction details the method of replacing the steel cylinder barrel with a brass cylinder barrel, when failure occurs due to corrosion through the ingress of moisture into the air cylinder winch control clutch.

REPAIR INFORMATION

2. (a) Remove the air cylinder winch control clutch from the winch assembly.

(b) Dismantle the air cylinder barrel by removing the blind end.

(c) Smear the inside diameter of the replacement brass barrel (2590-66-023-7401) with Grease XG-279.

(d) Locate the brass barrel and tighten down blind end, replace the air cylinder winch control clutch on the winch assembly.

(e) Test air cylinder by actuating the hand winch control valve into the engaged and disengaged position.

E N D

TRUCK CARGO, 2-1/2 TON, GS, W/WINCH AUST NO 1 MK 3

GEAR CHANGE LEVER

FIELD REPAIR

INTRODUCTION

1. This instruction details the repair to be carried out when difficulty is experienced in selection of first or reverse gear of the subject vehicle.

REPAIR INFORMATION

2 a. Remove the shouldered bolt on the front fork of the remote shift rod. Unscrew cap, gear shift lever, and remove gear shift from vehicle.

b. Remove knob and block from remote control lever.

c. Shorten lever, heat lever and rework as shown in fig 1.

d. Paint all damaged surfaces in accordance with Wksp B 700.

e. Reassemble in reverse order ensuring that the lever off-set is towards the driver.

f. Grease lubrication points after assembly.

g. Check gear selection.

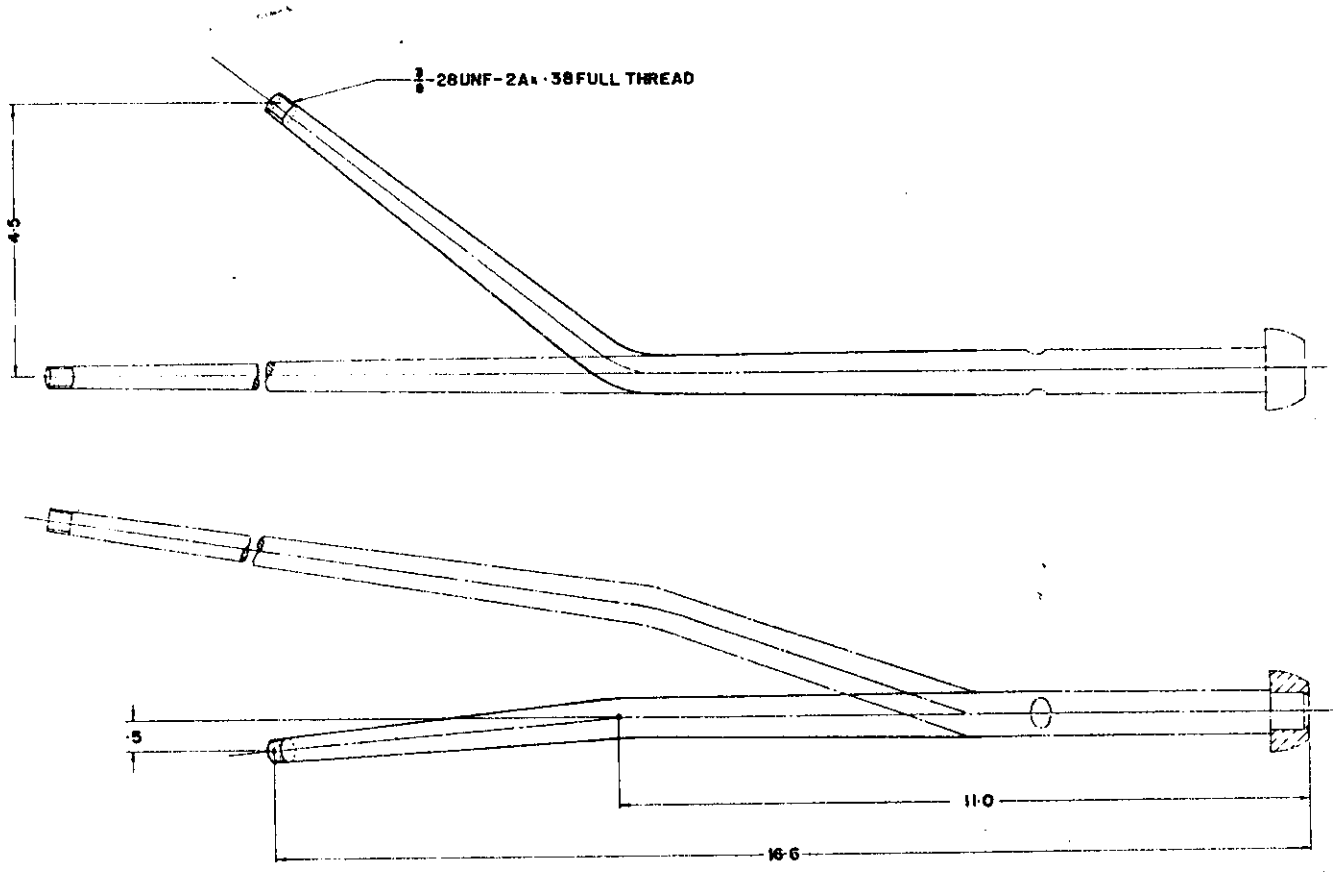


FIG 1 - GEAR CHANGE LEVER

E N D

TRUCK, CARGO, 2–1/2 TON, GS, W/WINCH NO 1 MK 3

FRONT AXLE HOUSING

FIELD REPAIR

Introduction

1. When the present RAAOC stocks of FRONT AXLE HOUSING (2520–66–018–3412) are exhausted, they are to be replaced with FRONT AXLE HOUSING (2520–66–025–1946) as used on the Trucks, 5 Ton, 6 x 6, GS, Cargo and Dump.

Repair Information

2. When fitting the new type axle the following items are required:

Stock No	*Designation*	*Qty per Veh*	*Drawing No*
2520–66–025–1946	HOUSING Front Axle	1	ADE(V)94–194
5306–66–025–2061	BOLT, "U", UNF, 2A steel, 7/8 inch by 16-5/8 inch	2	ADE(V)94–198/2
2510–66–025–1950	PLATE, "U" bolt clip front RH	1	ADE(V)94–197
5306–66–025–2060	BOLT, "U", UNF, 2A steel, 7/8 inch by 16-5/8 inch	2	ADE(V)94–198/1
2510–66–025–1951	PLATE, "U" bolt clip front LH	1	ADE(V)94–196
5307–66–025–1948	STUD, plain, UNF, 2A, steel, 1/2 inch by 2-3/4 inch	6	
5307–66–025–1947	STUD, plain, UNF, 2A, steel, 1/2 inch by 2-1/4 inch	18	
5310–66–019–3960	NUT, Plain, Hex, UNF, 2B, steel formed, zinc coated, 1/2 inch bolt size	24	

(TSU 329/70)

END

TRUCK, 2 1/2 TON, GS, NO 1, MK 3
FITTING REPLACEMENT CAB
BASE REPAIR

NOTE: These pages 1 and 2 supersede pages 1 and 2 of issue 1

Introduction

1. This instruction details the method of removing a damaged MK3 Cab from its chassis and the procedure to be adopted when fitting a current model service replacement cab.

2. It may not be possible to adhere strictly to the step by step process set out in this instruction because of the different types of components damaged in a collision or accident. New components, where possible, must be substituted for damaged items.

3. The following Group 2 Modification Instructions should be carried out before/during the assembly stage of the replacement cab:

a. VEH G 557–22 Modification of the Lever PTO Control.
b. VEH G 557–29 Modification detailing the Re–Routing of Fuel Lines.

4 **Vehicles affected:** Vehicles undergoing base repair that require a replacement cab, or vehicles requiring a replacement cab as the result of an accident. The estimated time to perform this task is 30 manhours.

5. **Stores required:**

a. 2510–66–028–7182	Cab Assembly	qty. 1
b. 2930–66–024–9908	Radiator Assemblies Oil and Water Cooling (refer para 116).	qty. 1
c. 2930–66–024–9929	Hose, Preformed Radiator Outlet lower	qty. 1
d. 2530–66–018–3394	Hose, Flexible Air	qty. 1

6. **Stores removed:** The following stores are to be removed from the MK3 chassis. Serviceable components/and radiator assembly returned to RSG. Unserviceable Components are to be reduced to produce:

a. ADE (V) 225–151/1	Cab Assembly	qty. 1
b. 2930–66–018–2163	Radiator Assemblies Oil and Water Cooler	qty. 1
c. 4720–66–017–4074	Hose, Preformed, Radiator Outlet lower	qty. 1
d. 4720–66–017–4075	Hose, Preformed, Radiator Outlet lower	qty. 1
e. 2930–66–017–3947	Hose, Preformed, Radiator Outlet lower	qty. 1

f. Serviceable components and/or radiator assembly. Unserviceable components are to be reduced to produce

REPAIR PROCEDURE

Removal of MK3 Cab

7. Disconnect the battery terminals and remove battery.

8. Drain air from air reservoir and release any air in the braking system.

9. Disconnect (LH and RH) fuel lines from the two way cock.

10. Drain the radiator and oil cooler.

11. Remove the (LH and RH) door assemblies.

12. Disconnect the three winch dog clutch bulkhead air hose assembly fittings located at the rear of the cab.

13. Remove the engine latch cover upper.

14. Remove the remote shift rod assembly bolts at the gear change lever and the gear box shift lever block assembly.

15. Remove the clevis pin from the hand brake rod yoke.

16. Remove the clevis pin from the transfer case relay rod yoke.

17. Remove the grooved, headless pin that connects the inner and outer cable assembly from the transfer case gear lock to the transfer case lever.

18. Disconnect the LT solenoid cable and the two HT cables from the starter motor. The HT cables are positioned: one to the battery, one to the interconnecting box, vehicle starting.

19. Remove the lower engine cover by removing 16 screws, unbuttoning the gear lever and transfer case lever boot assemblies, disconnect the choke and throttle cables from the carburettor.

20. Disconnect the horn wires from the two connectors, one located at the bottom of the steering box, the other near the horn.

21. Disconnect the LH fuel gauge sender lead from the connector located near the bottom of the winch PTO lever.

22. Disconnect the LT lead from the coil.

23. Disconnect the water temperature sender lead.

24. Disconnect the oil pressure sender lead.

25. Disconnect the generator leads and label them.

26. Disconnect the RH fuel gauge sender lead, stoplight, taillight, turning indicator and NATO lead connectors. (Wiring loom is located at the back of cab).

27. Disconnect the earth strap located at the cab front (crossmember) LH side.

28. Disconnect the flexible fuel line at the fuel pump.

29. Disconnect the pipe assembly from the clutch slave cylinder flexible hose.

30. Remove split pin and disconnect the accelerator rod from the carburettor.

31. Remove the floor mats.

32. Remove the four truss head screws that retain the cross shaft for the panel accelerator rod hinge.

33. Remove the dipper switch.

34. Disconnect the speedometer cable at the speedometer head.

35. Remove the hand control brake valve pipes from the bulkhead.

36. Remove the hand control brake valve bracket and assembly.

37. Remove the horn push button insert, the push button, the electrical contact cup, helical spring and the electrical contact and then withdraw the horn cable from the steering column shaft.

38. Remove the three round headed screws, base plate, steering wheel nut and then the steering wheel. (If necessary use a puller to remove the steering wheel).

39. Remove the bearing seat spring and the sleeve.

40. Unscrew the two lock nuts and remove, then disconnect the turning indicator terminals and withdraw the leads.

41. Unscrew the clamp bolt from the upper steering box housing cover.

42. Remove the steering column clamp bracket at the bottom of the instrument panel and withdraw the steering column.

43. Disconnect the three front rubber air hoses at the bulkhead fittings (in front of the steering box).

44. Remove the two top radiator mounting bolts and stabilizers.

45. Remove the four bolts which retain the rear cab mounting brackets.

46. Remove the front cab mounting bolts and rubber mountings.

47. Remove the two rubber splash guards from the rear of the cab.

48. Locate a board of suitable strength through cabin and attach a sling (fig 1). Adjust hook and lifting sling and keep cab as level as possible when lifting (fig 2). During lifting move steering column shaft to a vertical position.

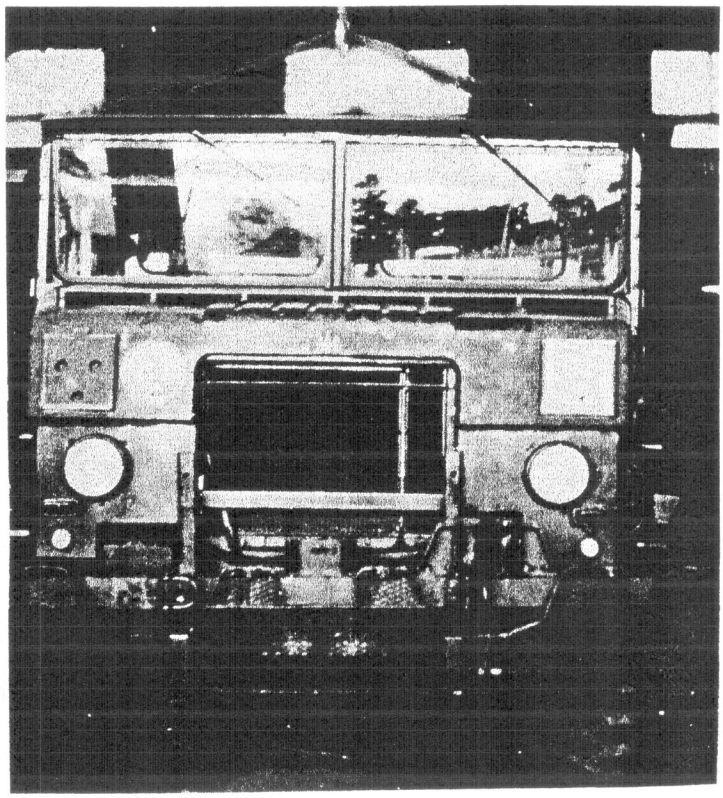


FIG. 1 – LIFTING BOARD AND SLING POSITIONED IN CAB – FRONT VIEW

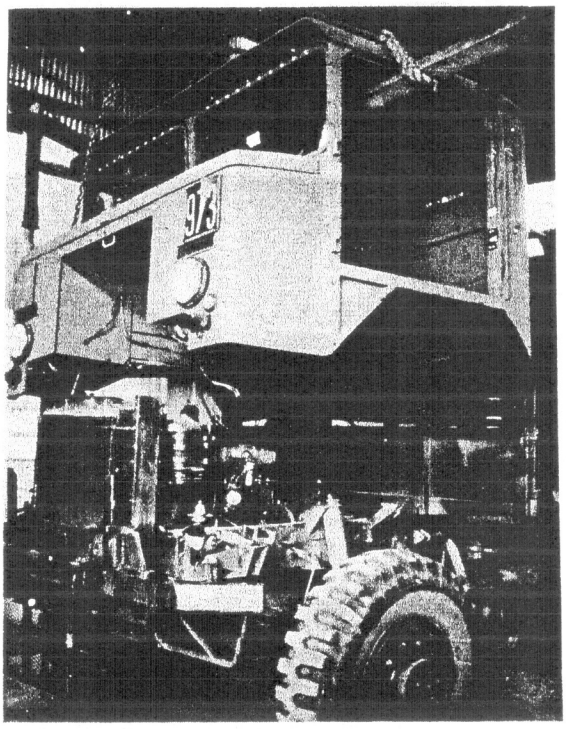


FIG. 2 – LIFTING BOARD AND SLING – SIDE VIEW

49. With one man at the front of the cab to guide the cab over the radiator and oil cooler (fig 3) raise the cap slowly with a crane or a block and tackle until the cab is clear of the steering column shaft.

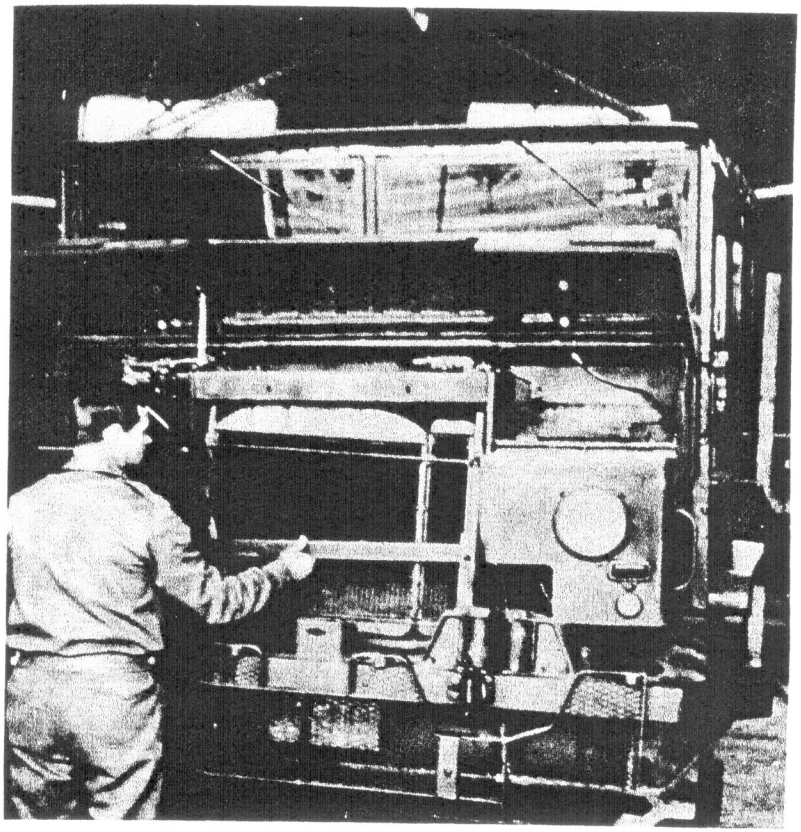


FIG. 3 — GUIDING CAB FRONT OVER RADIATOR AND OIL COOLER

50. Move cab forward or sideways until clear of the chassis (fig 4); or move chassis backwards until clear of the cab and lower the cab on to a suitable stand.

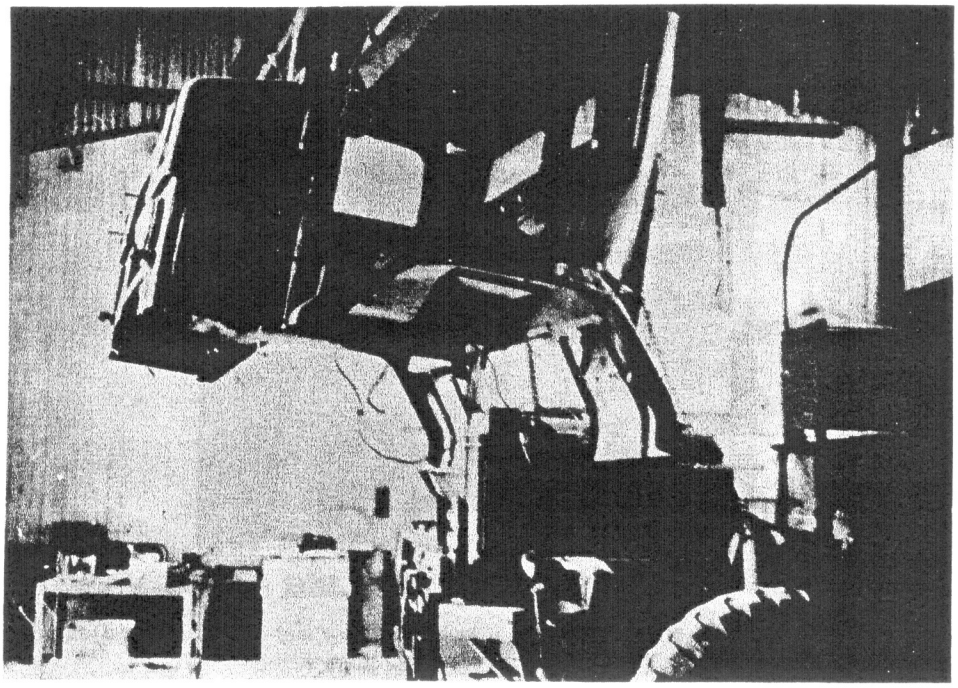


FIG. 4 — CAB BEING REMOVED CLEAR OF CHASSIS

51. Remove radiator, oil cooler and frame assembly.

Preparing Replacement Cab for Fitting to MK3 Chassis

52. In the following paragraphs "remove" means, the removal of serviceable items from damaged MK3 Cab; "fit" means the fitting of serviceable items removed from the damaged cab, or new items drawn from the store to replace those damaged.

53. Place the replacement cab on a suitable stand in the vicinity of the damaged cab also on a suitable stand.

54. Remove and fit windscreen wiper motor, wheel box and rack assembly.

55. Remove and fit LH and RH sun visors.

56. Remove and fit the outside grab handle, and the two inside floor grab handles (passengers); do NOT fit LH facia panel grab handle at this stage.

57. Remove and fit the winch dog clutch control assembly instruction plate to the rear of the cab. Remove and fit the three brass union bulkhead fittings (winch control). Connect the pipes to the bulkhead unions and the winch dog clutch control.

58. Remove and fit the two way fuel cock and instruction plate in accordance with VEH G 557–29.

NOTE: It is not necessary to disconnect the flexible fuel lines from the two way cock.

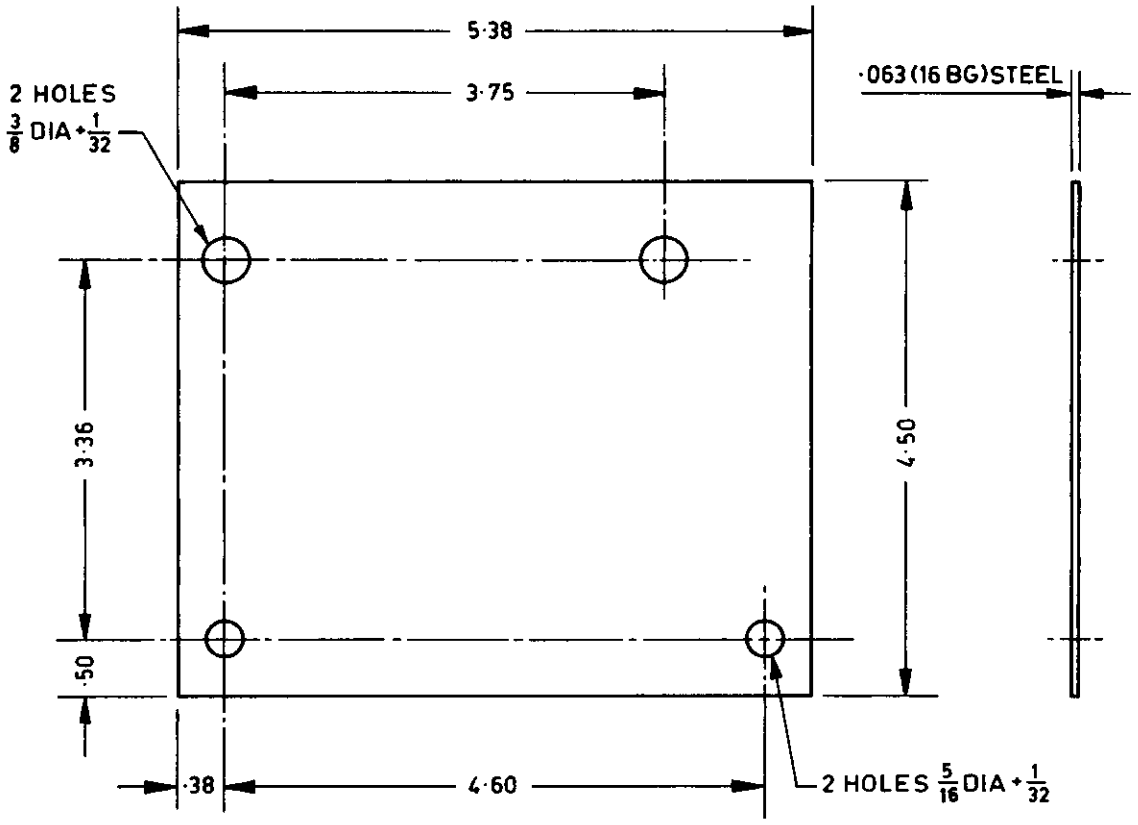
59. Connect the clip into position and connect the pipe assemblies, fuel cock to fuel pump.

60. Remove the handbrake control and rod.

61. Remove and fit the handbrake rod, plate and boot cover (four screws), then fit handbrake control and rod.

62. Remove and fit the interconnecting box, vehicle starting.

63. Manufacture blanking plate to cover the treadle valve orifice in accordance with fig 5 and bolt in place as per fig 6.



DETAIL 'A'

NOTE: TOLERANCES ± ·030

FIG. 5 – DETAIL OF TREADLE VALVE ORIFICE BLANKING PLATE

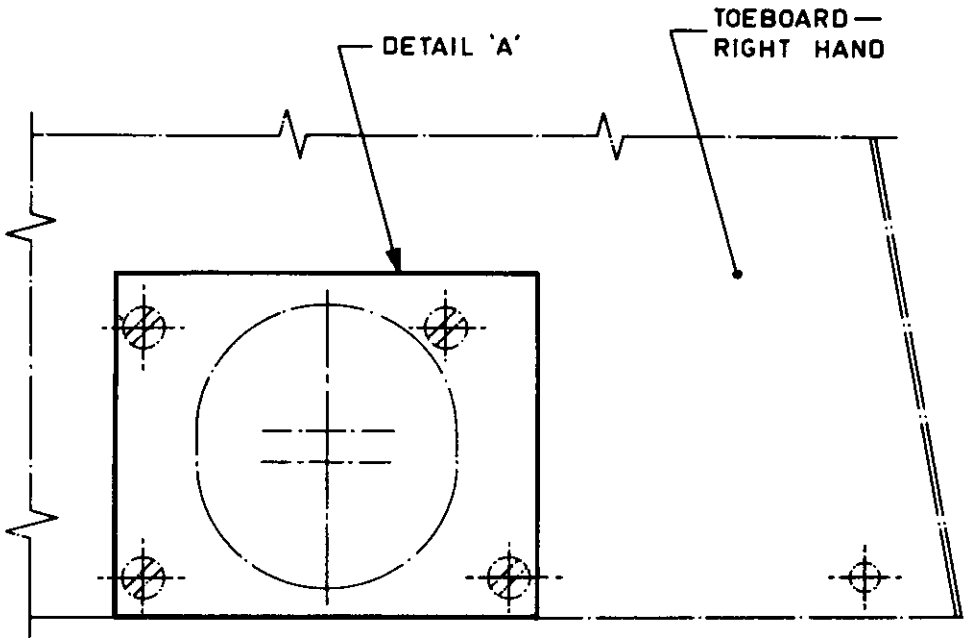


FIG. 6 – LOCATING OF TREADLE VALVE ORIFICE BLANKING PLATE

64. Manufacture the blanking plate to cover the hoist control lever orifice in accordance with fig 7 and bolt into place.

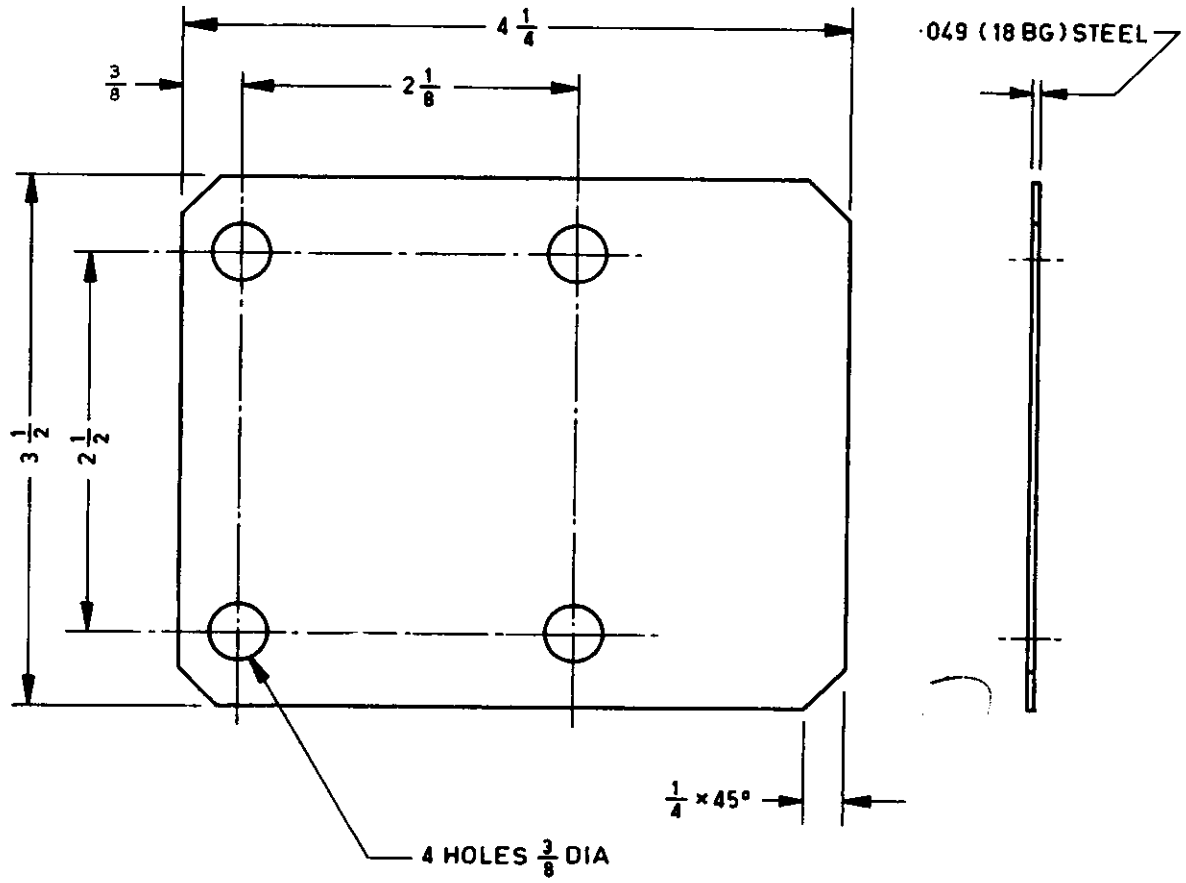


FIG. 7 – DETAIL OF HOIST CONTROL LEVER ORIFICE BLANKING PLATE

65. Remove the two pipes, bulkhead to brake valve assembly and discard.
66. Disconnect the clutch master cylinder pipe.
67. Unhook the clutch and brake pedal return springs.
68. Remove the complete assembly which carries the clutch and brake components (four 3/8 inch setscrews).
69. Disconnect the bulkhead fitting to the air pressure gauge.
70. Disconnect the flexible pipe and the steel pipe at the bulkhead fitting piece.
71. Remove spacer and manifold cross (bulkhead fitting).
72. Disconnect the other end of the flexible hose, unscrew the tube nut, and remove the bulkhead fitting.
73. Drill two 13/16 inch diameter holes in the toe panel assembly in accordance with fig 8.
74. Fit items in reverse order, except the bulkhead to air pressure gauge pipe under toe panel, and substitute 2530–66–018 –3394 hose, flexible, air, for the discarded pipe.

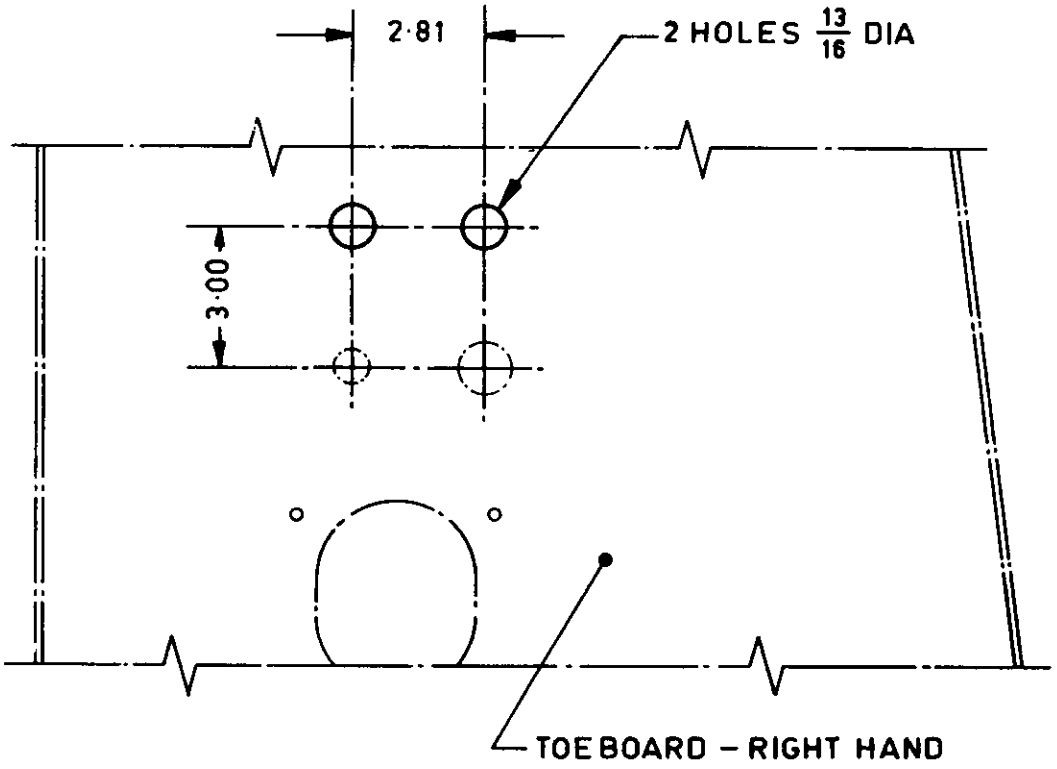


FIG. 8 – DRILLING TOE PANEL ASSEMBLY

75. Remove and fit retainers, steering column to toe panel and dust seal (four screws).
76. Remove and fit the steering brace column (three 5/16 inch nuts, bolts and washers).
77. Remove and fit the accelerator bolt stop and pedal control.
78. Remove the inner and outer facia panels, disconnecting the maplight switch and trouble light socket.
79. Disconnect the wiring loom at the cannon plug fixed on the bracket of the belt rail assembly.
80. Unclip the loom from the retaining clips situated under the cab floor and across the back of the floor.
81. Unscrew the clips that retain the loom in the inside of the rear corner panel and up to the voltage regulator.
82. Remove the voltage regulator mounting bolts.

NOTE: It is not necessary to disconnect the terminal wires at the voltage regulator.

83. Remove the cover plate assembly protecting the buzzer unit and circuit breakers; do NOT disconnect the circuit breakers.

84. Remove the instrument cover dial switch cluster.

NOTE: It is not necessary to disconnect any of the switches.

85. Remove instrument facia panel as an assembly, disconnecting the flasher unit at the connector. Remove the junction box cover and disconnect the connector.

86. Remove the bracket holding the cannon socket to the belt rail.

87. Remove the junction block upper at the centre pillar, disconnect the connectors and draw the loom out from behind the centre pillar at the bottom.

88. Remove and fit the flasher unit.

89. Remove and fit the battery earthing strap.

90. Remove and fit the HT lead, battery to starter motor.

91. Remove and fit the cab width lights.

92. Remove and fit the black–out lights; retain the set screws with 5/16 UNC nuts and spring washers.

93. Remove and fit the park and turning light assemblies.

94. Remove and fit the headlight assemblies, using each assembly as a template to drill the additional bottom hole 5/32 inch and fastening with self tapping screws.

Refitting Wiring Loom

95. Modify the top of the instrument cluster facia panel from the damaged cab to allow the RH window catch to operate, see fig 9.

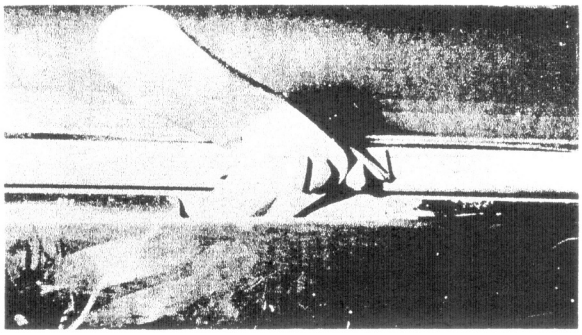


FIG. 9 – RH WINDOW CATCH OPERATION AND INSTRUMENT FACIA PANEL MODIFICATION

96. Connect the flasher unit connector and bolt the instrument cluster facia panel in position.

97. Feed the LH light and the battery loom wires along the clips and into their relative positions and close the clips.

98. Screw the bottom junction block and upper junction box into position.

99. Drop a draw wire down from the top of the centre pillar, tie the wire to the centre pillar boom and pull the loom up through the centre pillar and out of the orifice and connect to the terminals at the upper junction box, fit the loom grommets.

100. Modify the outer facia panel to allow LH windscreen catch to operate (compare fig 9).

101. Connect the map light and the map light terminals, the trouble light leads and fit the outer facia panel.

102. Bolt the LH grab handle into position.

103. Fit the instrument switch cluster (above RH windscreen, three set screws).

104. Fit the circuit breaker, the buzzer board and the protective cover plate.

105. Run the LH portion of the loom along the windscreen header and clip into position.

106. Connect the windscreen wiper motor terminals and the LH width light connections.

107. Feed the RH loom from the buzzer down the RH inner corner and pass through the hole in the floor.

108. Fit the voltage regulator to the RH corner panel (1/4 UNF bolt, nut and spring washer) at the LH regulator hole and the existing hole on the panel. Using the voltage regulator as a template, drill two 1/4 inch diameter clearance holes, one for the RH side of the voltage regulator and one at the bottom centre.

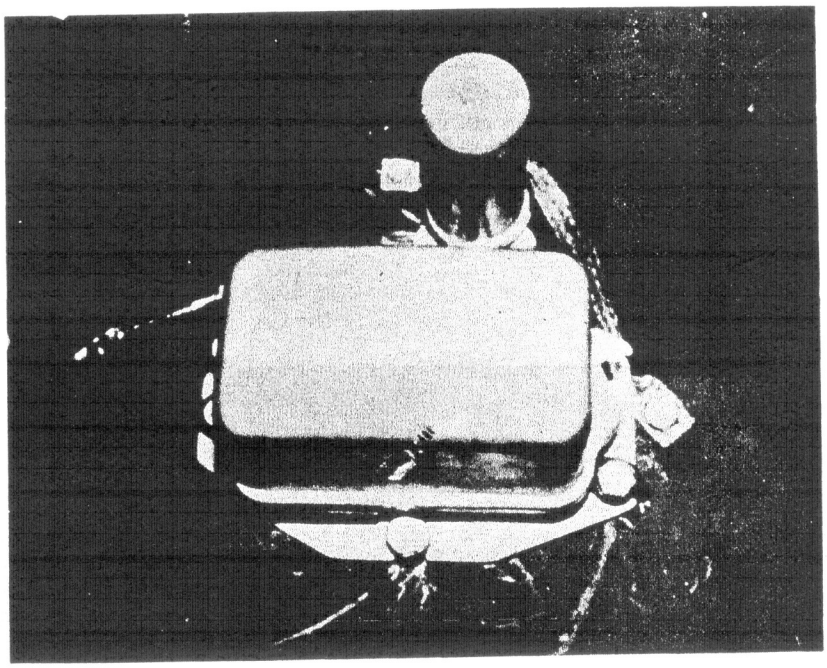


FIG. 10 – FITTING VOLTAGE REGULATOR

109. Clip the loom into position on the inside of the RH corner panel and connect the RH width light.
110. Drill an additional hole for the voltage regulator earthing strap and bolt the strap into position (see fig 10).
111. Feed the loom across the floor under the body and clip into position.
112. Feed the loom along the engine cowl tunnel and clip into position.
113. Feed up and connect the plug end of the loom into the cannon socket.
114. Clip all other ends of the loom into position and fit all loom grommets.
115. Modify and fit the inner facia panel and screw into position (see fig 11).

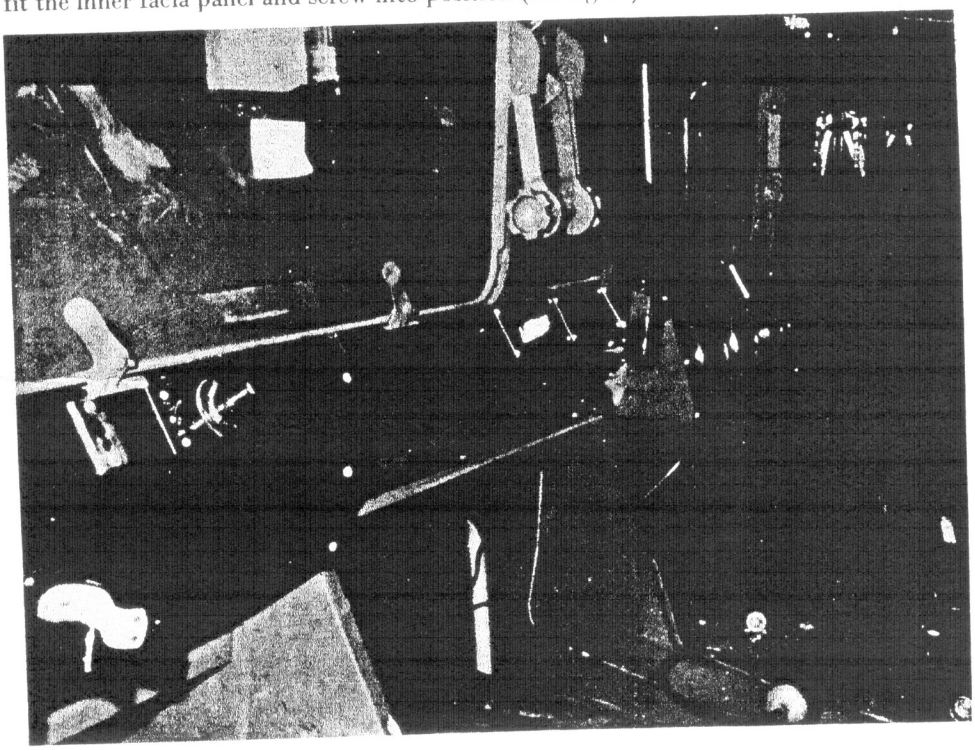


FIG. 11 – INNER FACIA PANEL

Fitting Replacement Radiator

116. Fit replacement radiator and oil cooler, 2930–66–024–9928, to the chassis only when the MK3 assembly is beyond repair. The MK3 radiator can be installed providing it is not damaged. When installing a MK3 radiator the relocating holes for the upper mounting bracket bolts are to be drilled approximately 3/4 inch to the rear. There must be a 3/8 inch clearance between the top of the radiator and the front cross piece to allow the bonnet keeper to operate.

Fitting Replacement Cab to Chassis

117. Sling the cab as per fig 12.

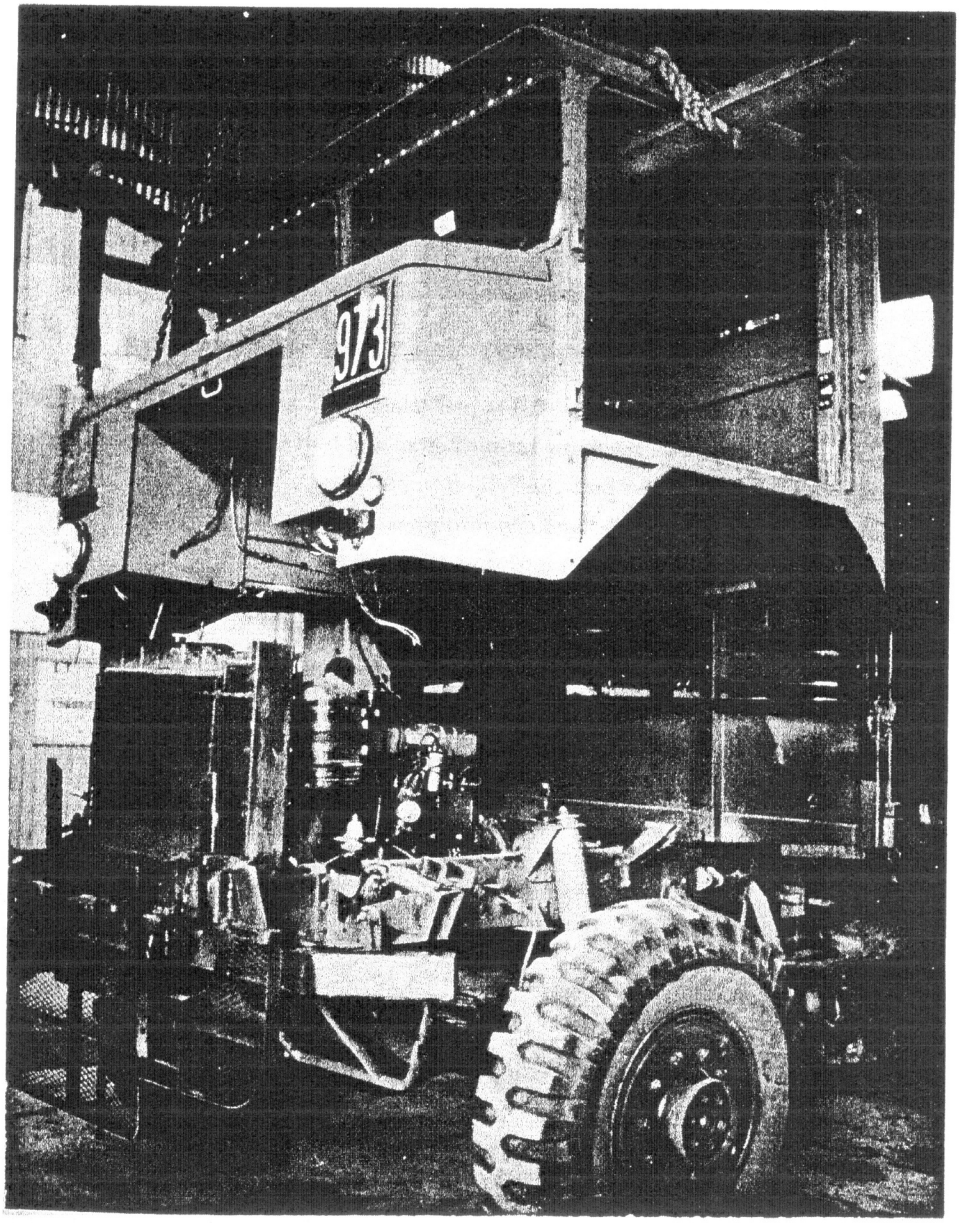


FIG. 12 -- SLINGING REPLACEMENT CAB

118. Place front cab mounting bolts in position with the front cab rubber mountings; place steering column shaft in a vertical position (see fig 13).

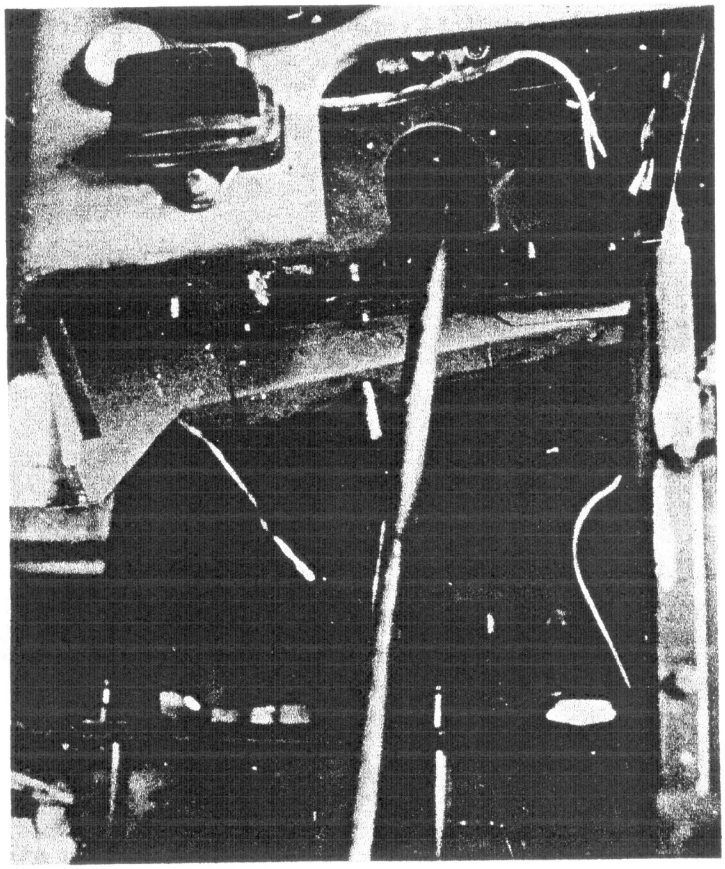


FIG. 13 – STEERING COLUMN SHAFT ENTERING CAB FLOOR

119. With two men, one on either side to guide it, lower the cab carefully into position; move the steering column shaft to clear the instrument facia panel.

120. Line up front and rear cab mounting brackets and bolts paying particular attention to the locating dowels on the bracket mounting cab front to ensure they are inserted into the chassis; lower cab on to the chassis and tighten bolts.

121. If the crane cannot be held up for lengthy periods during the fitting of the cab, the cab may be lowered on to the chassis and under each rear cab mounting place a chock of wood 6 inches long x 3 inches wide x 3 7/8 inches high until each mounting bolt is located; remove each chock by prying up the cab and then tighten the bolts to the required tension.

Cab Mounted on Chassis

122. Once the cab has been positioned on the chassis the following tasks are to be carried out:

123. Connect the speedometer cable to the speedometer.

124. Fit the two steering box set screws and the nut and bolt, but do NOT tighten or lock the tab washers at this stage.

125. Fit the steering box brace (three 5/16 inch bolts, nuts and washers) and tighten nuts.

126. Fit the steering column and the steering column brace clamps; tighten the steering box nut and bolt and the two set screws, and then lock with the tab washers.

127. Tighten the steering box upper housing clamp bolt and the steering box clamp bracket.

128. Assemble the hand control brake valve and piping, in reverse order to dismantling (see para 35 – 36).

129. Fit the steering wheel and column components in reverse order to dismantling (see paragraphs 37 to 43 inclusive).

130. Connect the three flexible rubber air hoses above the steering box.

131. Connect and hook up brake and clutch pedal return springs.

132. Drill 5/16 inch diameter clearance hole as per fig 14, remove and fit the angle bracket to locate the clutch slave cylinder flexible hose and steel pipe with a 5/16 inch bolt, nut and washer.

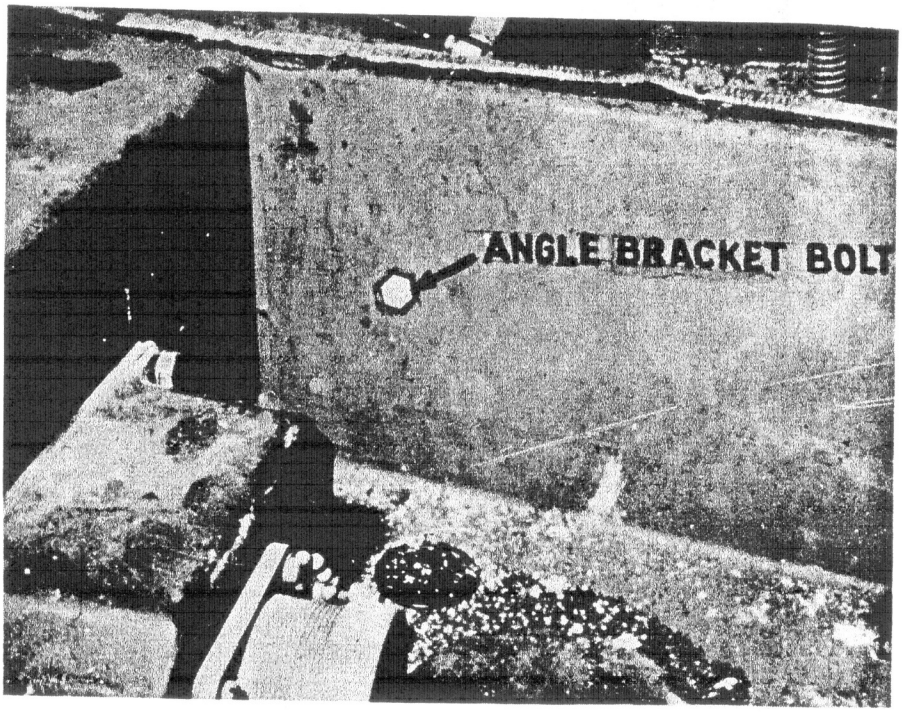


FIG. 14 — LOCATING OF MOUNTING BRACKET FOR CLUTCH SLAVE CYLINDER TUBING

133. Fit the accelerator cross shaft assembly and connect to the accelerator pedal.

134. Connect the accelerator rod to the bell crank.

135. Fit the dipper switch.

136. Connect the flexible fuel line to the fuel pump.

137. Connect up the leads for the generator, coil, oil pressure sender and the water temperature sender.

138. Connect the cab earthing strap to the chassis at the LH front cab crossmember.

139. Connect the front terminals to their connectors (light fittings).

140. Connect the handbrake rod.

141. Carry out modification as per VEH G 557–22 and connect inner and outer cable assembly for the transfer case gear lock and the PTO winch control rod assembly.

142. Fit the LH and RH floor mats, drilling new holes where necessary for the self tapping screws, using the mats as templates.

143. Fit battery, battery leads and battery retaining bracket bolts and tighten the bolts. Replace battery warning sign in battery compartment and on engine cover inside the cab.

144. Connect the three winch air valve rubber hoses to the bulkhead fittings at the rear of the cab underbody.

145. Connect the two flexible fuel hoses for the two way cock to the LH and RH steel pipes from the fuel tanks.

146. Fit the two stepped bolts connecting the remote shift rod to the gear lever.

147. Fit the lower engine cover and connect the inner and outer choke and hand throttle cables.

148. Fit the LH and RH mudguard guard piping, fender assemblies and splash guards.

149. Drill two 1/4 inch diameter clearance holes and fit the vent control bracket to the steering column brace; connect the vent control rod to the ventilator cowl (see fig 15).

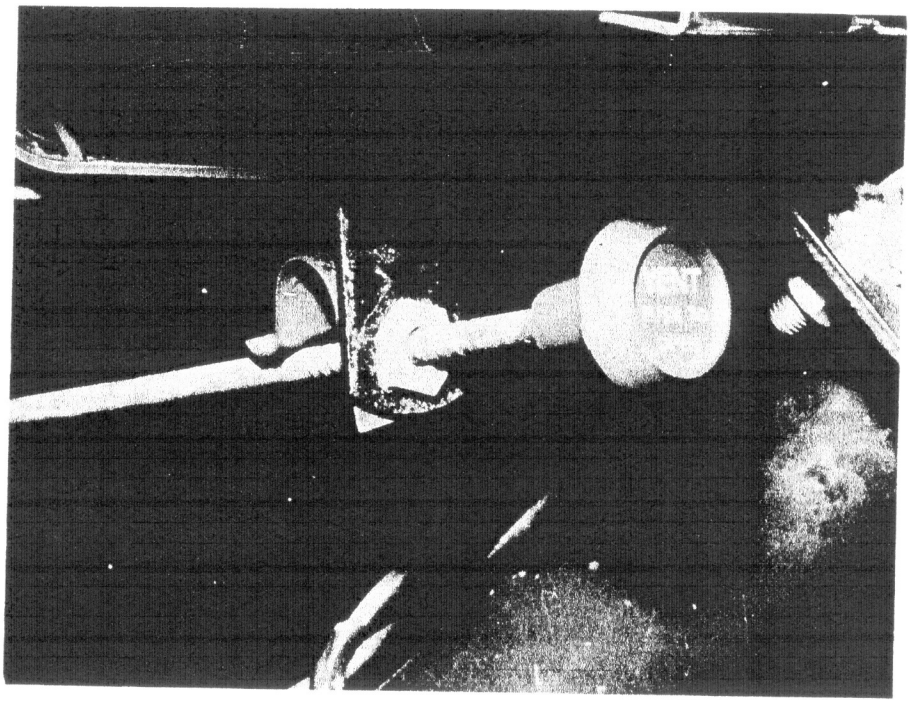


FIG. 15 – VENT CONTROL

150. Fit the LH and RH seats.

151. Fit the windscreen wiper blades and arm assemblies.

152. Clip the upper engine cover into position.

153. Check the operation of the gear lever into all gears and bend the lever as necessary to clear the upper engine cover in all gears.

154. Hang the LH and RH door assemblies in their hinges and drive in the hinge pins.

155. Check all fuel, lubricant and coolant capacities.

156. Check electrical circuits.

157. Start engine.

158. Focus and adjust headlights.

159. Carry out road test and minor adjustments as required.

160. Paint all damaged surfaces in accordance with WKSP B700.

(TSU 12/68)

END

TRUCK 2½ TON GS WITH WINCH NO 1 MK 3 AND MK 4

TRANSMISSION

BASE REPAIR

Introduction

1. This instruction details the procedure to be adopted during transmission rebuild.

2. **Stores required:**

a. 9905-66-031-8498	Plate, Modification Record, Gearbox Overhaul, Aluminium 3½ inch x 1¾ inch.	
b. 9150-66-017-9404	Molybond 122L Compound	14 oz Spray Pack.
c. 9150-66-024-5349	Molybond HE 50 Compound	16 oz Spray Pack.

3. **Stores removed:** Nil.

4. **Repair procedure:**

NOTE: *1. Cleanliness and removal of oil and grease is essential for the successful application of this compound.*
2. Do not remove the existing phosphate coating.
3. Shake the spray pack vigorously before use.

a. Thoroughly clean the bearing surface of second, third and fourth gears and the mating bearing surface on the mainshaft.
b. Coat the bearing surfaces with Molybond Compound 122L by spraying from a distance of 6 inches to 8 inches. Two applications will suffice.
c. The treated components are to be air cured for a period of two hours prior to assembly, by allowing free air circulation around them. During assembly, spray the treated surfaces with Molybond HE50 Compound.
d. The overhaul information relating to the treated transmission is to be stamped in the spaces provided on the modification plate.
e. The modification plate is to be secured to the shift housing assembly using the rear left hand bolt.

5. Transmission failures occuring after having been treated as detailed in para 4, are to be reported by Defect Incident Report (DIR). The following information is to be included in the DIR:

a. The date transmission was overhauled.
b. The workshop which performed the overhaul.
c. The date the transmission was fitted to a vehicle.
d. The miles covered by the transmission since overhaul.

(TSU 103/71)

END

TRUCKS 2-1/2 TON GS MK3 AND MK4 ALL TYPES OVERHAUL PROCEDURE FOR T35 TRANSMISSION USING IMPROVED PARTS FIELD AND BASE REPAIR

Introduction

1. This instruction details the procedure to be adopted when overhauling the transmission assembly. A number of improved parts are to be used to eliminate mainshaft breakages and gear seizures.

General

2. For ease of identification between existing and new parts, Figs 1, 2, and 3 illustrate the differences between mainshafts, second and third speed gears and thrust washers.

3. Transmission assemblies may comprise one of the following mainshaft, second and third speed gear configurations:

   a. New improved type mainshaft with existing old type second and third speed gears and thrust washers, or

   b. Existing old type mainshaft with new improved type second and third speed gears and thrust washers, or

   c. Existing old type mainshaft with existing old type second and third speed gears and thrust washers, or

   d. New improved type mainshaft with new improved second and third speed gears and thrust washers.

4. For standardization purposes the configuration described in paragraph 3d is to be used. However in emergency situations paragraph 3b is acceptable.

5. **Items Affected.** See RPS MT162 group 'EA' items 18, 25, 25a, 25b, 26, 33, 34a and 34b.

TABLE 1 – STORES REQUIRED (To be requisitioned through normal supply channels).

Item	DSN	Designation and MFR Number	Qty per Equip
1.	2420–66–093–2003	Gear, mainshaft, Second speed (863823–R21)	1
2.	2520–00–691–0659	Seal, Plain Encased, maindrive Gear Bearing	1
3.	2520–00–758–8098	Gear, mainshaft, Third speed (238610–R2)	1
4.	2520–66–018–2053	Gasket Set, Transmission	1
5.	2520–66–093–7783	Mainshaft, Transmission Assy c/w washers and snap ring (453408–C91)	1
6.	3110–00–073–3472	Bearing, Roller, Cylindrical	1
7.	3110–00–112–6331	Roller Assy, Journal Bearing, Solid Rollers, 1-1/8 in by 1-5/8 in by 1-5/8 in	2
8.	3110–00–117–0693	Bearing, Roller cylindrical 1.7310 in by 2.8346 in by 0.6693 in	1
9.	3110–00–155–6188	Bearing, Ball, Annular, Single row 45 mm by 100 mm by 25 mm	1
10.	3110–00–155–6708	Bearing, Ball, Annular, Single row, 40 mm by 90 mm by 23 mm	1
11.	3110–00–991–7538	Bearing, Ball, Annular, maindrive gear	1
12.	5330–00–226–7867	Seal, Plain, Encased, mainshaft	1
13.	5340–00–054–7422	Plug, Expansion, steel 3 in od by 0.083 in thk	1

TABLE 2 – STORES REMOVED (To be disposed of in accordance with GEN P Series).

Item	DSN	Designation and MFR Number	Qty per Equip
1.	2520–00–758–8098	Gear, mainshaft, Third Speed (238610–R1)	1
2.	2520–66–018–2052	Gear, mainshaft, second speed (863823–R1)	1
3.	2520–66–018–8825	Mainshaft, Transmission, with Snap Ring (238598–R1)	1
4.	3120–66–018–8920	Washer, Thrust, Third Speed 0.123 in thk (238606–R1)	1
5.	3120–66–018–8921	Washer, Thrust, Third Speed 0.119 in thk (238605–R1)	1
6.	3120–66–018–8922	Washer, Thrust, Third Speed 0.126 in thk (238607–R1)	1
7.	3120–66–019–0544	Washer, Thurst, 0.207 in thk Second Speed (268186–C1)	1
8.	3120–66–019–0545	Washer, Thrust, 0.205 in thk Second Speed (268185–C1)	1
9.	3120–66–019–0547	Washer, Thrust, 0.203 in thk Second Speed (268184–C1)	1

Note:

1. Item 1 of Table 2 has the same DSN as Item 3 of Table 1, manufacturer's number is different.

Detail

6. Select neutral and remove the shift bar housing.
7. Lock the transmission by selecting two gears and remove the output shaft nut and flange.
8. Remove the rear bearing retainer, oil slinger, speedometer drive gear and washer.
9. Remove the countershaft nut.
10. Unlock the transmission by selecting neutral.
11. Drive the mainshaft assembly to the rear of the case sufficiently to expose the rear bearing and snap ring. Using a suitable bearing puller remove the bearing.
12. Remove the input shaft bearing retainer and input shaft from the front of the case.
13. Tilt the front of the mainshaft upwards, remove the mainshaft and gears through the top, leaving first and reverse gear in the case.
14. Remove first and reverse gear.
15. Dismantle the mainshaft by removing the:
    a. fourth and fifth speed synchronizer assembly,
    b. fourth speed gear snap ring, mainshaft clutch gear and slide off the fourth speed gear,
    c. third speed gear snap ring, thrust washer and slide off the third speed gear,
    d. second and third speed synchronizer assembly, and
    e. second gear snap ring, thrust washer and slide off the second speed gear.
16. Remove the reverse idler shaft lock plate and using a slide hammer remove the idler shaft, followed by the reverse idler gear, bearings and thrust washers.
17. Drive the countershaft assembly to the rear of the case sufficiently to expose the rear bearing and snap ring. Using a suitable bearing puller remove the bearing.
18. Tilt the front of the countershaft assembly upwards and remove the shaft through the top of the case.
19. Remove the countershaft front bearing expansion plug snap ring and using a brass drift drive the front bearing and expansion plug from the case.
20. Discard the items listed in Table 2 including all bearings, seals, expansion plugs and gaskets. Inspect the remaining items for serviceability.
21. **Assembly of Mainshaft Using Improved Parts.** Using the items listed in Table 1 assemble the mainshaft as follows:
    a. Slide the second speed gear on to the rear of the mainshaft ensuring the oil grooves face towards the output flange end of the shaft.
    b. Fit the thrust washer (without oil grooves) and snap ring.

> **WARNING: DO NOT fit thrust washers with oil grooves to gears with oil grooves.**

    c. Slide on the second and third speed synchronizer assembly.
    d. Slide on the third speed gear with the oil grooves facing the input end of the shaft, fit the thrust washer and snap ring adhering to the previous warning.
    e. Slide on the fourth speed gear and the mainshaft clutch gear and fit a new snap ring.
    f. Slide on the fourth and fifth speed synchronizer assembly.
22. Assemble the transmission in reverse order ensuring the first reverse sliding gear is fitted with the letter 'R' facing towards the rear of the transmission.

TABLE 3 – TORQUE SPECIFICATIONS

Item	ft lbs	Nm	Item	ft lbs	Nm
Input shaft bearing retainer	30-40	40-55	Mainshaft rear bearing retainer to case	30-40	40-55
Control lever housing to shaft cover	50-70	70-95	Counter shaft lock bolt to case	30-40	40-55
Shift cover to case	30-40	40-55	Output flange nut	190-210	255-285

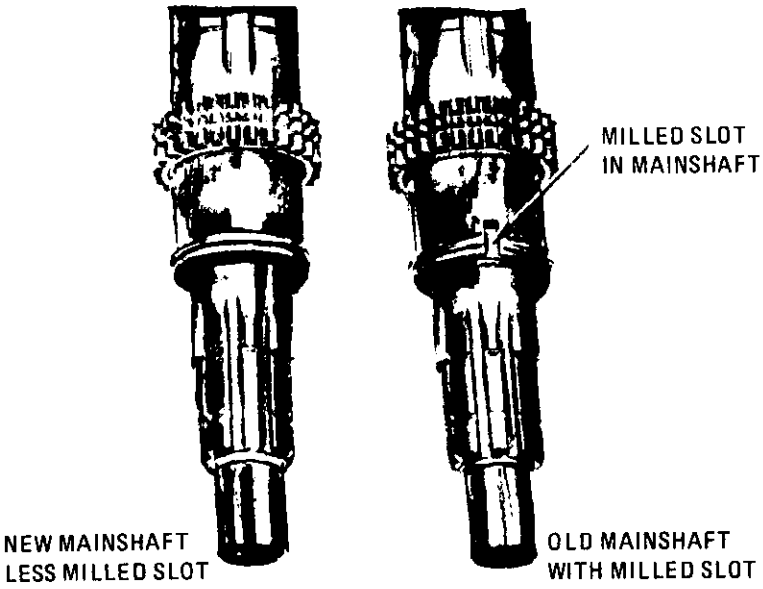


FIG 1 – MAINSHAFT WITH AND WITHOUT MILLED SLOT

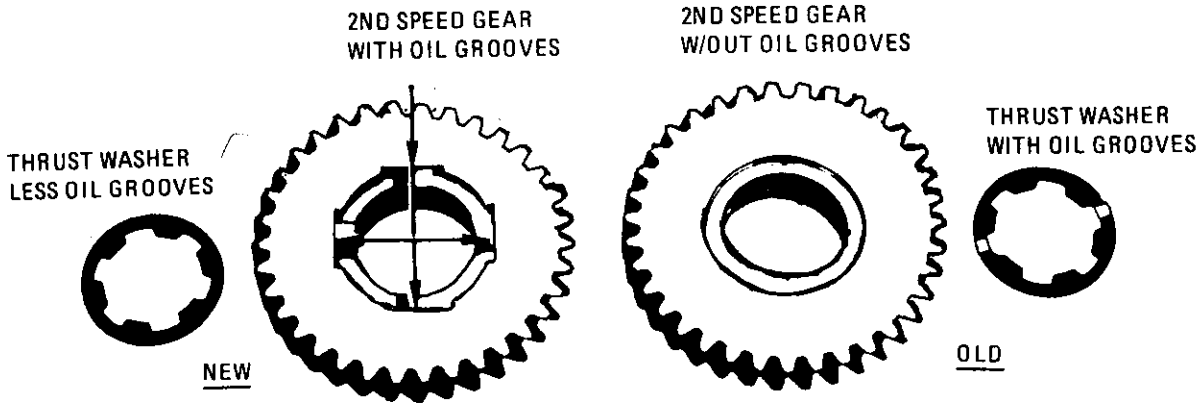


FIG 2 – 2ND SPEED GEARS WITH AND WITHOUT OIL GROOVES

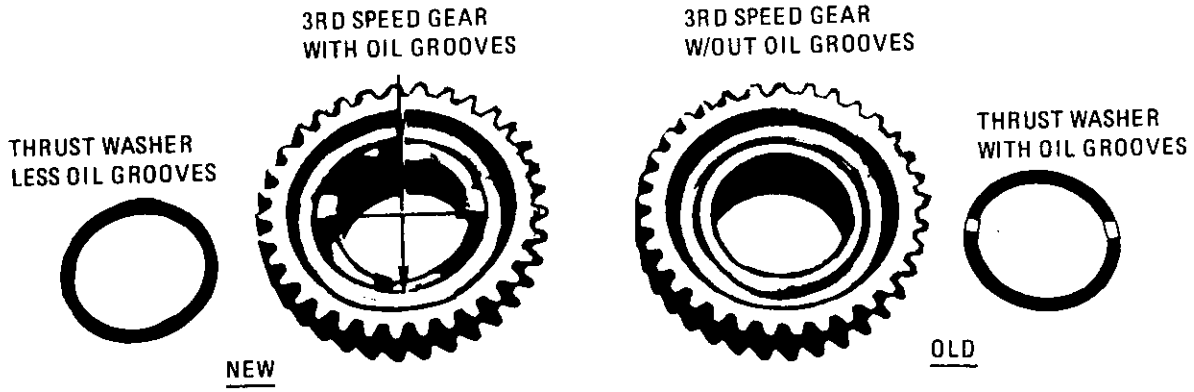


FIG 3 – 3RD SPEED GEARS WITH AND WITHOUT OIL GROOVES

END

TRUCK, CARGO, 2 1/2 TON, GS, MK3 AND MK4, ALL TYPES

MODIFICATION SUMMARY

Introduction

1. This instruction summarizes in Table 1, modification instructions that have been issued, including cancelled instructions, on the subject equipment. The EMEIs are listed in numerical sequence and recipients of subsequent instructions are to enter detail thereof.

Scope

2. Sufficient detail is included to enable the recipient to determine if the modification has been incorporated in the equipment. Reference to the detailed modification instruction will be necessary in order to carry out the modification.

3. The need for supply stores or a complete modification kit is indicated in the Stores Required column in the following manner:

a. Nil – Indicates that no stores are required.

b. Yes – Indicates that stores are to be demanded separately.

c. Kit – Indicates that a complete modification kit is required.

4. The availability of modification kits is notified in VEH A 006.

TABLE 1 – MODIFICATION INSTRUCTIONS ISSUED

Instr No	Issue	Priority Group	Modification Brief Description	Modification Plate No	Stores Required	*Man Hours	Type of Repair
G557– 1	1	1	Strengthening Handbrake Control Rods		Yes	2.0	Field
2	1	1	Repositioning Air Reservoir Safety Valve		Yes	1.0	Unit
3	2	2	Repositioning and Supporting Battery Cable		Yes	0.5	Unit
4	3	1	Fitting Mounting Frame for Electrical Equipment Shelter S141/G		Kit	5.0	Field
5	1	2	Fitting Racks Ammunition 20 Pr		Yes	4.0	Field
6	1	2	Boring Out Winch Drive Flange		Nil	2.0	Field
7	1	2	Fitting Modified Air Cleaner Bracket and Rerouting Service Lines		Yes	2.0	Unit
8	1	2	Drilling Holes in Stowage Boxes to Allow Access to Rear Spring Shackle Bolts		Yes	1.0	Unit
9			Cancelled; Rewritten as J517–3				
10	–	–	NOT PUBLISHED				
11	1	2	Fitting Support Inside Cab Roof		Yes	8.0	Field
12	1	2	Fitting Shields Under Fuel Tanks		Yes	4.0	Unit
13	1	2	Cutting Holes in Cab Floor and Fitting Sealing Grommets		Yes	4.0	Unit
14	1	2	Fitting Improved Securing Bolts to Rear Stub Axle – (Cancelled)				
15	1	2	Strengthening Cargo Body Side Panels		Yes	8.0	Field
16	1	2	Fitting Additional 3/8 inch Screws to Rear Tray Floor Angle		Yes	1.0	Unit
17	2	1	Rerouting Clutch Control Piping		Yes	5.0	Unit
18	3	1	Fitting Stronger Stub Axles		Yes	12.0	Field
19	1	2	Repositioning Horn Assembly		Yes	4.5	Field
20	2	1	Fitting Mounting Frame for Electrical Equipment Shelter S144/G		Kit	5.0	Field
21	1	1	Fitting New Type Towing Frame	1	Kit	8.0	Unit
22	1	2	Fitting Improved Lock to PTO Lever		Yes	8.0	Field
23	1	2	Repositioning of Trailer Attachment Cocks	2	Nil	1.0	Unit
24	2	2	Wiring Tail Lamps into Head and Park Light Circuits		Yes	2.5	Unit
25	1	2	Fitting New Type Rear View Mirror Head	1	Yes	0.25	Unit
26	–	–	NOT PUBLISHED				

Home again Bill

Mod Instr No	Issue	Priority Group	Modification Brief Description	Modification Plate No	Stores Required	Man Hours	Type of Repair
G557–							
27	3	2	Changing from Positive to Negative Earth		Yes	2.0	Unit
28	1	1	Fitting Lock Plates to Front Stub Axle Bolts (Cancelled)				
29	1	2	Rerouting Fuel Lines	4	Kit	9.0	Field
30	1	1	Replacement of Starter Switch	2	Yes	2.0	Unit
31	1	2	Replacement of Front Cross Member Rivets with Bolts	3	Yes	3.0	Field
32	1	2	Changing Transfer Case Shift Control to Air Operated	3	Kit	3.0	Unit
33	2	2	Clutch Return Spring	4	Kit	3.0	Unit
34	1	1	Improved Engine Cooling Fan	1	Yes	2.0	Unit
35	2	2	Fitting Bowden Cable to Oil Filler Cap		Yes	3.0	Unit
36			NOT PUBLISHED				
37			NOT PUBLISHED				
38	1	2	Fitting Armoured Protection Kit		Kit	8.0	Unit
39	1	2	Vertical Fairlead Assembly	5	Nil	1.0	Unit
40	1	2	Removal of Welds at Centre Rib of Towing Frame	6	Nil	1.0	Field
41	2	2	Support Bracket for Winch Clutch Shaft	8	Yes	1.0	Unit
42	1	2	Fitting of 2 piece Exhaust System	2	Yes	10.0	Field
43	2	1	Replace Fibre Glass Fuel Tanks with Steel Tanks	11	Yes	3.0	Field
44							

END

TRUCK, CARGO, 2 1/2 TON, GS, WITH WINCH, IHC AUST NO 1 MK 3

STRENGTHENING OF HANDBRAKE CONTROL RODS

MODIFICATION INSTRUCTION

REFERENCE:- AO in WM 22414/1.

SUMMARY

1. This instruction details the fitting of screwed yokes to handbrake control rods to overcome failure of welded yokes.

Estimated manhours to perform: 2·0

2. *Priority:* Group 1

3. *Vehicles affected:*

All subject vehicles prior to chassis serial No 305.

4. *Items affected:*

Handbrake rod and yoke assy front, rear inner and rear outer

5. *Action required:* By RAEME authorised to carry out field repair in accordance with WKSP A 850.

6. *Stores required:* Available through normal channels.

Stock No	*Designation*	*Qty per Veh*
5340-66-010-6070	CLEVIS, rod end, adjusting, clutch release	3
9510-66-011-5495	STEEL BAR, carbon, hot rolled, mild round 3/8 in dia, 62 1/2 in long	1

7. *Stores removed:* To be reduced to produce.

Welded yokes and rod rear outer

DETAIL

8. (a) Remove handbrake rod assemblies front, rear inner and rear outer.

(b) Remove yokes adjusting.

(c) Manufacture new front rod, length 62·5 in thread one end 3/8 UNF to a length of 2·2 in thread other end 3/8 UNF to a length of ·75 in.

(d) From original front rod shorten to 58·7 in to form new rear outer rod, cut thread on plain end 3/8 in ·75 in long.

(e) Shorten rear inner rod to a length of 5·1 in cut thread on plain end 3/8 UNF ·75 in long.

(f) Screw new yokes to short threaded ends of rods until thread bound.

(g) Replace yokes adjusting with lock nuts, check nominal distance of control rods:-

(i) Front 65·3 in centre to centre of clevis pins.

(ii) Rear outer 61·5 in centre to centre of clevis pins.

(iii) Rear inner 7·9 in centre to centre of clevis pins.

(h) Reassemble to vehicle and check.

E N D

TRUCK, CARGO, 2 1/2 TON, GS, IHC NO 1, MK 3

AIR RESERVOIR SAFETY VALVE

MODIFICATION INSTRUCTION

REF:- AC in WM No 22414/2.

SUMMARY

1. This instruction details the repositioning of the air reservoir safety valve to the outlet tee piece by the fitting of a cross piece.

Estimated manhours to perform: 1·0

2. *Priority:* Group 1

3. *Vehicles affected:* Prior to Chassis No 301

Subject vehicles

4. *Items affected:*

Air reservoir tank

5. *Action required:* By RAEME workshops authorised to carry out unit repair or work in accordance with WKSP A 850.

6. *Stores required:*

Stock No	*Designation*	*Qty per Veh*
4730-66-019-0870	CROSS PIPE TO TUBE, brass U/F, 1/2 in tube, NPTF 1/4 in x NPTF 3/8 in x UNF 2A, 3/4 head	1
NIV	PLUG, NPTF, 1/4 in, dry seal, IHC 444736	1

7. *Stores removed:* Reduce to produce.

TEE PIECE, elbow, pipe, 1/4 in

DETAIL

8. (a) Remove safety valve and elbow from reservoir and blank off hole with plug.

(b) Disconnect pipe unions from tee piece, remove same and fit cross in its place.

(c) Reconnect pipes and fit safety valve to cross.

E N D

AC C WKSP (5)

TRUCK, CARGO, 2½ TON, GS, WITH WINCH AUST NO 1 MK 3 REPOSITIONING AND SUPPORTING BATTERY CABLE MODIFICATION INSTRUCTION

Reference: AC in WM 22414/3.

General

1. **Introduction.** The present location of the battery-to-starter cable causes damage to the cable. This instruction details the repositioning of the cable to prevent fouling between the air cleaner and the side wall of the engine compartment.
2. **Estimated Manhours to Perform.** 0.5 (initial planning only).
3. **Priority.** Group 2. When next in LAD or wksp for repair.
4. **Modification to be Applied to.** All stocks.
5. **Item Affected.** Battery cable.
6. **Action Required.** By RAEME unit, field and base workshops in accordance with WKSP A 850.
7. **Stores Required.** Available through normal expense sources.

Item	*DSN*	*Designation*	*Qty per Equip*
1.	5305–66–013–9444	SCREW, TAPPING, THREAD FORMING, steel pan head, slotted, gimlet point, No 10 by ½ in lg	1
2.	5310–66–013–0065	WASHER, lock, spring steel, sgl turn, square section, cad plated, 3/16 in dia	1
3.	9535–66–028–8533	ALUMINIUM ALLOY SHEET (required amount ½ in by 4 in for manufacture of Clip Cable.)	1

Detail

8. Lift the bonnet and proceed as follows:
   a. Mark out and drill a No 25 hole on the right hand side of the top cross member (above air cleaner) one inch to the right of the existing nut.
   b. Fit clamp (item 3) centrally on the battery cable which runs from the battery to the solenoid.
   c. Fasten clamp to the cross member, using items 1 and 2.
   d. Adjust cable to ensure that no further fouling can occur.

END

TRUCK, CARGO, 2 1/2 TON, GS, NO 1 MK 3, IHC

ELECTRICAL EQUIPMENT SHELTER S141/G - MOUNTING FRAME

MODIFICATION INSTRUCTION

REFERENCE:- *AC in WM No 22414/36.*

NOTE:- *This instruction supersedes previous issues, all copies of which are to be destroyed. It has been completely revised.*

SUMMARY

1. This instruction details the fitting of a mounting frame to the tray body for securing the equipment shelter to the vehicle.

Estimated manhours to fit: 5·0

2. *Priority:* Group 1

3. *Vehicles affected:*

Subject vehicles, with AHQ authority.

4. *Items affected:*

Tray and chassis members

5. *Action required:* By RAEME workshops authorised to carry out field repair or work in accordance with WKSP A 850.

6. *Stores required:* (Availability of stores to be notified in VEH A 006-1).

Item No	*Stock No*	*Designation*	*Qty per Veh*
1	2540-66-027-2684	MODIFICATION KIT, ELECTRICAL EQUIPMENT SHELTER, S141/G comprising:-	
	NIC	BOLT, MACHINE, UNF, 2A, SAE grade 5 steel, hex hd, zinc coated, 7/16 in by 2 1/2 in lg	2
	5306-66-019-3886	BOLT, MACHINE, UNF, 2A, SAE grade 5 steel, hex hd, zinc coated, 7/16 in by 4 in lg	10
	NIC	BOLT, MACHINE, UNF, 2A, SAE grade 5 steel, hex hd, zinc coated, 7/16 in by 5 in lg	2
	NIC	FRAME ASSEMBLY, manufactured to ADE(V)109-2C	1
	5310-66-019-3959	NUT, PLAIN, HEXAGON, UNF, 2B, steel, formed, zinc coated, 7/16 in	14
	5310-66-016-8929	WASHER, FLAT, steel, rd, zinc coated, 7/16 in bolt size	10
	5310-66-016-5994	WASHER, LOCK, spring steel, single turn, rectangular section, cad plated, 7/16 in bolt size	14
		If required -	
2	NIC	SCREW, MACHINE, UNC, flat csk with hex socket head, cad plated, 3/8 in by 1 1/4 in lg	8
3	NIC	SCREW, MACHINE, UNC, flat csk with hex socket head, cad plated, 3/8 in by 2 in lg	4

DETAIL

7. a. Position the frames, RH and LH, on the tray body, RH and LH rear corner brackets attached, as shown in fig 1.

b. Using the frame as a template mark the position of the 7/16 inch holes in the tray body.

c. Remove frames, drill 1/2 inch diameter hole through decking, cross members and LH and RH tool boxes in positions marked.

d. Replace frames and bolt in position.

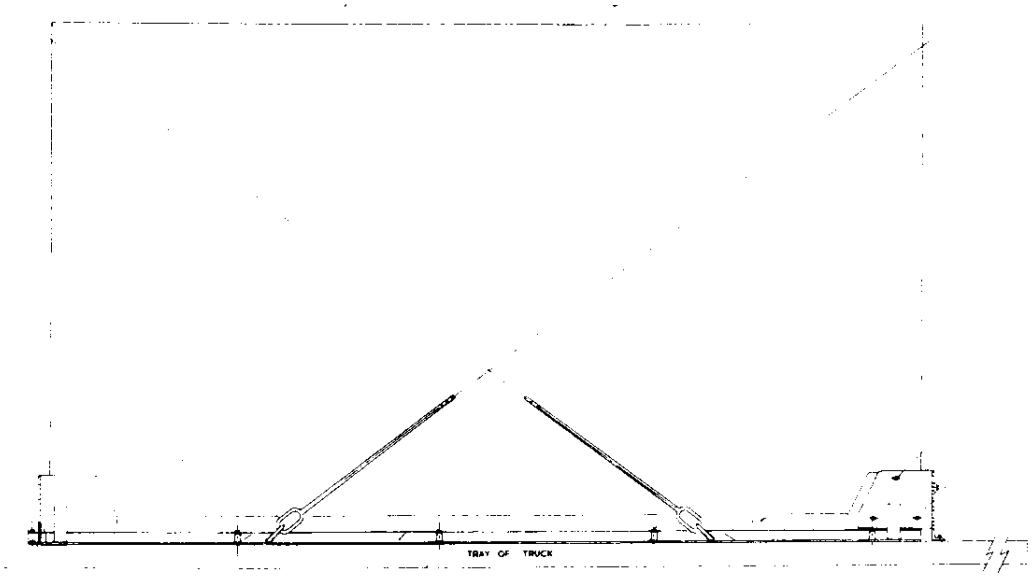
e. Fit front and rear cross straps as shown in fig 1.

f. If necessary, before mounting shelter remove three protruding 3/8 inch set screws from each bottom corner, countersink holes and replace with items 2 and 3 (para 6).

REMARKS

8. On completion of the modification the vehicle will become:-

"TRUCK, Cargo, 2 1/2 Ton GS, Signal Shelter, Large - Census Code No 6108B"



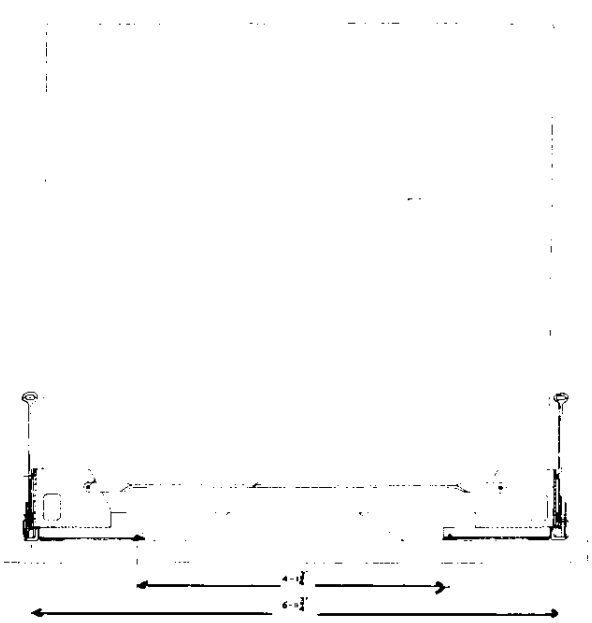


FIG 1 - MOUNTING FRAME

E N D

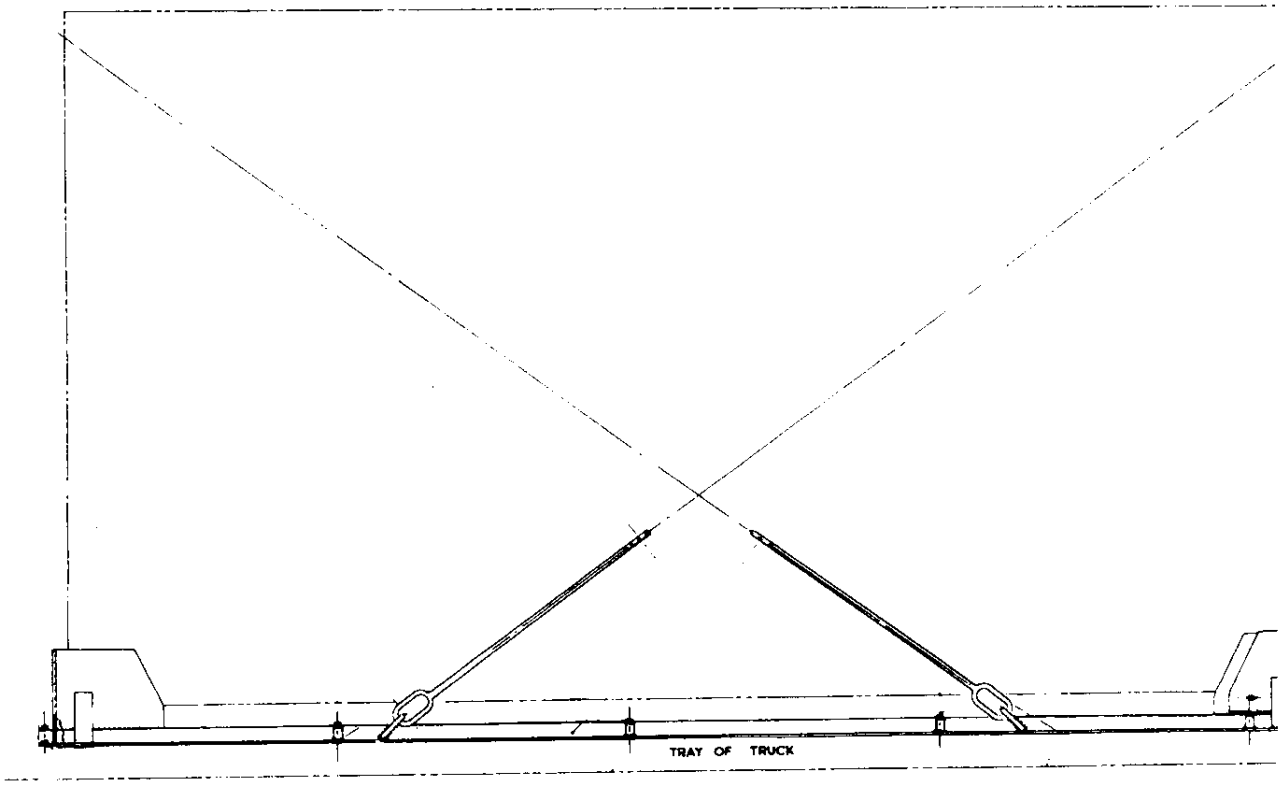
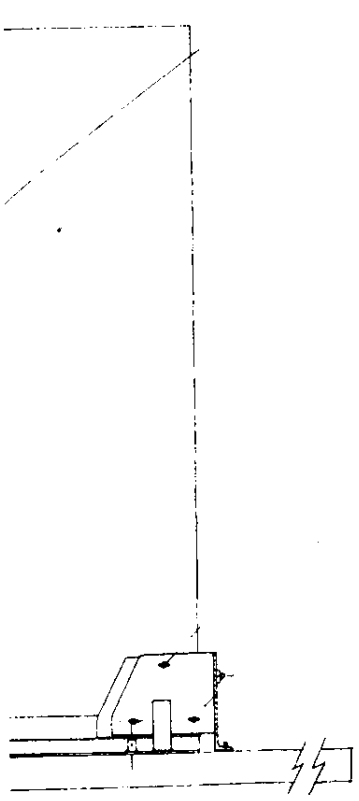
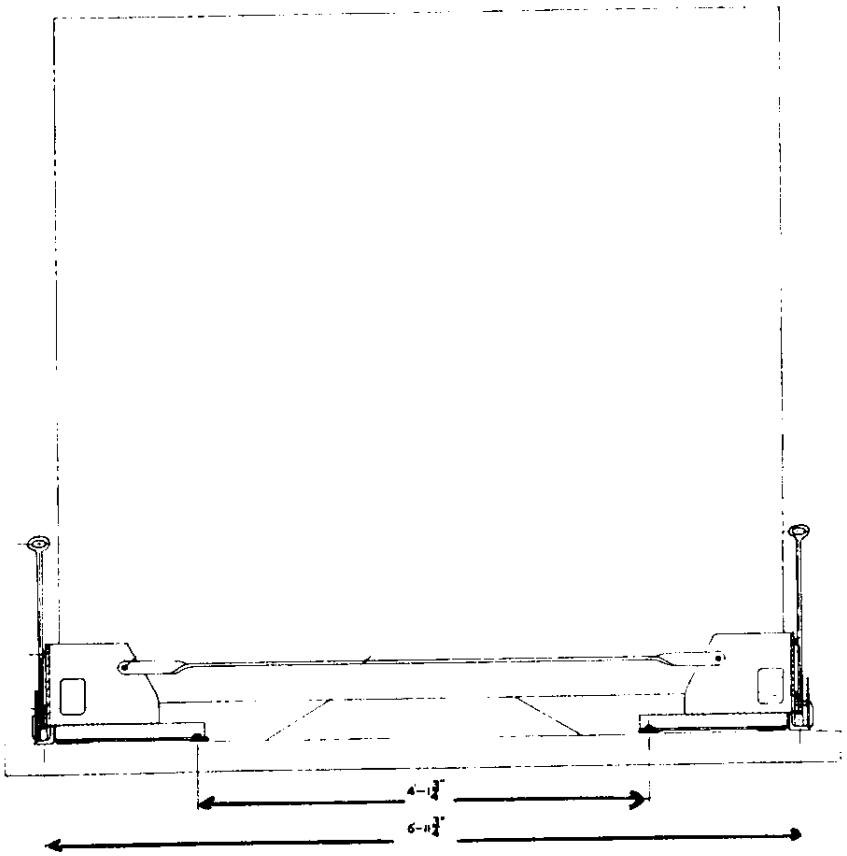


FIG 1 -





3 1 - MOUNTING FRAME

E N D

TRUCK, CARGO, 2 1/2 TON, GS WITH WINCH, AUST, NO 1, MK 3

FITTING OF RACKS, AMMUNITION, 20 PR

MODIFICATION INSTRUCTION

REFERENCE:- AC in WM No 22414/6.

SUMMARY

1. This instruction details the fitting of Racks, Ammunition, 20 Pr to the above equipment for transportation of ammunition.

Estimated manhours to perform: 4·0

2. *Priority:* Group 2

3. *Modification to be applied to:* Subject vehicles as detailed by AHQ.

4. *Action required:* By RAEME field and base workshops in accordance with WKSP A 850.

5. *Stores required:* To be demanded through normal RAAOC channels.

Stock No	*Designation*	*Qty per Eqpt*
2590-66-010-5657	RACKS, ammunition, 20 pr	8
2590-66-010-5656	RAIL, ammunition rack, 125 3/4 inch	4
5306-66-019-3924	BOLT, machine, UNC 2A SAE Grade 5 steel, hex hd, zinc coated, 3/8 inch by 1 1/2 inch	16
5310-66-016-5995	WASHERS, lock, spring steel, single turn square section, cadmium plated, 3/8 inch bolt size	16
5310-66-019-3967	NUT, plain, hexagon, UNC, 2B, steel, formed, zinc coated, 3/8 inch	16
5310-66-014-2897	WASHER, flat, round, steel, cadmium plated, large, 4 BA, 3/8 inch OD, 0·04 inch thick	2

6. *Stores removed:* To be reduced to produce.

Stock No	*Designation*	*Qty per Eqpt*
5306-66-014-2943	BOLT, square neck, BSW steel black unmachined, csk hd w/sq nut, 3/8 inch x 1 1/2 inch	8

DETAIL

7. Fig 1 details the dimensions for fitting Racks, Ammunition to vehicle.

(a) Assemble Racks, Ammunition, 20 Pr to Rails, Ammunition Rack in sets of four, fronts to face the same direction.

(b) Position ammunition rack assemblies on either side of vehicle body tray, with outside fixing rail 2 1/2 inches from body sides, and with the ends 3 3/4 inches from front of the body.

(c) On the inside rails remove existing bolts, square, neck, BSW steel black unmachined csk hd w/sq nut from body tray at distances of 6 5/8 inch, 63 inches, 95 5/8 inches and 128 3/8 inches from front of body.

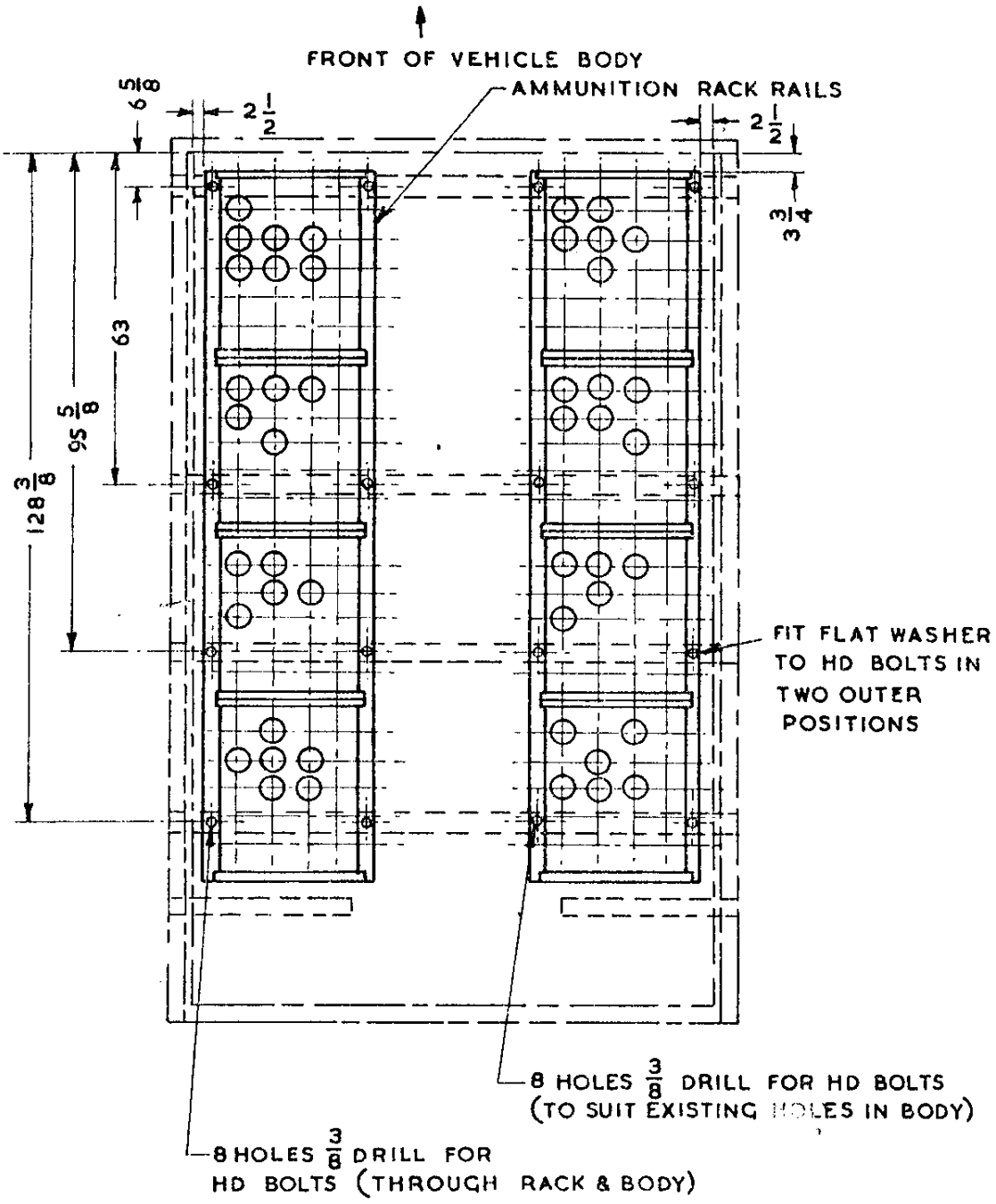
(d) Drill inside fixing rails to line up with existing holes.

(e) Drill outside fixing rails, floor boards, and steel cleats below, at distances of 6 5/8 inches, 63 inches, 95 5/8 inches and 128 3/8 inches from front end of body.

(f) Fit 3/8 inch bolts to all holes to secure Rails, Ammunition Rack to body floor.

(g) After tightening down Rails, Ammunition Rack to vehicle body tray, Racks Ammunition 20 Pr will be tightened to Rails, Ammunition.

NOTE:- At 95 5/8 inches on outside rails a large flat washer will be fitted on underside of tray body.



DIMENSIONS ARE IN INCHES

FIG 1 - DIMENSIONS FOR FITTING RACKS AMMUNITION 20 PR

E N D

TRUCK, CARGO, 2 1/2 TON, GS, WITH WINCH, IHC, NO 1 MK 3

WINCH DRIVE FLANGE

MODIFICATION INSTRUCTION

REFERENCE:- *AC in WM 22414/7.*

SUMMARY

1. This instruction details the boring out of the winch drive flange to prevent it seizing on the drive flange.

Estimated manhours to perform: 2·0

2. *Priority:* Group 2

3. *Vehicles affected:*

All subject vehicles except those with "A" stamped on the drive flange.

4. *Item affected:*

Winch drive flange

5. *Action required:* By RAEME authorised to carry out field repair in accordance with WKSP A 850.

DETAIL

6. (a) Remove winch drive flange from worm shaft.

(b) Rebore the flange to 1·503 + ·002 inch diameter.

(c) Stamp "A" on the flange exterior (approximately 1/2 inch high letter).

(d) Replace flange on the worm shaft and reassemble.

E N D

TRUCK CARGO 2 1/2 TON GS, WITH WINCH, (AUST) NO 1, MK 3

AIR CLEANER BRACKET

MODIFICATION INSTRUCTION

Amendment

1. Para 6, Stores required:-

Amend Stock No "2940-66-023-6025"

To read "2940-66-023-1917"

2. On completion of the above amendment this page 0 is to be filed in front of the EMEI.

E n d

TRUCK CARGO 2 1/2 TON GS WITH WINCH AUST NO 1 MK 3

STOWAGE BOXES

MODIFICATION INSTRUCTION

REFERENCE:- AC in WM No 22414/9.

SUMMARY

1. This instruction details the drilling of a hole in the left and right hand stowage boxes to allow easy access to rear spring shackle bolts.

Estimated manhours to perform: 1·0

2. *Priority:* Group 2

3. *Vehicles affected:*

All subject vehicles prior to Chassis Number 1208.

4. *Items affected:*

Boxes stowage

5. *Action required:* By RAEME units authorised to carry out unit repair or work in accordance with WKSP A 850.

6. *Stores required:* Available through normal channels.

Stock No	*Designation*	*Qty per Veh*
5325-66-022-7009	GROMMET rubber, 1 5/8 in OD groove	2

7. *Stores removed:*

Nil.

DETAIL

8. (a) Mark out and drill hole as detailed in fig 1.

(b) Remove all burrs and sharp edges.

(c) Paint in accordance with WKSP B 700.

(d) Fit grommet.

BOX STOWAGE L.H. ASS'Y DRAWN
R.H. OPP. HAND

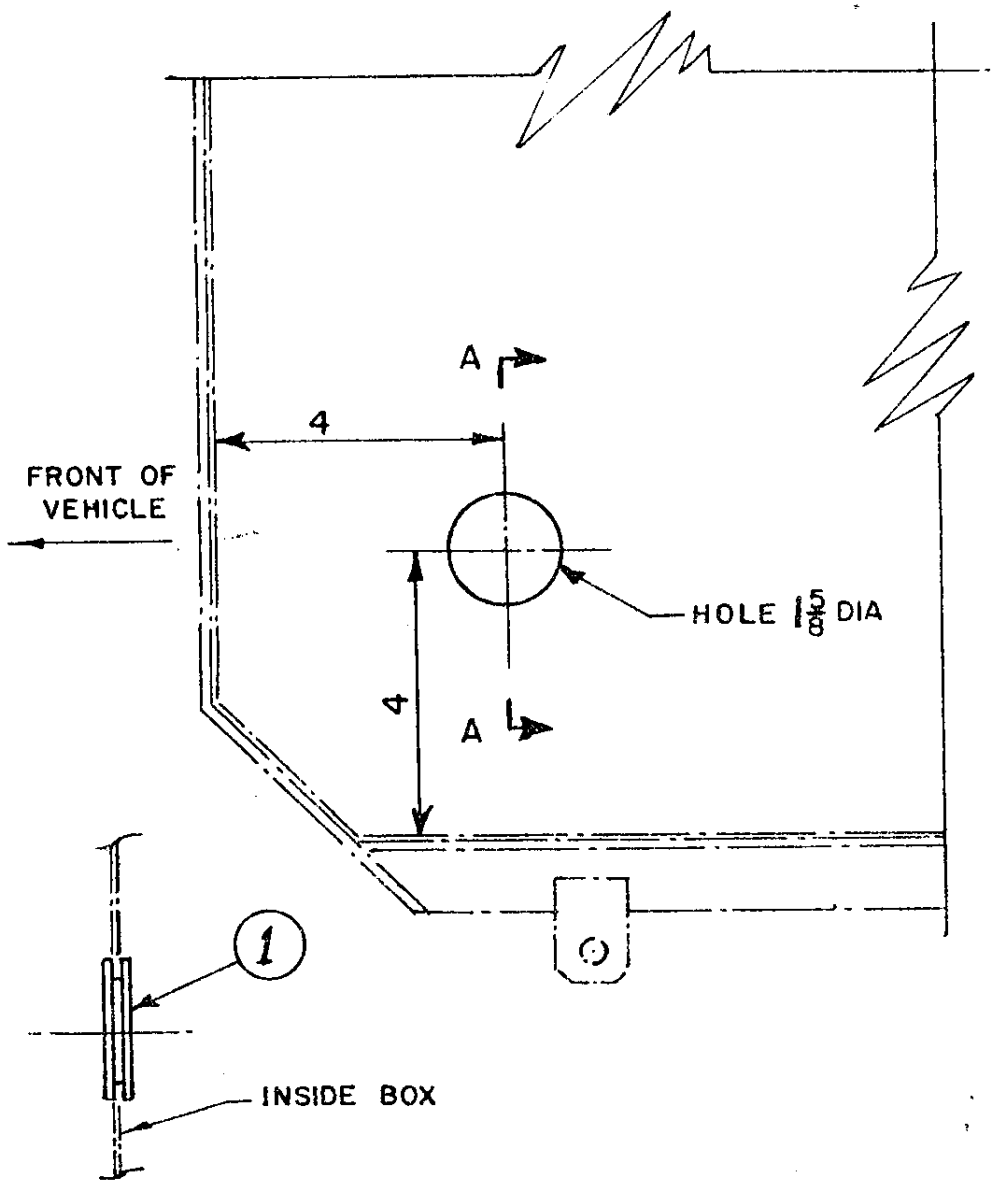


FIG 1 - TOOL BOX MODIFICATION

E N D

TRUCK CARGO 2 1/2 TON GS WITH WINCH AUST NO 1 MK 3

CAB ROOF SUPPORT

MODIFICATION INSTRUCTION

REFERENCE:- *AC in WM No 22414/11.*

SUMMARY

1. This instruction details the fitting of a support inside the cab roof to overcome excessive flexing of the roof and spot weld failure.

Estimated manhours to perform: 8.0

2. *Priority:* Group 2

3. *Vehicles affected:*

All subject vehicles.

4. *Items affected:*

Cab roof

5. *Action required:* By RAEME units authorised to carry out field repair and in accordance with WKSP A 850.

6. *Stores required:* (Available through normal channels).

Item No	*Stock No*	*Designation*	*Qty per Veh*
1	5306-66-010-6168	BOLT, MACHINE, UNF, 2A, 'R' steel, hex hd, zinc coated, 1/4 in x 1 in	8
2	5310-66-015-5872	WASHER, LOCK, spring steel single turn, square sec, cad plated, 1/4 in bolt size	3
3	5310-66-012-6847	WASHER, flat, steel, rd, zinc coated 1/4 in	9
4	2540-66-023-0829	SUPPORT ASSEMBLY, ROOF	1
5	5310-66-010-7421	NUT, PLAIN, HEXAGON, UNF, 2B fit, 'A' steel, zinc coated	2
6	8030-66-014-7568	CAULKING COMPOUND, marine	1/4 lb

7. *Stores removed:* (Reduce to produce).

NIC ADE(V)225-740 PLATE, tread, assembly (fig 2)
NIC ADE(V)225-737 BRACKET, mounting, front (fig 3)
NIC ADE(V)225-738 BRACKET, mounting, rear (fig 4)
NIC ADE(V)225-739 BRACKET, mounting, centre (fig 5)

DETAIL

8. a. Remove plate tread assembly.
b. Remove the mounting brackets with minimum of damage to cab roof (by drilling of spot welds). All damage to be repaired and welded.
c. Locate roof support, item 4, on the centre line on the inside of cab roof (fig 1).
d. Using the support as a template drill eight 1/8 inch diameter holes.
e. Remove support and open up holes to 3/8 inch diameter.
f. Reposition support in required position and retain with items 1, 2, 3 and 5 (fig 2). Place a liberal quantity of caulking compound under item 3 before tightening.
g. Paint inside and outside of cab roof in accordance with WKSP B 700.

NOTE:- As from Chassis No 1213, tread plate and mounting brackets were deleted in production.

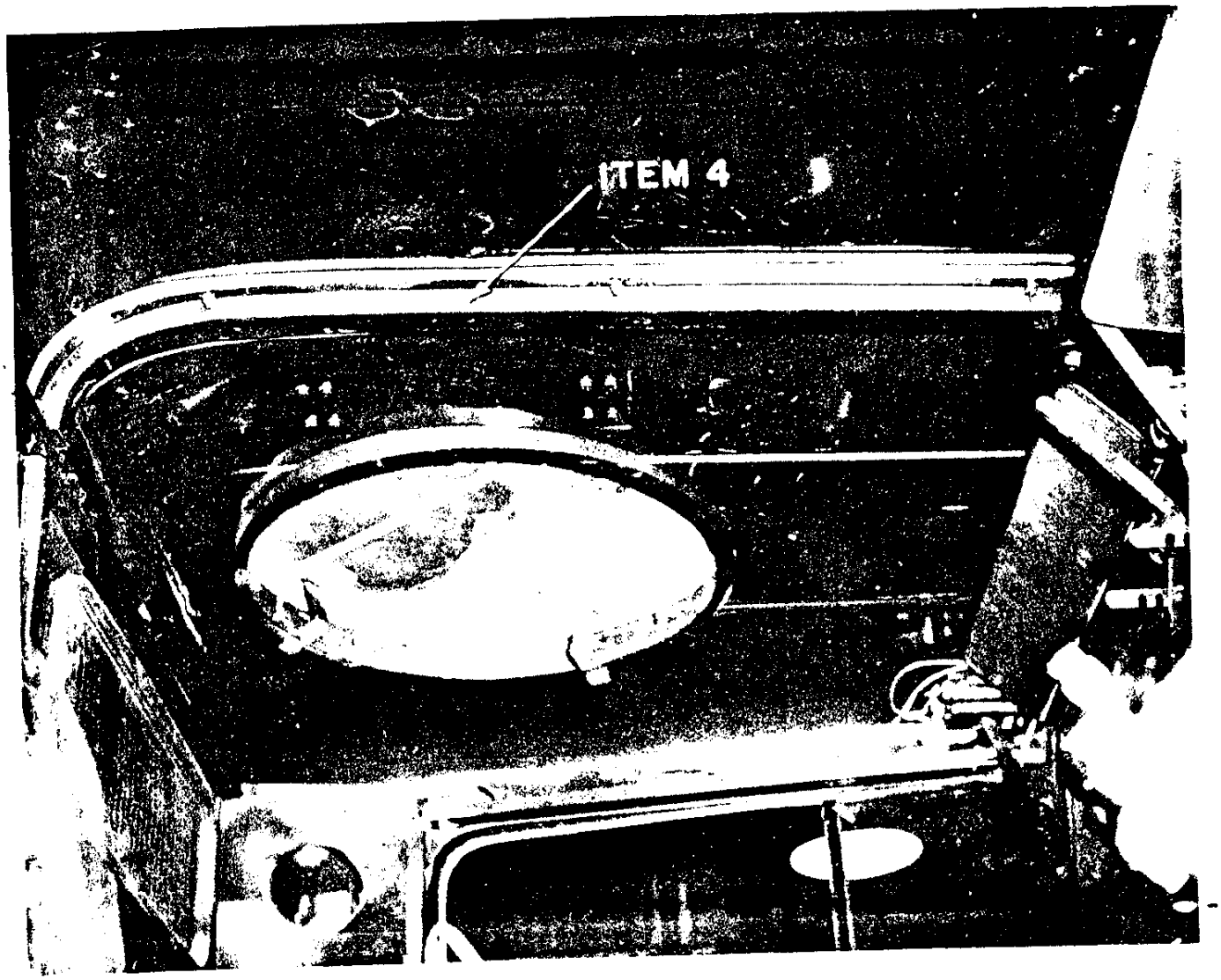


FIG 1 - POSITION OF ROOF SUPPORT

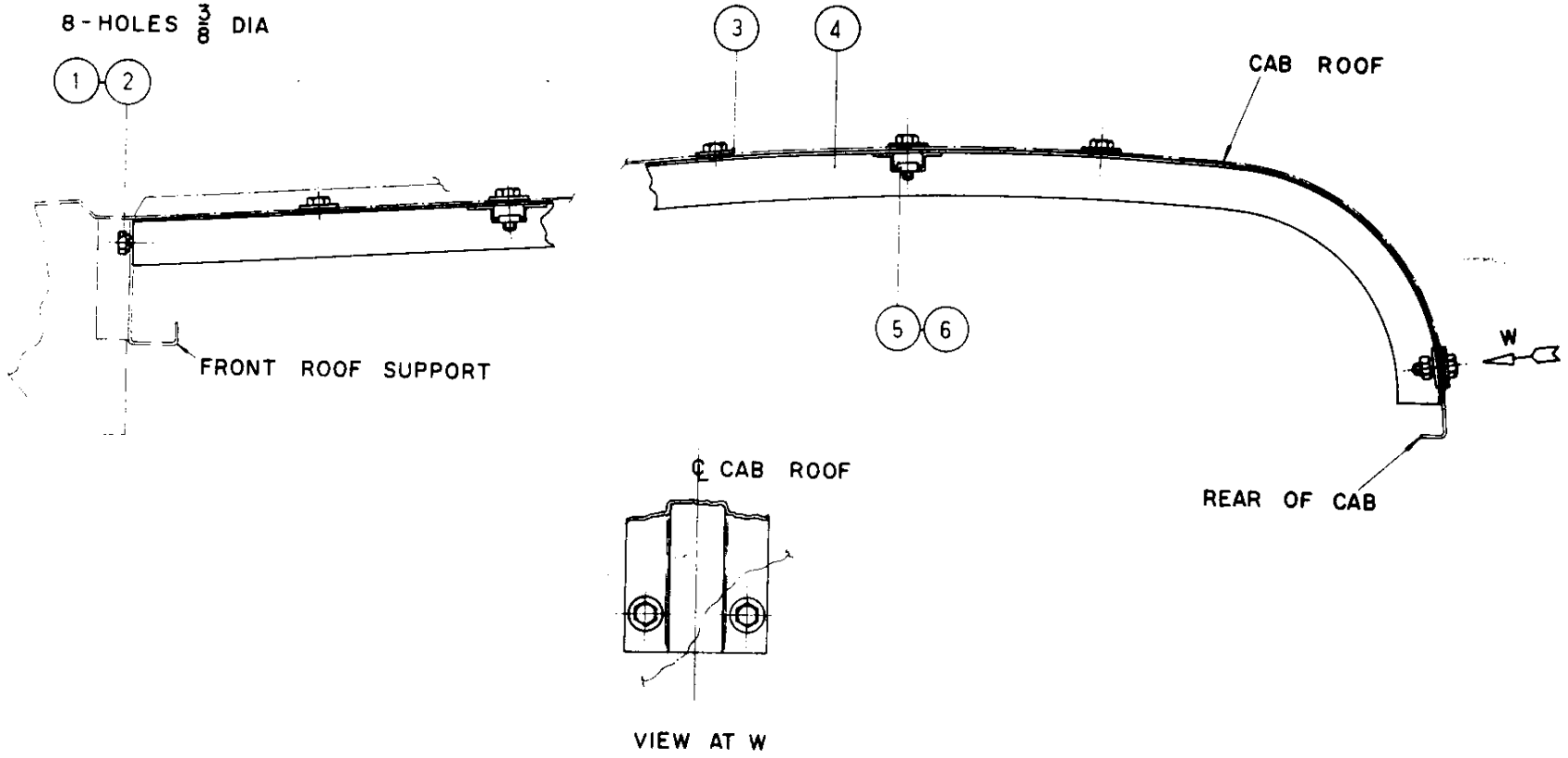


FIG 2 - ATTACHING ROOF SUPPORT

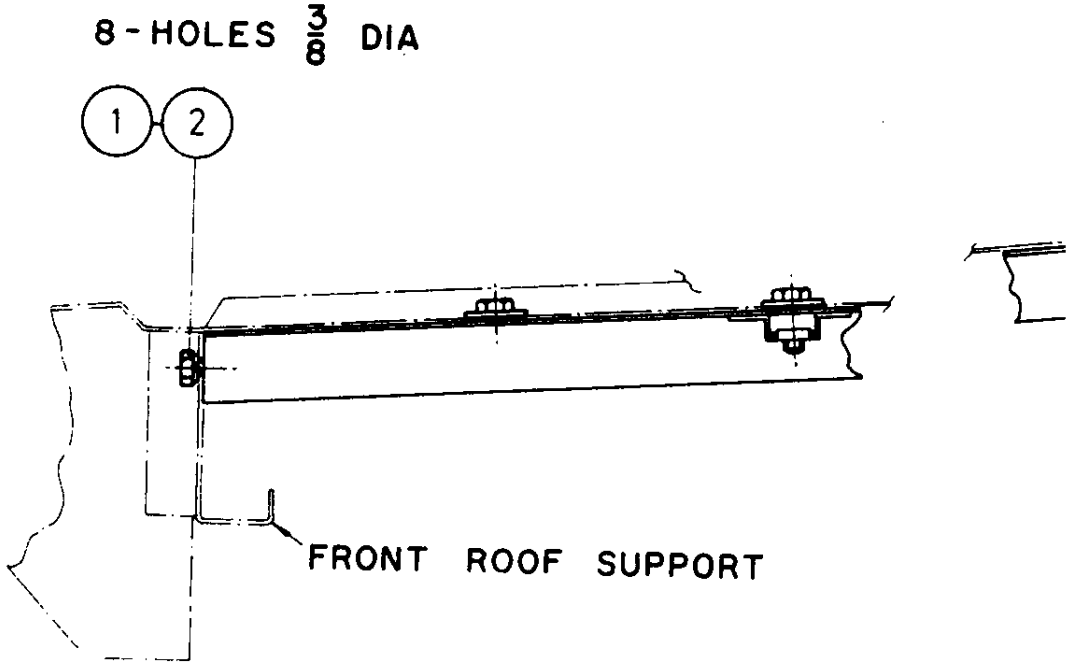
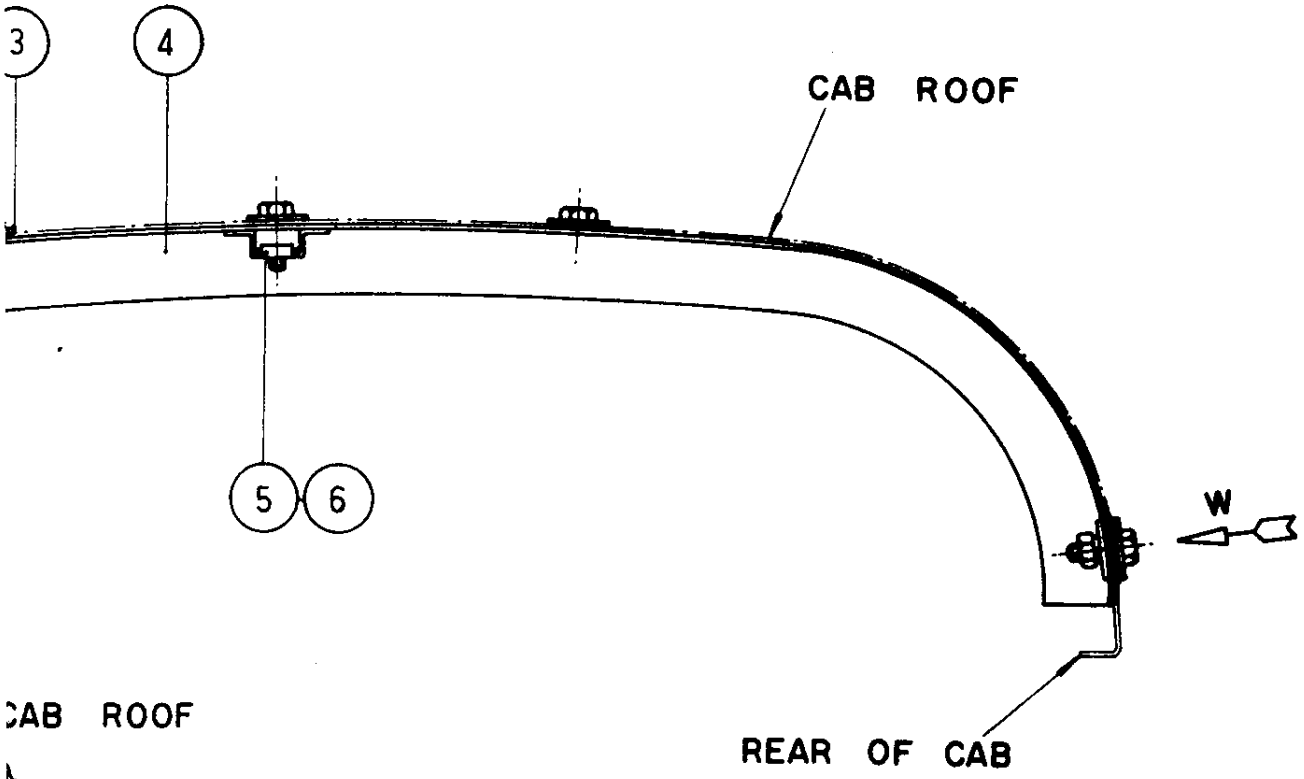


FIG 2



CAB ROOF

T W

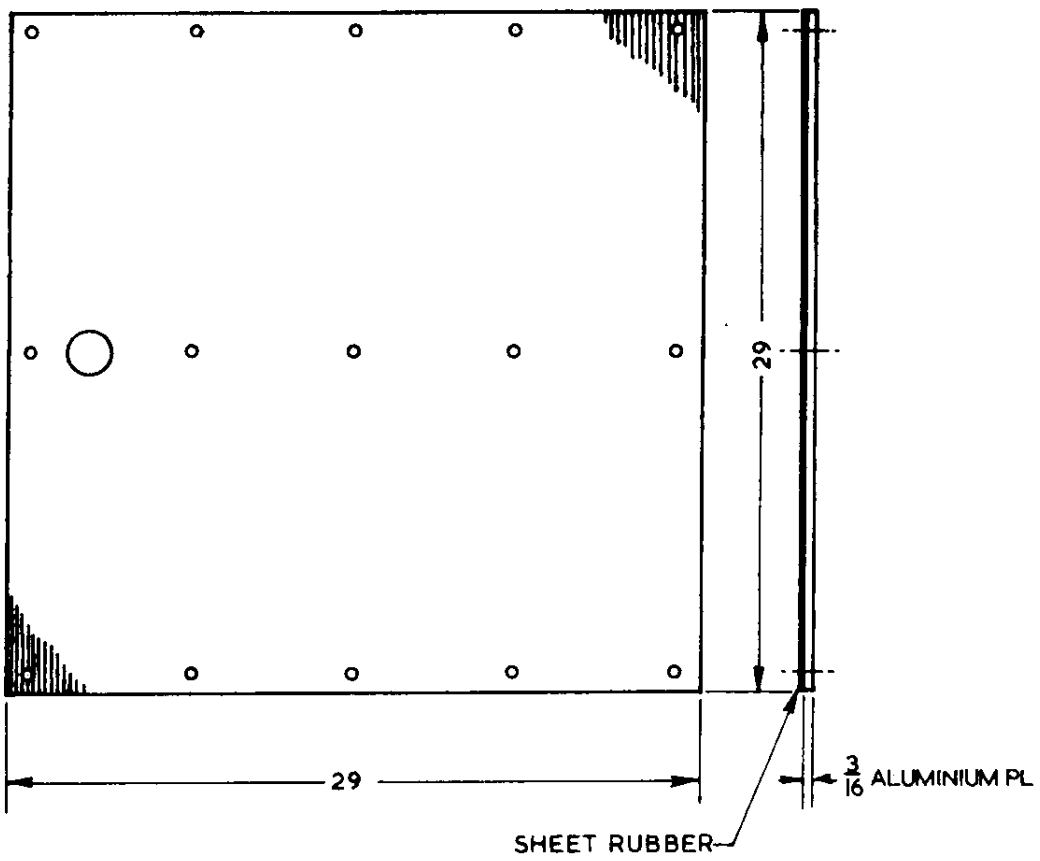


FIG 3 - DISCARDED TREAD PLATE

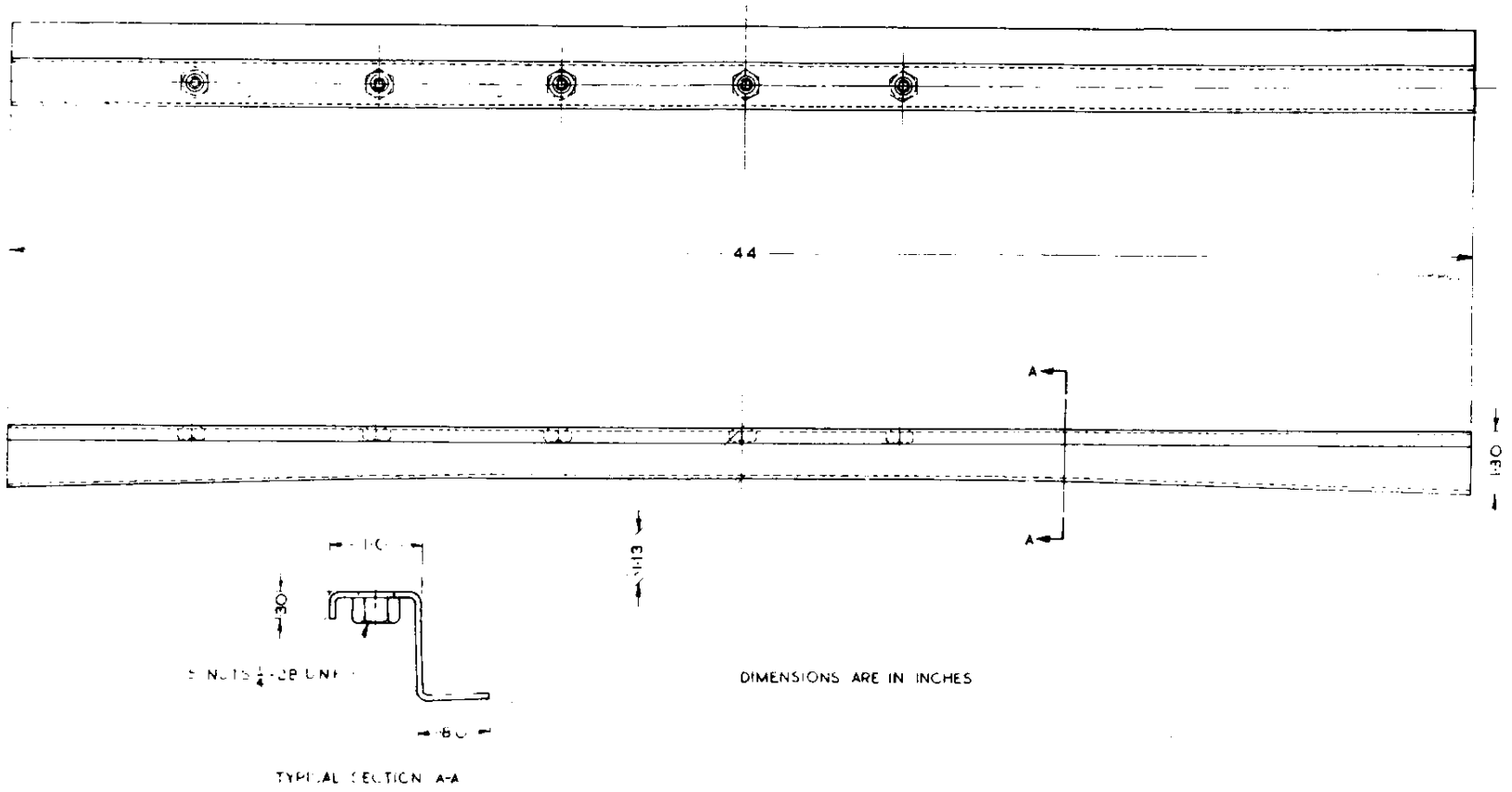
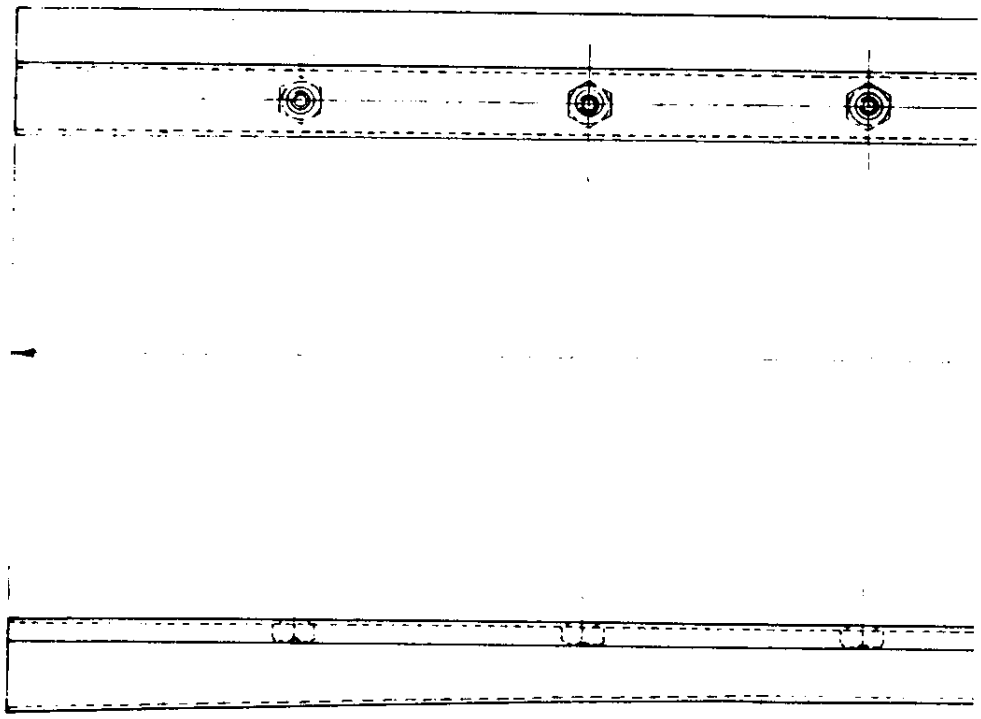
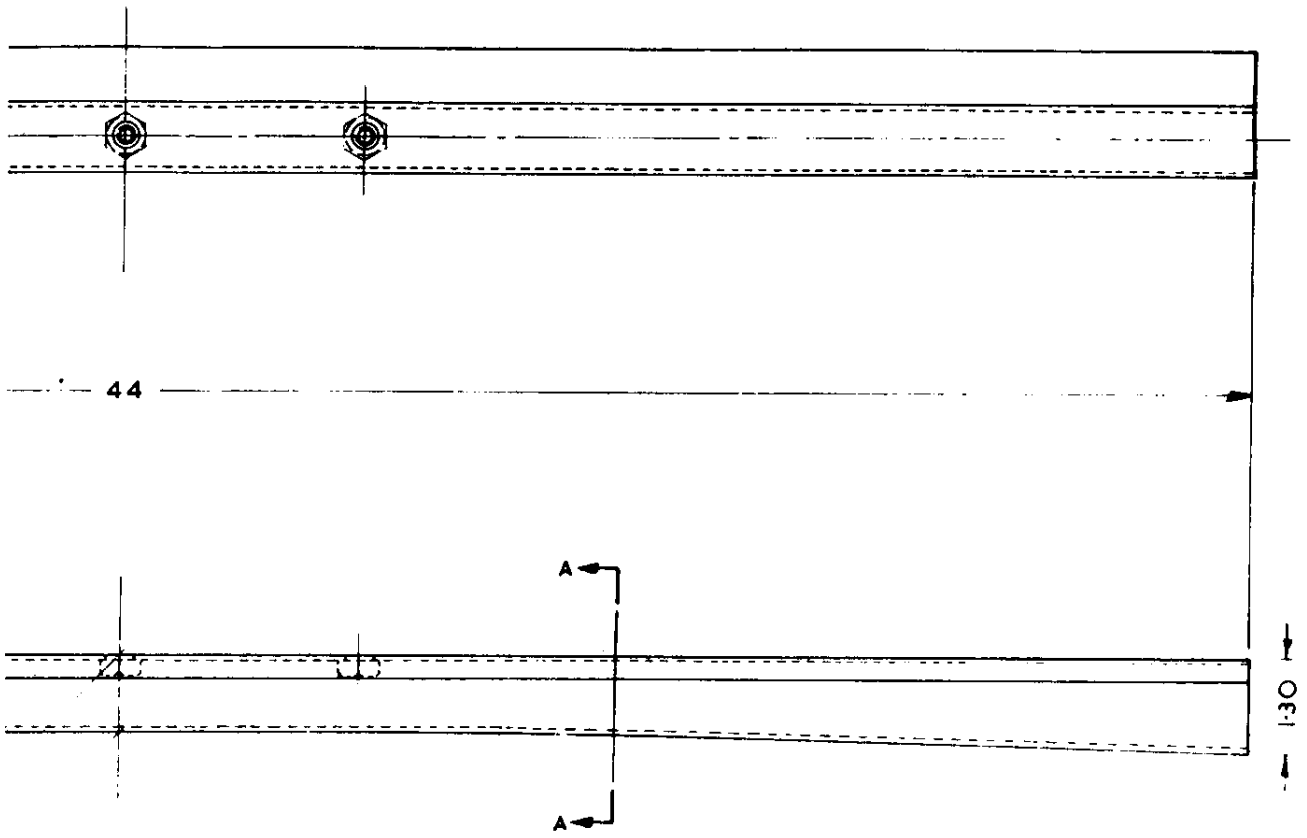


FIG 4 - DISCARDED BRACKET MOUNTING FRONT



TYPICAL SECTION A-A

FIG 4 - DIS



DIMENSIONS ARE IN INCHES

ED BRACKET MOUNTING FRONT

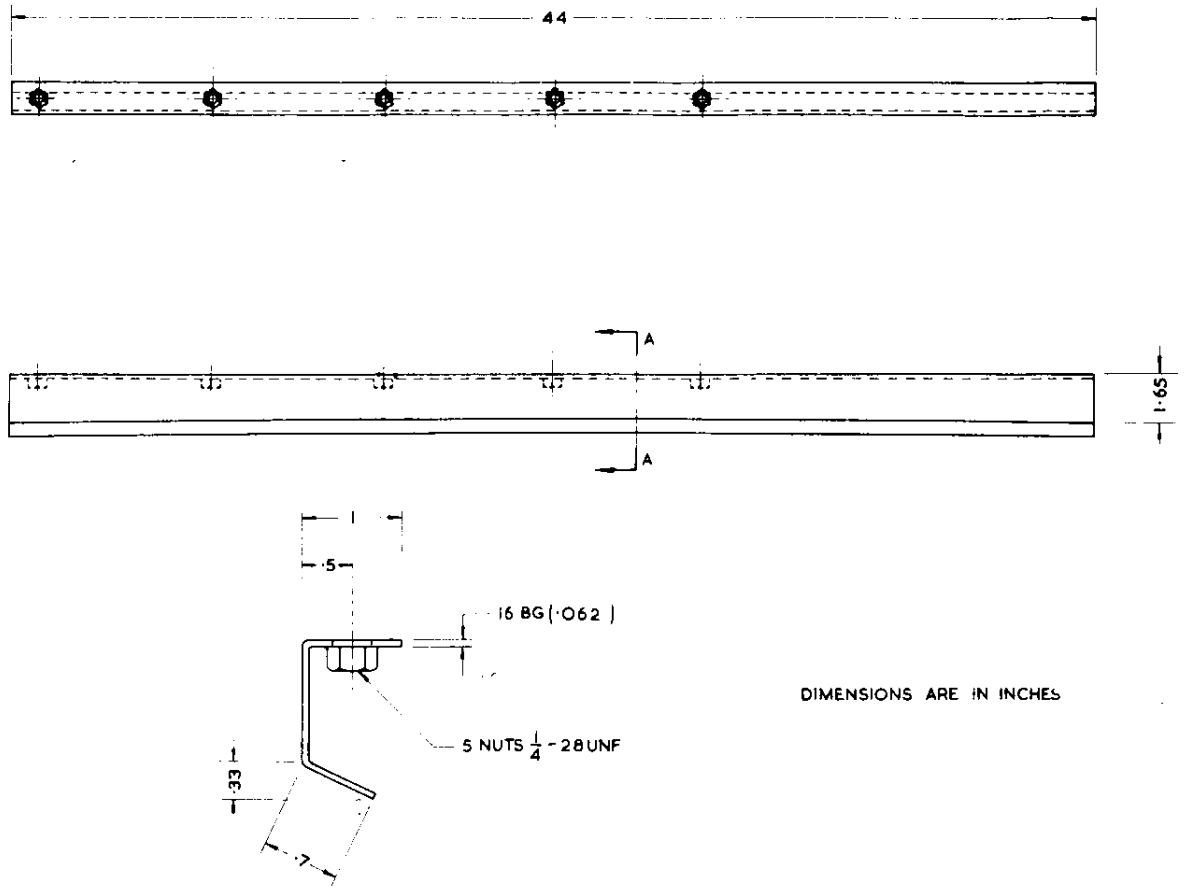
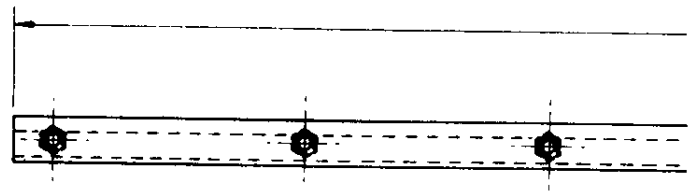
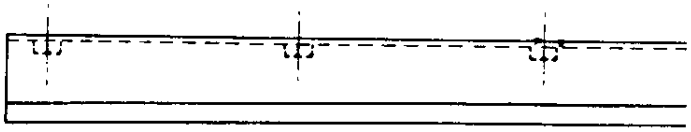
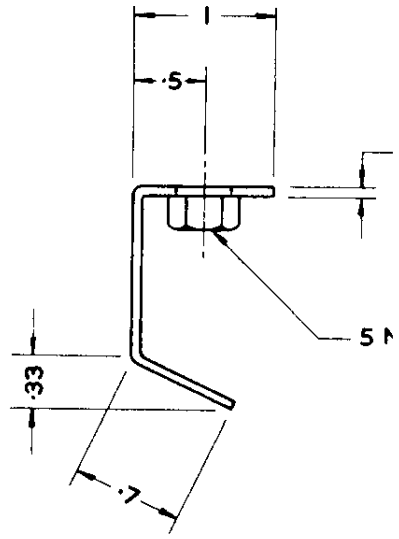


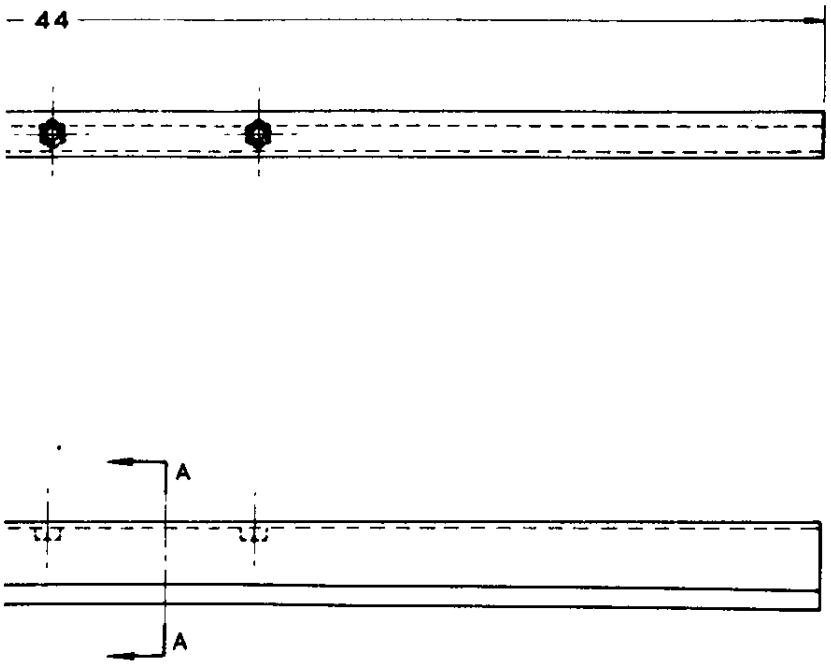
FIG 5 - DISCARDED BRACKET MOUNTING REAR







TYPICAL SECTION A-A



BG(·062)

DIMENSIONS ARE IN INCHES

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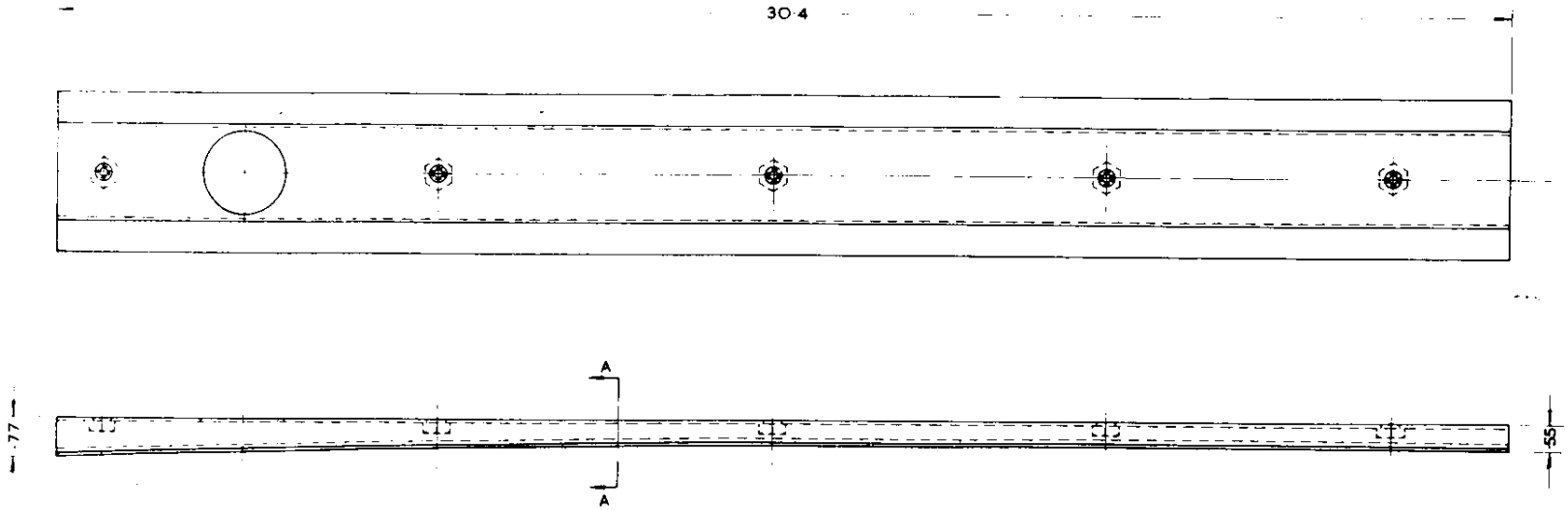
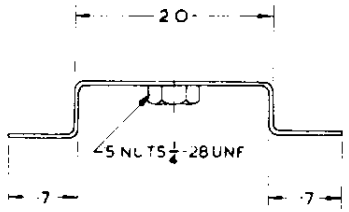
ARDED BRACKET MOUNTING REAR





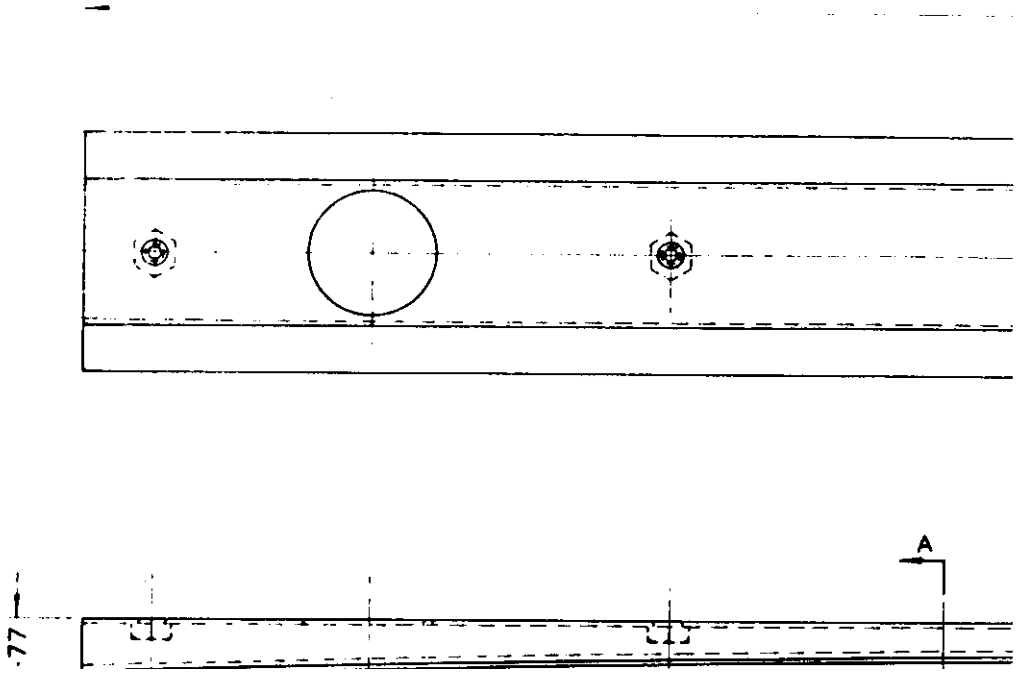
TYPICAL SECTION A-A

DIMENSIONS ARE IN INCHES

FIG 6 - DISCARDED BRACKET MOUNTING CENTRE

E N D

Class 25.2 – Code 5 (TSU 19/77)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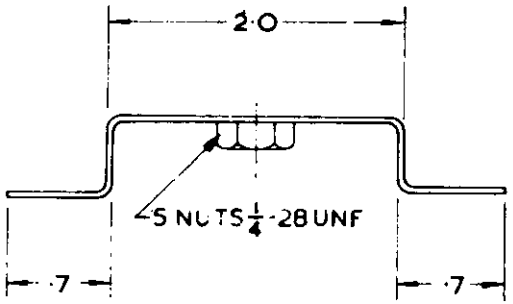
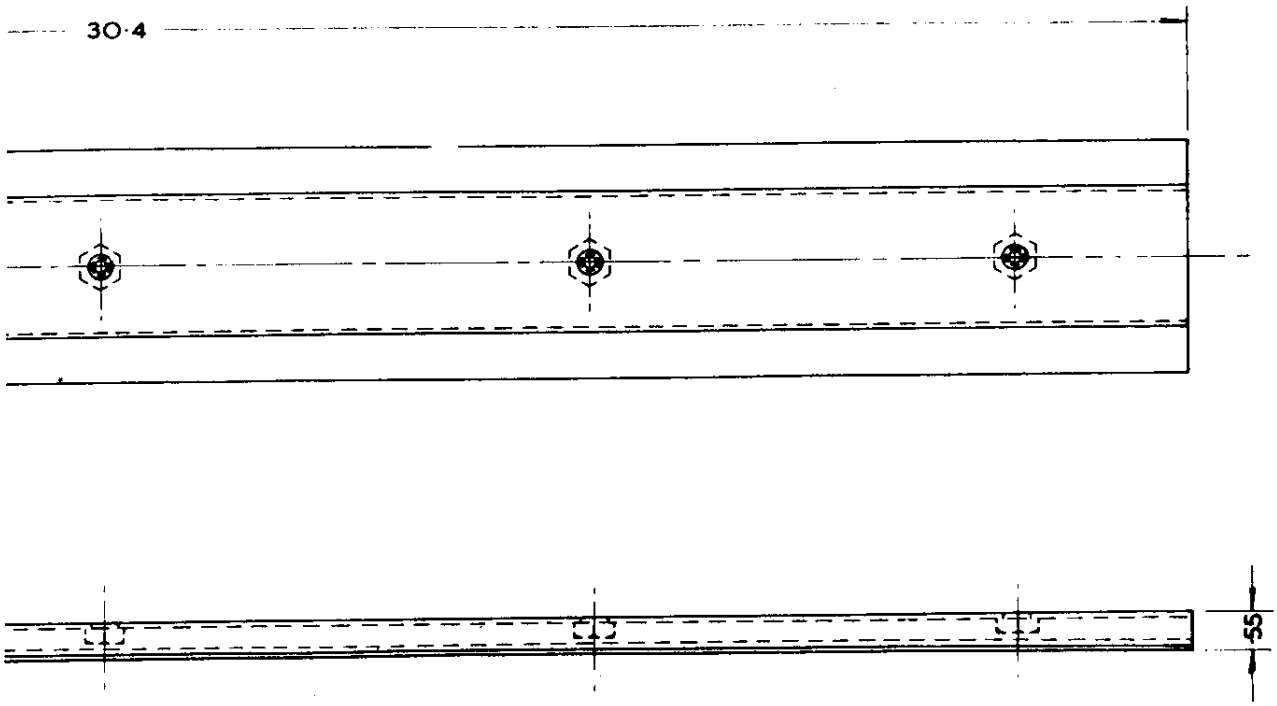
A



TYPICAL SECTION A-A

FIG 6 - DII



DIMENSIONS ARE IN INCHES

:DED BRACKET MOUNTING CENTRE

E N D

s 25.2 – Code 5 (TSU 19/77)

w/c WKSP A1

TRUCK CARGO 2 1/2 TON GS WITH WINCH AUST NO 1 MK 3

FUEL TANK SHIELD

MODIFICATION INSTRUCTION

REFERENCE:- AC in WM No 22414/12.

SUMMARY

1. This instruction details the fitting of a shield to the under side of fuel tank carrier brackets to prevent damage to the fuel tank.

Estimated manhours to perform: 4·0

2. *Priority:* Group 2

3. *Vehicles affected:*

All subject vehicles.

4. *Items affected:*

Fuel tank carrier brackets

5. *Action required:* By RAEME units authorised to carry out unit repair and in accordance with WKSP A 850.

6. *Stores required:* (Available through normal channels).

Item No	*Stock No*	*Designation*	*Qty per Veh*
1	5310-66-019-3958	NUT, PLAIN, HEXAGON, UNF, 2B, steel formed, zinc coated, 3/8 in	12
2	5306-66-011-0537	BOLT, MACHINE, UNF, 2A, SAE grade 5 steel, hex hd, 3/8 in x 1 in, threaded 5/8 in	12
3	5310-66-016-5995	WASHER, LOCK, spring steel, single turn, sq section, cad plated 3/8 in bolt size	12
4	5310-66-016-8930	WASHER, FLAT, steel, rd, zinc coated 3/8 in bolt size	36
5	2910-66-023-0831	SHIELD, ASSEMBLY, FUEL TANK	2

7. *Stores removed:*

Nil.

DETAIL

8. (a) Disconnect battery terminals, fuel tank level units, terminals, earth connections, petrol pipes and fuel tank straps.

(b) Remove fuel tanks.

(c) Using the shields as templates, mark the holes to be drilled in the fuel tank brackets in accordance with fig 1 (RH and LH).

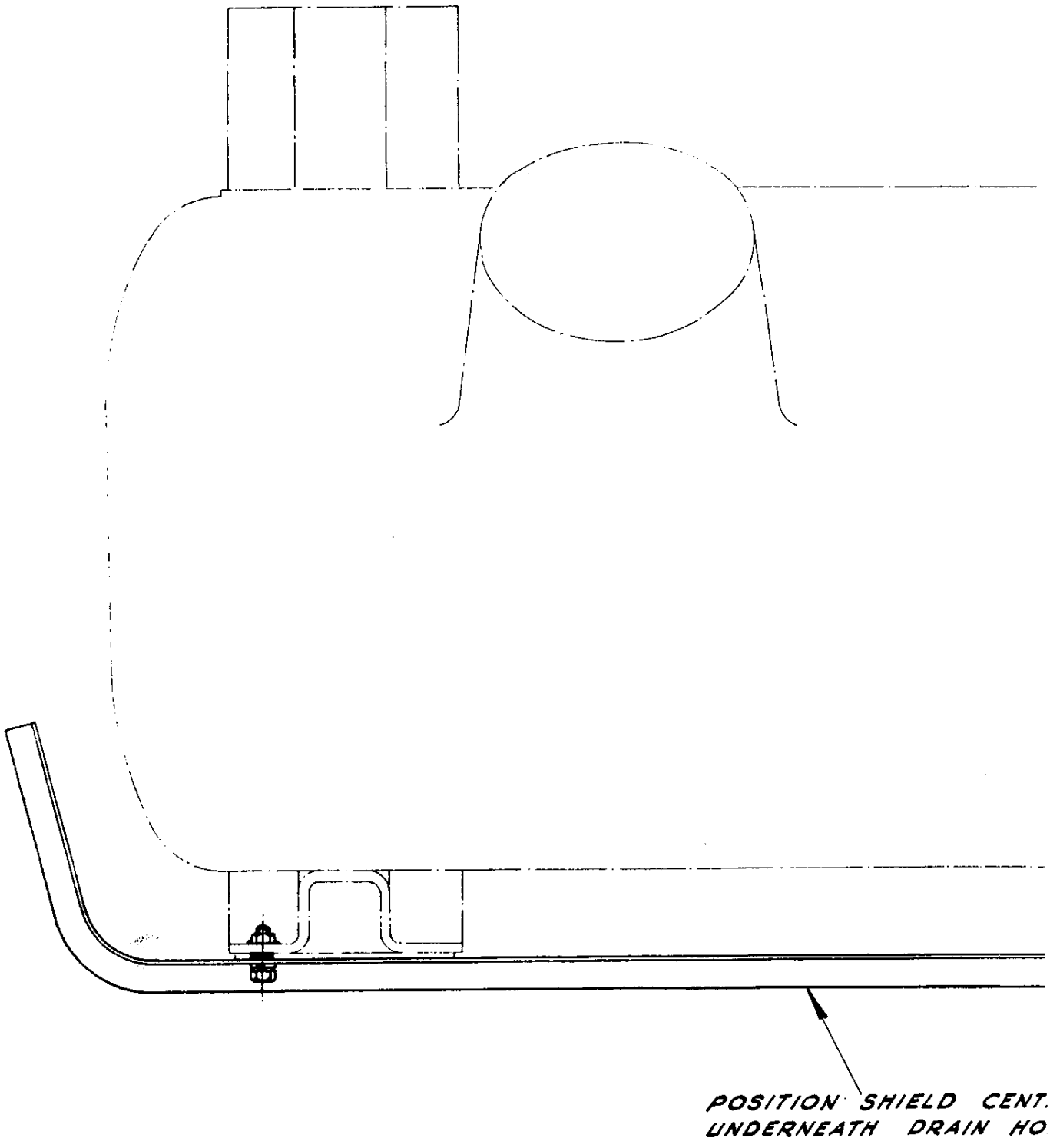
(d) Remove the shields and drill twelve 13/32 inch diameter holes (three per bracket).

(e) Assemble shield with bolts, washers and nuts in accordance with fig 1, and tighten.

(f) Tack weld nuts to brackets in accordance with fig 1 and then retighten bolts.

(g) Clean, prime and paint damaged surfaces in accordance with WKSP B 700.

(h) Replace items in sub-paras (a) and (b) in reverse order.


POSITION SHIELD CENT.
UNDERNEATH DRAIN HO

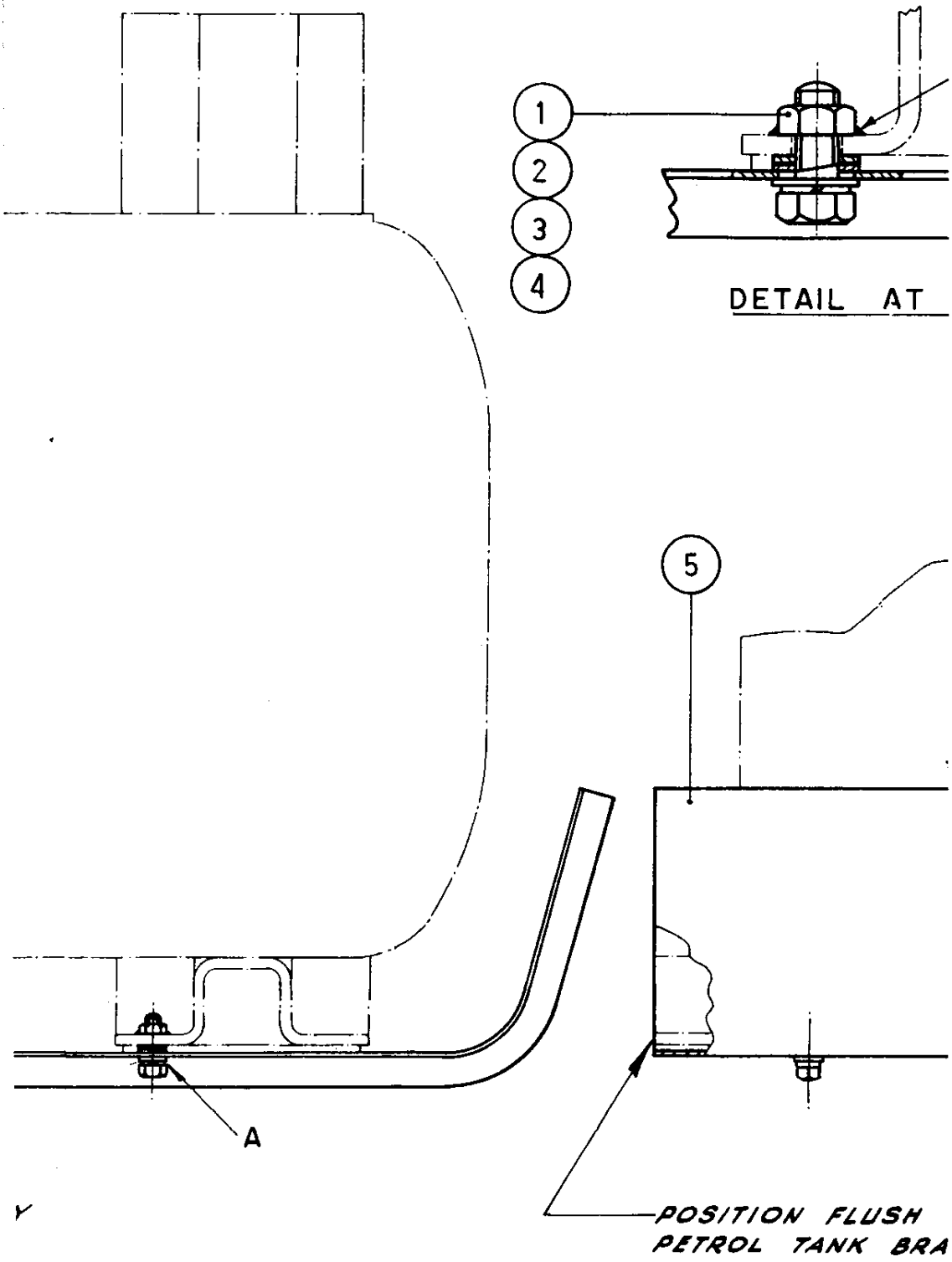
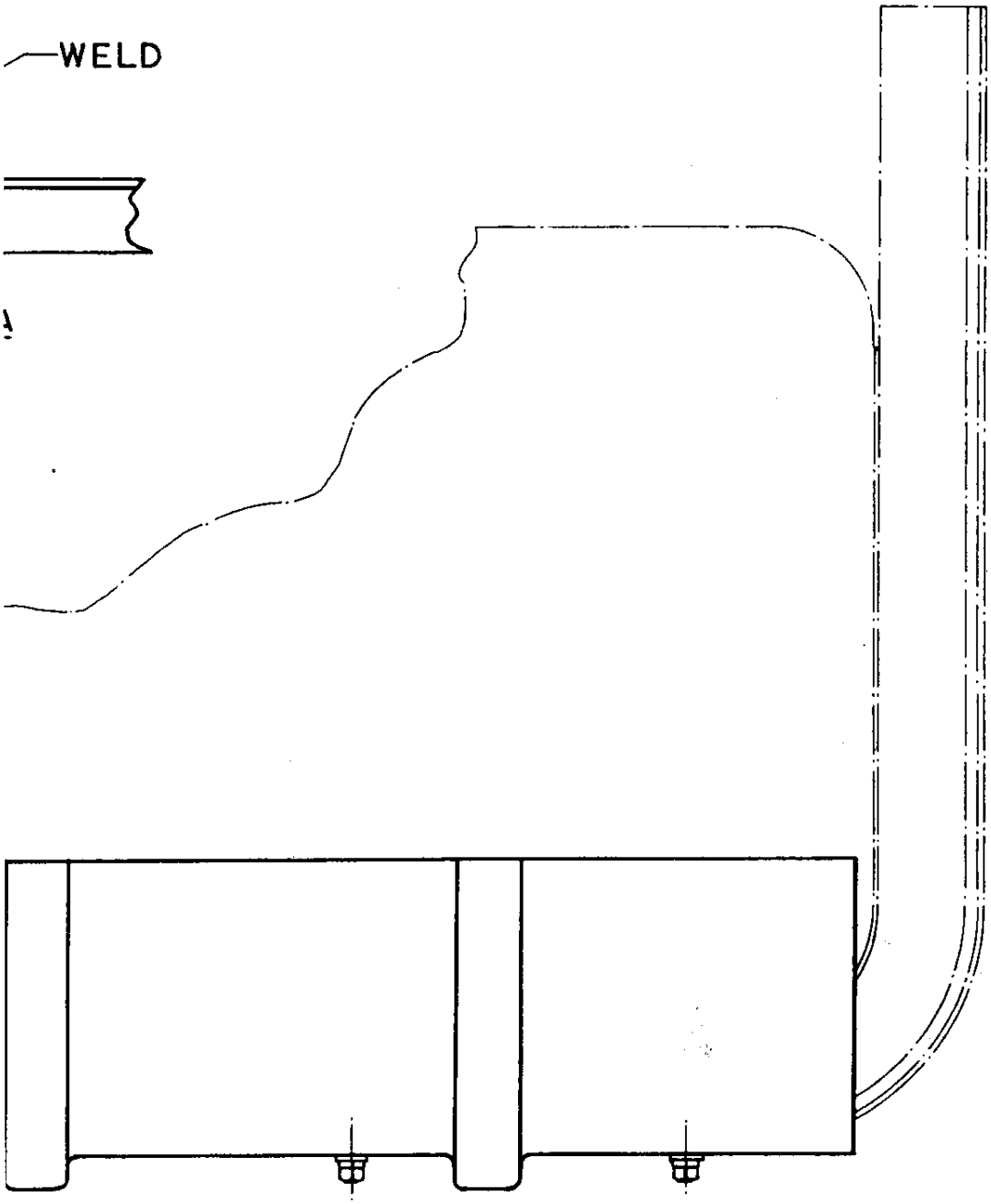


FIG 1 - FUEL TANK PROTECTION SHIELD

E N D



VITH
'KET.

TRUCK CARGO 2 1/2 TON GS WITH WINCH AUST NO 1 MK 3

FLOOR PANELS

MODIFICATION INSTRUCTION

REFERENCE:- AC in WM No 22414/13.

SUMMARY

1. This instruction details the reworking of the cab floor panels and mats to allow refuse, which has collected in the cab, to be swept out through the holes. The sealing grommets can be removed when the vehicle is deep wading to allow quicker stability of the vehicle.

Estimated manhours to perform: 4·0

2. *Priority:* Group 2

3. *Vehicles affected:*

All subject vehicles.

4. *Items affected:*

Floor panels and mats left and right hand

5. *Action required:* By RAEME units authorised to carry out unit repairs and in accordance with WKSP A 850.

6. *Stores required:*

Item No	*Stock No*	*Designation*	*Qty per Veh*
1	5325-66-023-0830	GROMMET rubber 3 inch diameter, Rover Pt No 334189	2

7. *Stores removed:*

Nil.

DETAIL

8. (a) Remove slave starting socket.

(b) Mark out floor panels and mats as per figs 1 and 2.

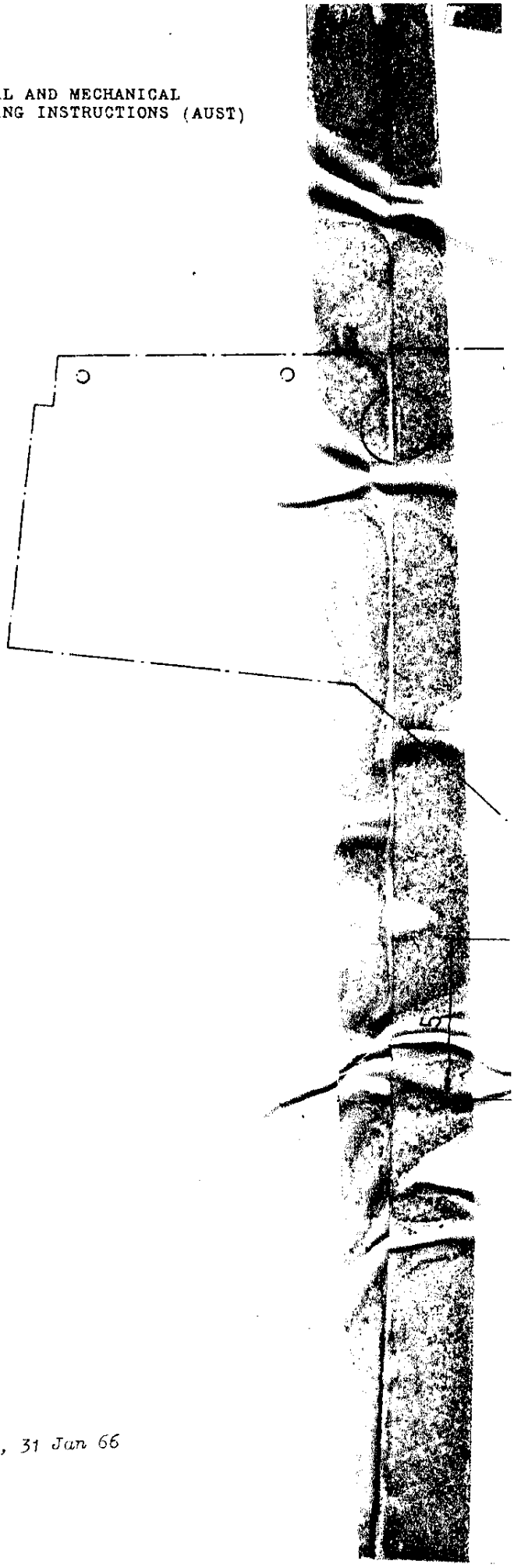
(c) Cut out material in sheet metal and rubber.

(d) Remove all burrs and sharp edges.

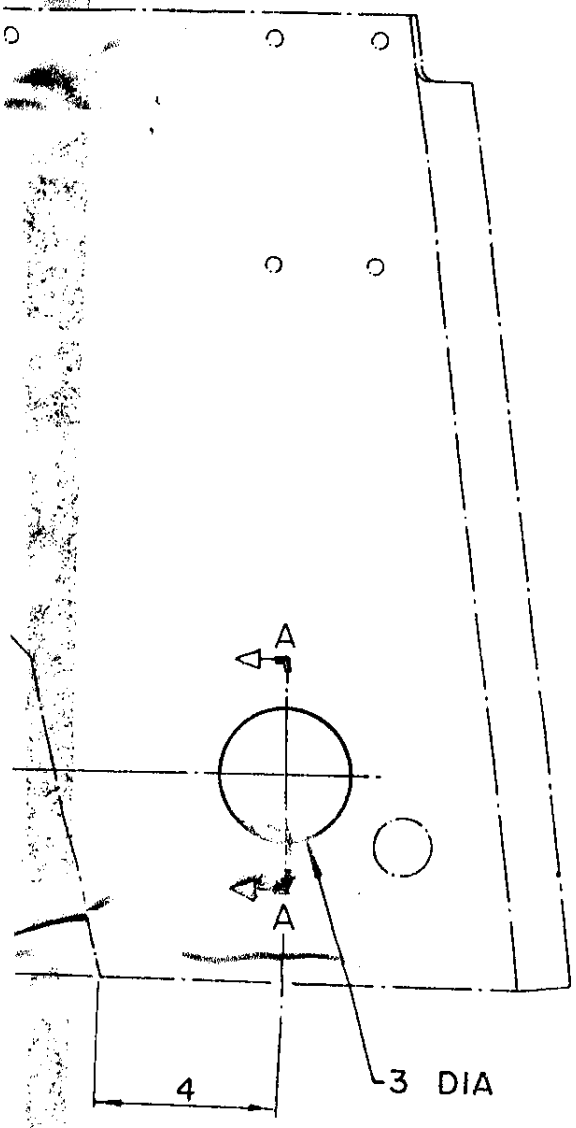
(e) Paint in accordance with WKSP B 700.

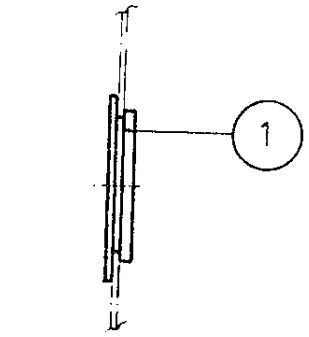
(f) Fit rubber grommet and replace rubber mats.

(g) Replace slave starting socket.



PANEL , FLOOR , FRONT , L H
RH OPPOSITE

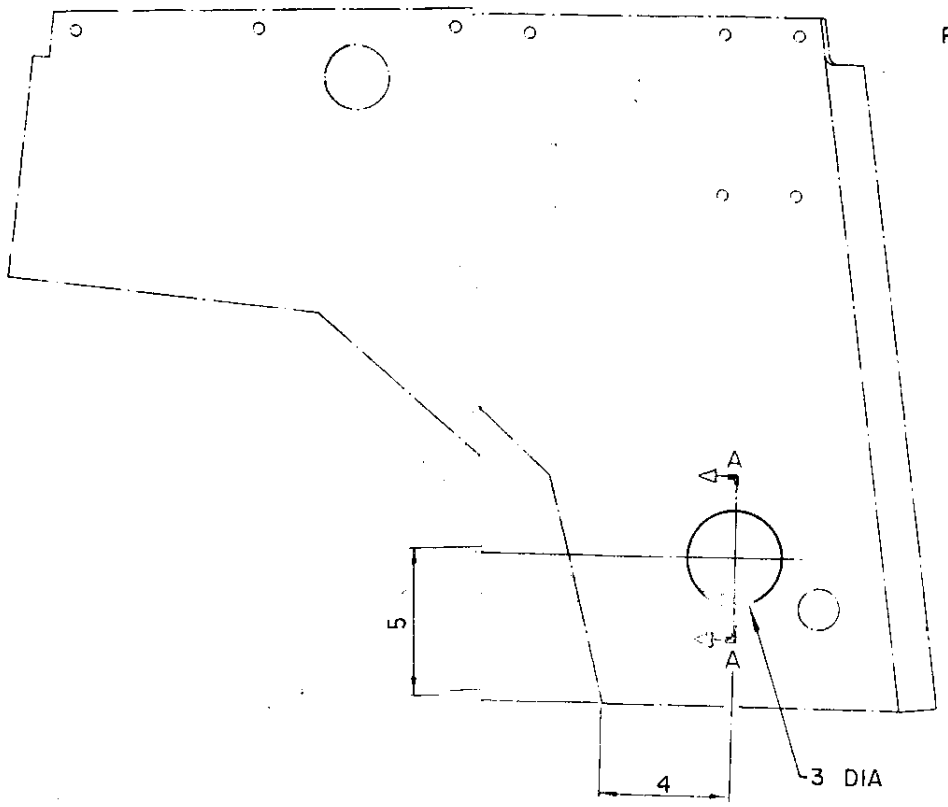


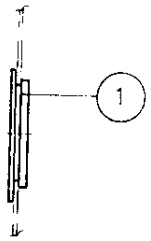


SECTION AA

FIG 1 - FLOOR PANEL

PANEL , FLOOR , FRONT , L H
RH OPPOSITE





SECTION AA

FIG 1 - FLOOR PANEL

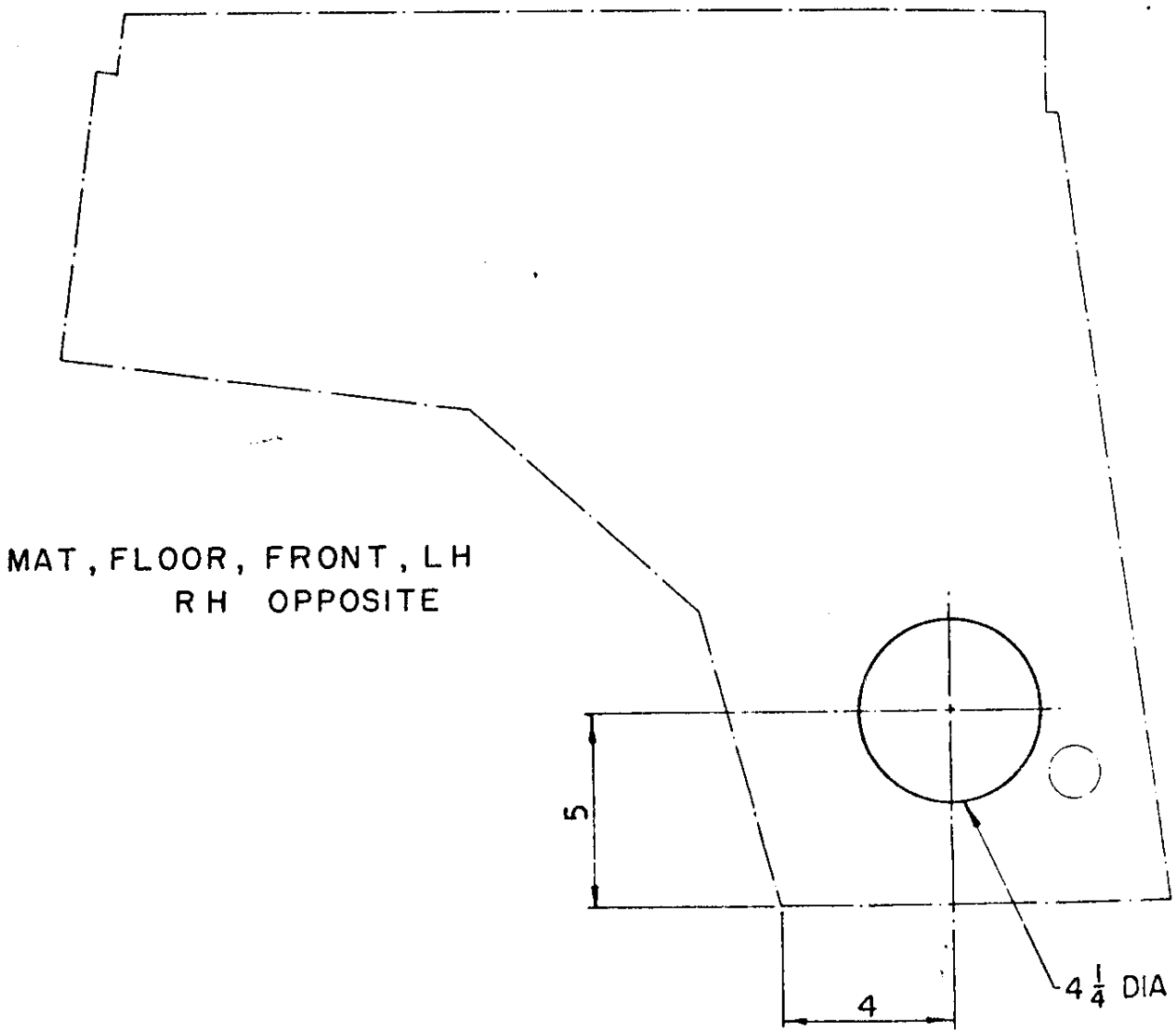


FIG 2 - FLOOR MAT

E N D

TRUCK, CARGO, 2 1/2 TON, GS, WITH WINCH, AUST NO 1 MK 3

CARGO BODY SIDE PANELS

MODIFICATION INSTRUCTION

REFERENCE:- *AC in WM No 22414/15.*

SUMMARY

1. This instruction details the strengthening of the cargo body, side panel left and right hand, by welding reinforcement plates in the required positions.

Estimated manhours to perform: 8·0

2. *Priority:* Group 2

3. *Vehicles affected:*

All subject vehicles

4. *Items affected:*

Cargo, body, side panels

5. *Action required:* By RAEME authorised to carry out field repair in accordance with WKSP A 850.

6. *Stores required:* (Available through normal channels).

Stock No	*Designation*	*Qty per Veh*
9515-66-014-2513	STEEL SHEET, CARBON, HOT ROLLED, mild, 16 BG (0·0625 in)	As Required

DETAIL

7. (a) Manufacture reinforcing plates in accordance with fig 1001.

(b) Remove side panels.

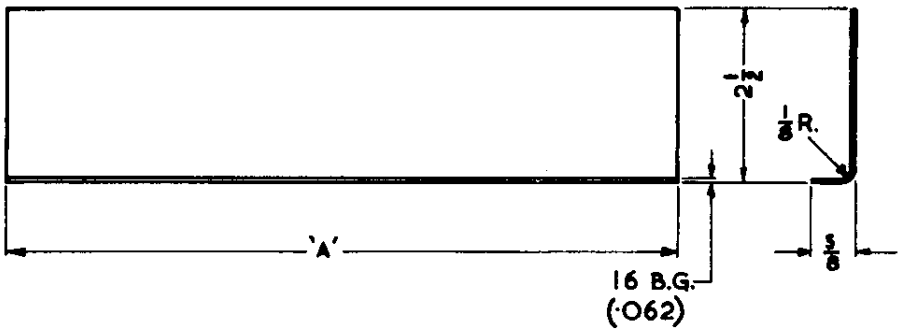
(c) Remove paint back to the bare metal on the panels where the reinforcements are to be welded.

(d) Fit and spot weld the reinforcements in accordance with fig 1002.

(e) Inhibit, prime and paint in accordance with WKSP B 700.

(f) Replace the side panels.

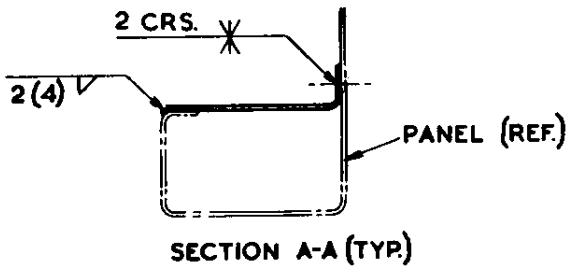
NOTE:- *The next page is Page 1001.*



SHEET M.S.

DIM. 'A': 29 9/16 . 8 OFF.
DIM. 'A': 9 7/16 . 4 OFF.

FIG 1001 - REINFORCEMENTS



SECTION A-A (TYP.)

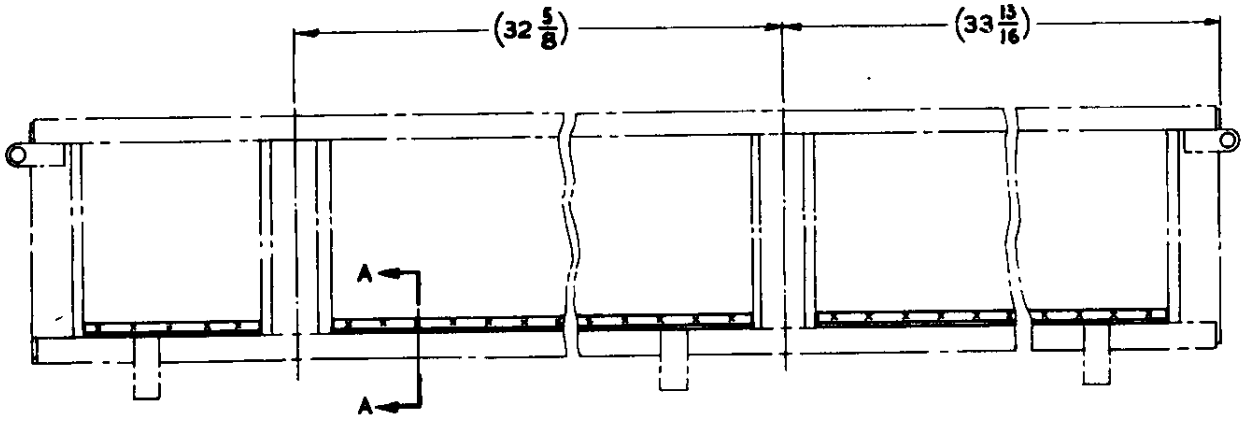


FIG 1002 - REINFORCEMENT SIDE PANEL

E N D

TRUCK, CARGO, 2 1/2 TON, GS, WITH WINCH, AUST, NO 1 MK 3

F L O O R

MODIFICATION INSTRUCTION

REFERENCE:- *AC in WM No 22414/16.*

SUMMARY

1. This instruction details the modification to the rear tray floor angle to prevent the angle from bowing and causing an obstruction when off-loading.

Estimated manhours to perform: 1·0

2. *Priority:* Group 2

3. *Vehicles affected:*

All cargo body vehicles.

4. *Items affected:*

Cross member assembly ADE(V)70-15
Angle ADE(V)70-26

5. *Action required:* By RAEME workshops authorised to carry out unit repair and in accordance with WKSP A 850.

6. *Stores required:* (Available through normal channels).

Stock No	*Designation*	*Qty per Veh*
5305-66-015-2202	SCREW, MACHINE, UNF, 2A, mild steel, flat csk hd, slotted, zinc coated 3/8 in x 1 1/2 in long	2
5310-66-019-3958	NUT, PLAIN, HEXAGON, UNF, 2B steel formed, zinc coated 3/8 in	2
5310-66-016-5995	WASHER, LOCK, spring steel, single turn, square section, cad plated 3/8 in bolt size	2

7. *Stores removed:*

Nil.

DETAIL

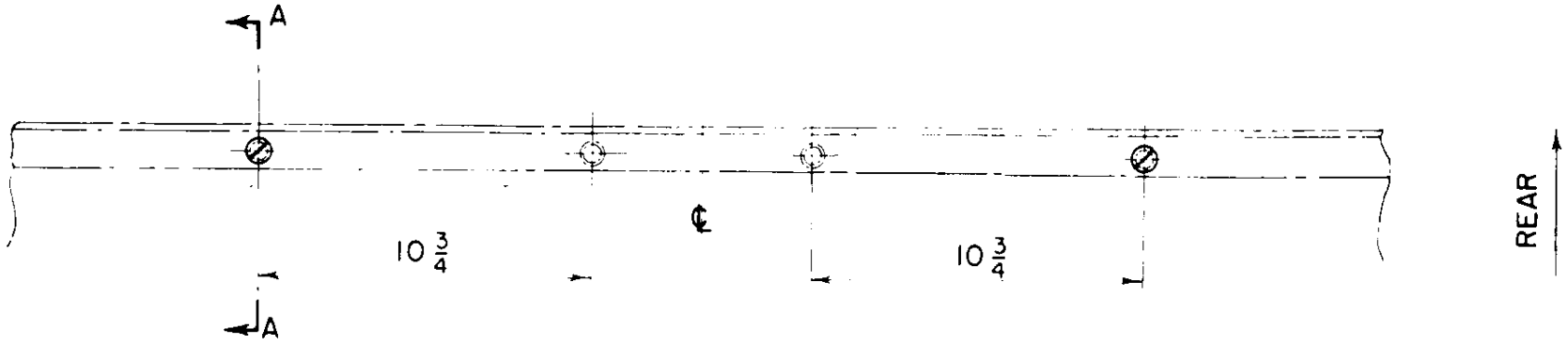
8. (a) Refer to fig 1.

(b) From the centre of the two centre screw heads mark two points 10 3/4 inch centres.

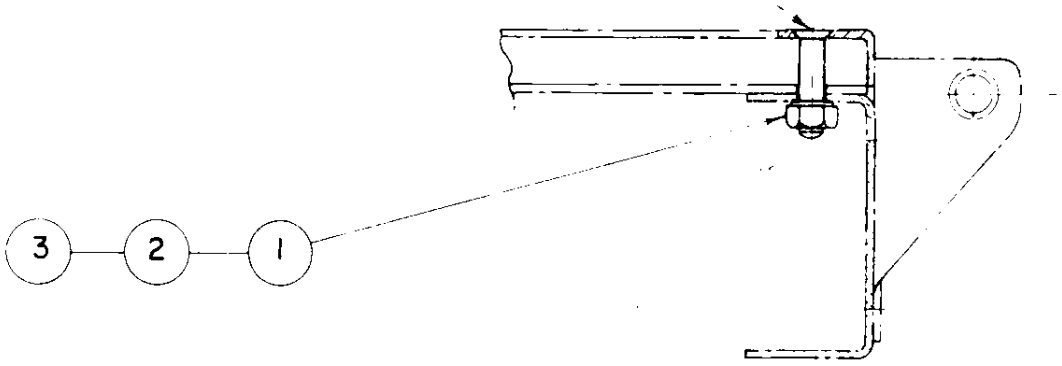
(c) Drill and countersink holes.

(d) Fit screws, washers and nuts.

(e) Paint in accordance with WKSP B 700.



2 HOLES $\frac{7}{16}$ DRILL & C'SINK TO SUIT



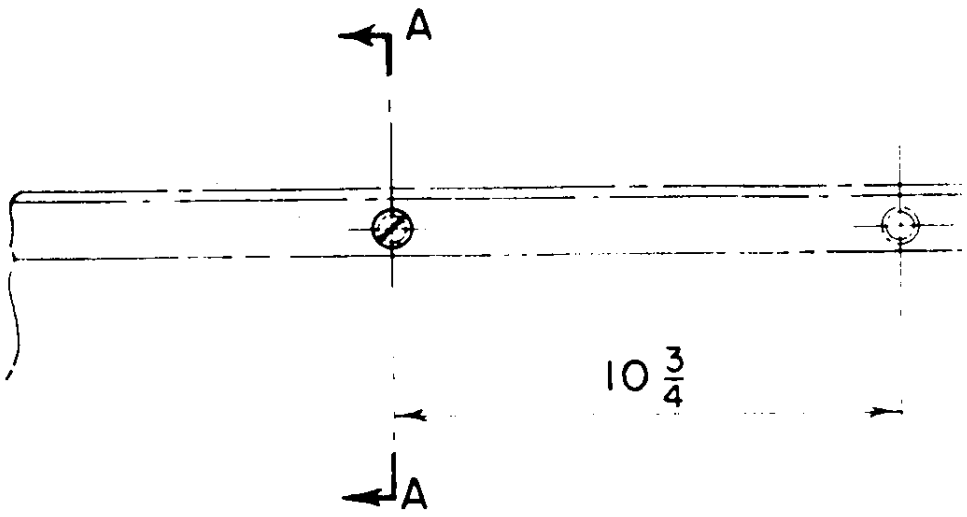
SECTION AA

NEW WORK IS IN FULL LINE
EXISTING PARTS IN CHAIN LINE
DIMENSIONS IN INCHES

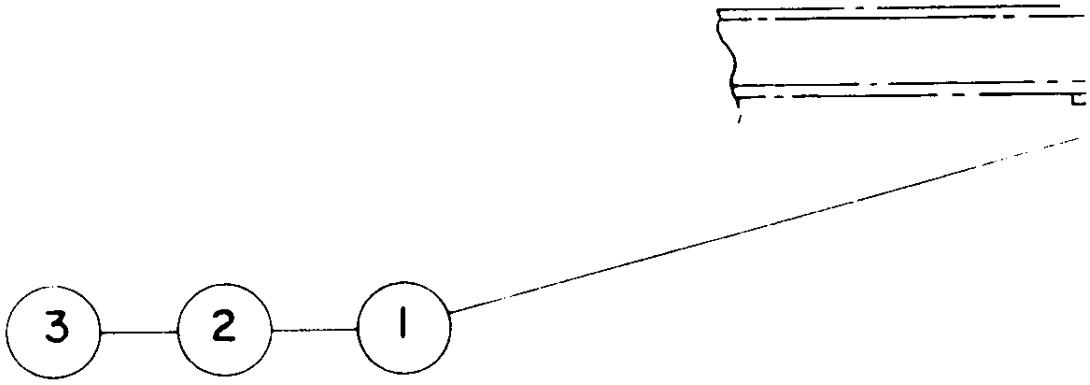
FIG 1 - DRILLING FLOOR ANGLE

Class 25.2 - Code 4 (TSU 19/77)

E N D



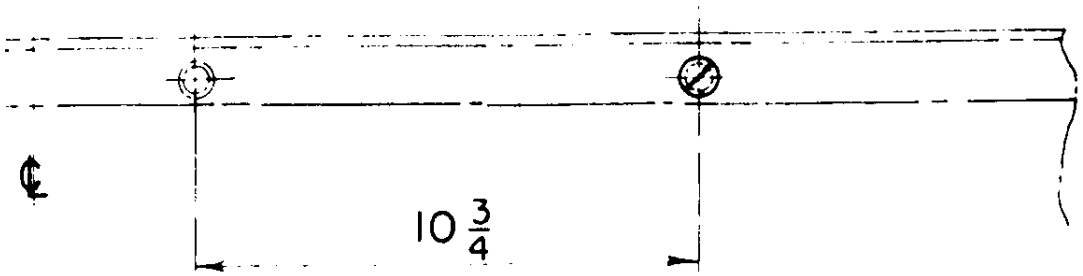
2 HOLES $\frac{7}{16}$ DRILL &
C'SINK TO SUIT

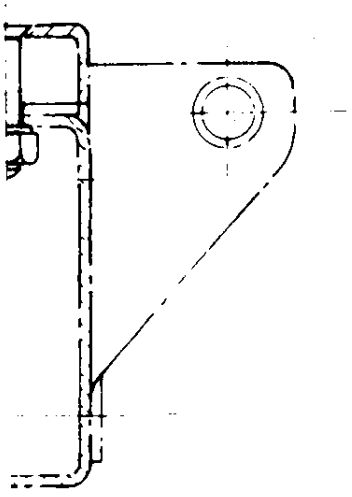


NEW WORK IS IN FULL LINE
EXISTING PARTS IN CHAIN LINE
DIMENSIONS IN INCHES

SECT

FIG 1





AA

DRILLING FLOOR ANGLE

5.2 – Code 4 (TSU 19/77)

E N D

TRUCK, CARGO, 2 1/2 TON GS WITH WINCH AUST NO 1 MK 3

PIPING, CLUTCH CONTROL SYSTEM

MODIFICATION INSTRUCTION

REFERENCE: *AC in WM No 22414/16.*

NOTE: *This instruction supersedes previous issues, all copies of which are to be destroyed. Changes are sidelined.*

SUMMARY

1. This instruction deals with the rerouting of the clutch control piping system to prevent rupturing of clutch hose and damage to piping due to manifold heat.

Estimated manhours to perform: 5.0

2. *Priority:* Group 1

3. *Vehicles affected:*

All subject vehicles

4. *Items affected:*

Clutch control piping

5. *Action required:* By RAEME units authorised to carry out unit repair and in accordance with WKSP A 850.

6. *Stores required:* (Available through normal channels).

Item No.	*Stock No.*	*Designation*	*Qty per Veh.*
1	2520–66–023–7410	TUBE ASSY, METAL, CLUTCH PEDAL CYLINDER	1
2	2520–66–023–7409	TUBE ASSY, METAL, CLUTCH SLAVE CYLINDER	1
3	2520–66–023–7632	HOSE ASSY, RUBBER, high pressure hydraulic systems	1
4	2520–66–025–5082	BRACKET	1
5	5340–66–023–7638	CLIP, spring tension	2
6	5306–66–019–3755	BOLT, MACHINE, UNF, 2A SAE grade 5 steel, hex hd, zinc coated 1/4 in x 1 in long	1
7	5310–66–015–5872	WASHER, LOCK, spring steel, single turn, square section, cad plated, 1/4 in	1
8	5310–66–010–7421	NUT, plain hexagon, UNF, 2B fit, A steel, zinc coated, 1/4 in	1
9	5310–66–015–5117	NUT, plain, hexagon, UNF, 2B fit, A steel, lock, zinc coated, 7/16 in	1
10	5310–66–016–8520	WASHER, LOCK, steel, shakeproof, cad plated, external type 11, 7/16 in	1

7. *Stores removed:* Reduce to produce.

Stock No.	*Designation*	*Qty per Veh.*
2520–66–018–3288	TUBE ASSEMBLY, METAL, master cylinder to union	1
5325–66–013–4310	GROMMET, RUBBER, speedometer cable	1
2520–66–018–3283	TUBE ASSEMBLY, metal, union to flexible hose	1
2520–66–011–2872	HOSE ASSEMBLY, rubber	1
4730–00–240–1657	NIPPLE, TUBE, brass, 1/4 in tube, male, UNF, 7/16 in x 1 3/16 in long	1
5310–66–015–5117	NUT, plain, hex, UNF, 2B fit, A steel lock, zinc coated, 7/16 in	1
5310–66–016–8520	WASHER, LOCK, steel shakeproof, cad plated, external type 11, 7/16 in	1

DETAIL

8. Remove all existing clutch piping, refer to Fig 1 and proceed as follows:

a. Fit bracket (item 4) securing with items 6, 7 and 8.
b. Drill hole in radiator side compartment panel in a suitable position to suit grommet attached to item 1.
c. Assemble pipe (item 1).
d. Assemble flexible hose (item 3) securing with items 9 and 10.
e. Assemble clutch pipe (item 2).
f. Clip pipe to fuel line and vacuum pipe using clips (item 5).
g. Bleed system and check operation.

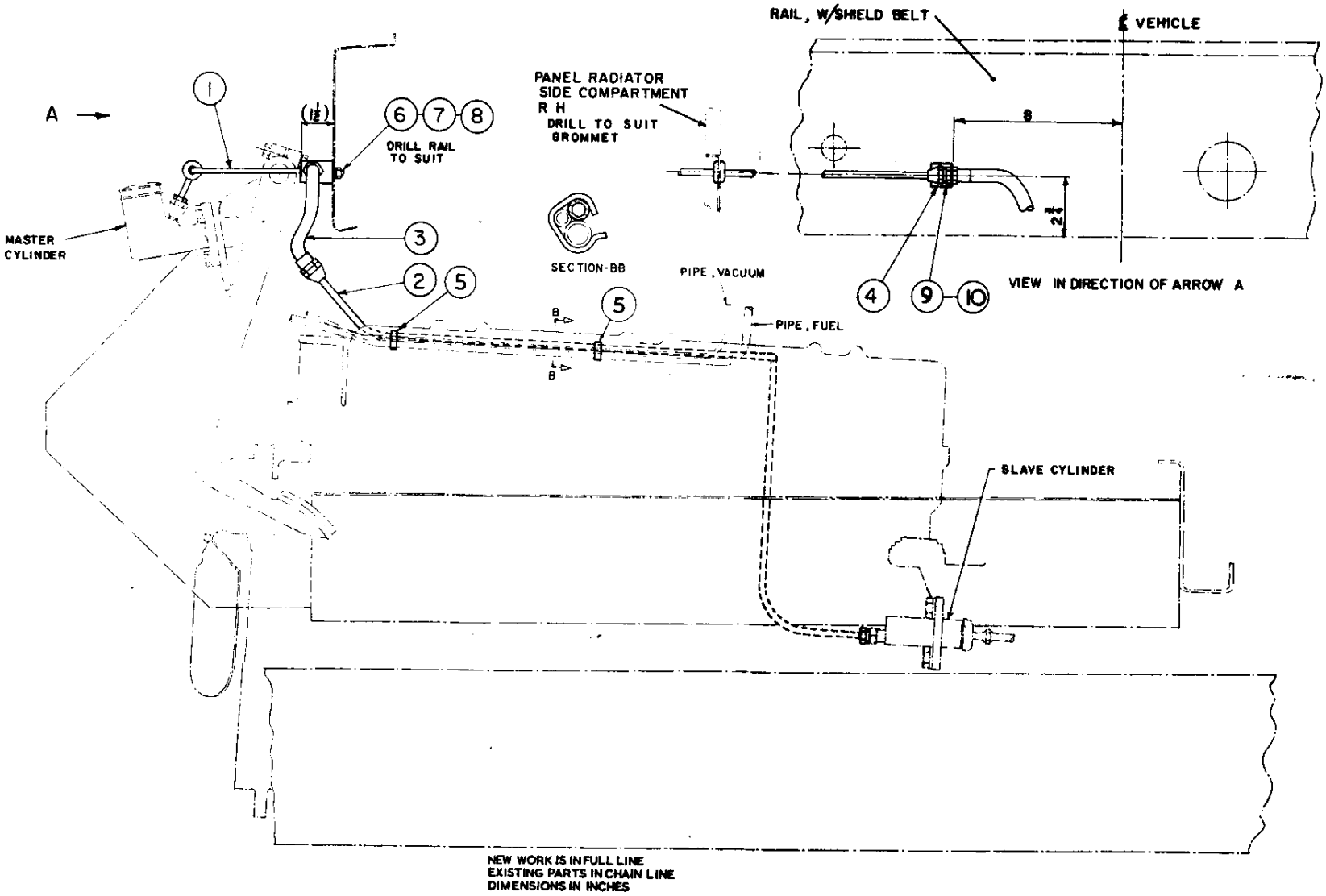


FIG. 1 – INSTALLATION CLUTCH CONTROL

E N D

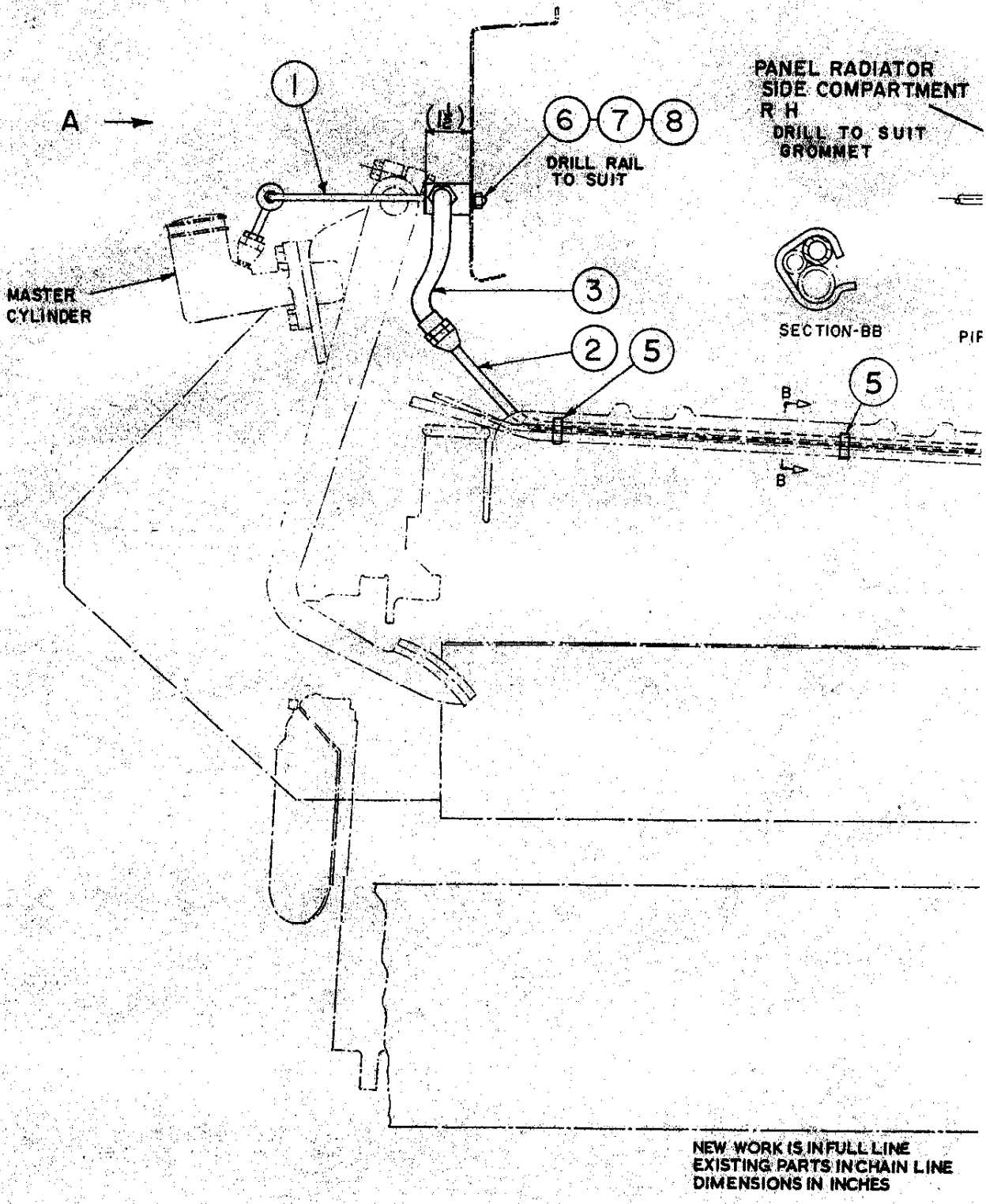


FIG. 1 – INSTALLATION

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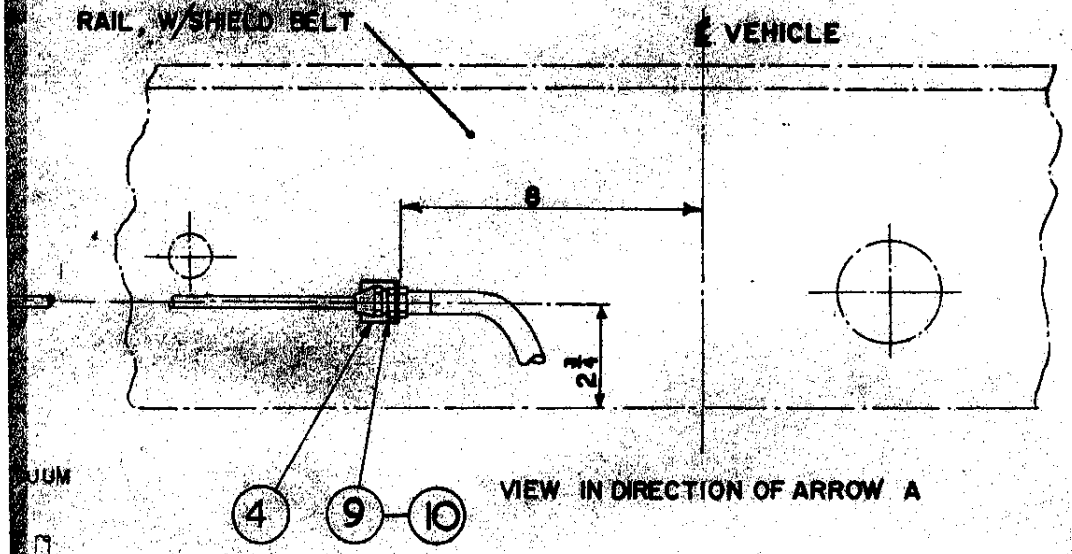

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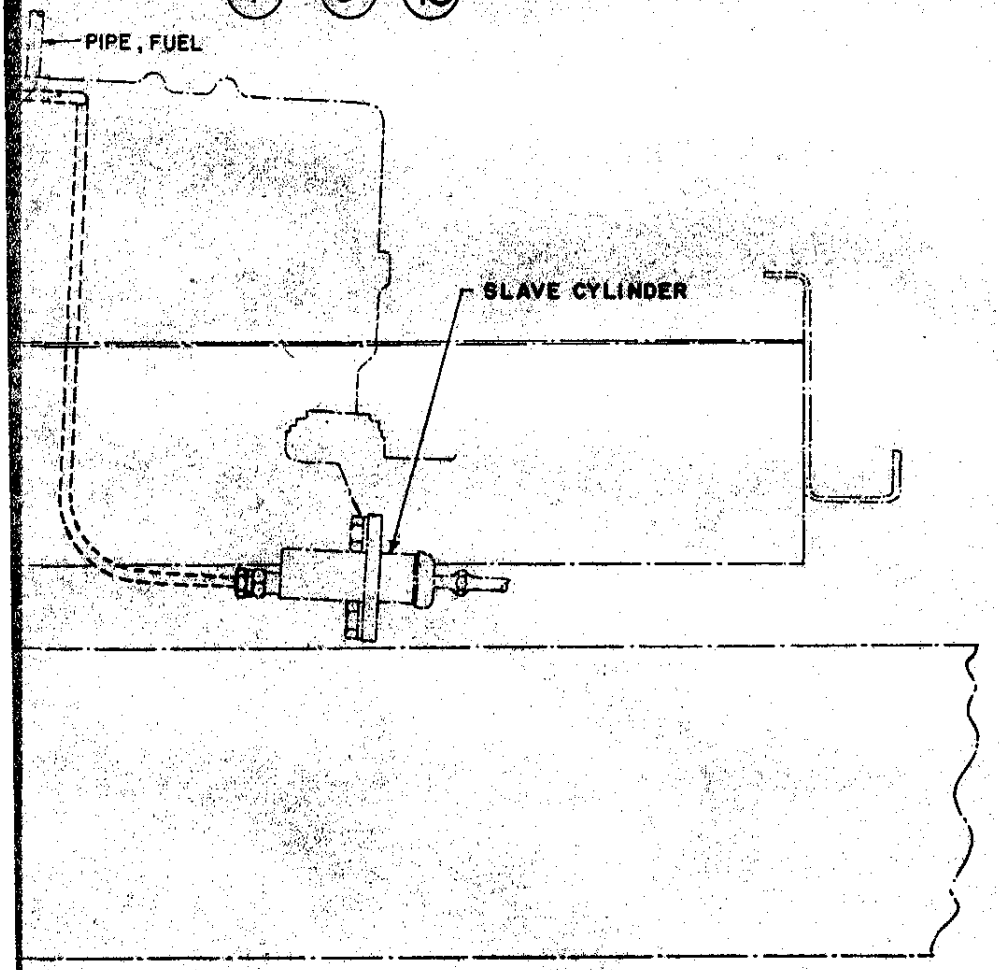


TCH CONTROL

TRUCK, CARGO, 2 1/2 TON, GS, AUST, NO 1 MK 3

FITTING OF STRONGER STUB AXLES AND METHOD OF SECURING

MODIFICATION INSTRUCTION

Reference: AC in WM Nos 22414/18 and 22414/32.

NOTE: This instruction supersedes previous issues, all copies of which are to be destroyed. Changes are sidelined.

Summary

1. This instruction details the replacing of the existing stub axles with those of a new design. A different method of securing the stub axle to the housing is applied.

Estimated manhours to perform: 12.0

2. **Priority:** Group 1.

3. **Vehicles affected:** All Subject Vehicles.

4. **Items affected:** Axle assemblies front and rear.

5. **Action required:** By RAEME Units authorised to carry out field repairs or work in accordance with WKSP A 850.

6. **Stores required:** (Commands will be notified by signal of availability).

Item No.	*Stock No.*	*Designation*	*Qty Per Veh.*
1	2520–66–021–5704	STUB AXLE, front and rear wheel drive axle	4
2	5330–66–018–3392	SEAL, PLAIN, ENCASED, 3.875 in shaft dia by 5.129 in bore dia by 0.500 in w	4
3	3110–66–021–5733	CONE AND ROLLERS, TAPERED ROLLER BEARING, single, row, retainer type, straight bore, normal angle, 2.875 in by 1.424 in	4
4	3110–00–100–0328	CUP, TAPERED ROLLER BEARING, single row, 5.000 in by 1.250 in	4
5	3110–00–142–4361	CONE AND ROLLERS, TAPERED ROLLER BEARING, single row, retainer type, straight bore, normal angle, 2.625 in by 0.866 in w	4
6	3110–00–100–0305	CUP, TAPERED ROLLER BEARING, single row, 4.330 in by 0.7411 in	4
7	2530–66–011–1973	PLATE, LOCKING, BEARING NUT	4
8	2530–66–011–1974	NUT AND SEAL ASSEMBLY, hub and wheel bearing	4
9	5307–66–026–2807	STUD, PLAIN (ADE(V)94–503)	20
10	5310–00–582–5977	WASHER, FLAT, steel, passivated 0.416 in ID by 0.802 in OD by 0.051 in thk	20
11	5310–66–026–2808	NUT, SLOTTED, HEXAGON (ADE(V)94–504)	20
12	5310–66–026–2809	NUT, SELF LOCKING, HEXAGON SPECIAL ELASTIC STOP (ADE(V)94–21)	20
13	3120–66–010–6623	BEARING SLEEVE, front axle outer	2

7. **Stores removed:** To be reduced to scrap. (Bearings are to be returned to stock if serviceable).

Stock No.	*Designation*	*Qty Per Veh.*
2520–66–010–5825	STUB AXLE	4
5330–66–018–3392	SEAL, PLAIN, ENCASED, 3.875 in shaft dia by 5.129 in bore dia by 0.500 in w	4
3110–00–100–0285	CONE AND ROLLERS, TAPERED ROLLER BEARING, single row, retainer type, straight bore, normal angle, 2.750 in by 1.424 in	4

Stock No.	*Designation*	*Qty Per Veh.*
3100–00–100–0328	CUP, TAPERED ROLLER BEARING, single row, 5.000 in by 1.250 in	4
3110–66–142–4361	CONE AND ROLLERS TAPERED ROLLER BEARING, single row, retainer type, straight bore, normal angle, 2.625 in by 0.866 in w	4
3110–00–100–0305	CUP, TAPERED ROLLER BEARING, single row, 4.330 in by 0.7411 in	4
2530–66–024–3838	PLATES locking, nut and bolt	10* (if fitted vide G 557–28)
5306–66–010–2916	BOLT, MACHINE, BRAKE, back plate to housing (3/8 UNF by 1 3/8)	20
5310–66–021–7295	NUT, PLAIN HEXAGON, UNF 2B, SAE, grade 8, steel cad plated 3/8 in	20

NOTES: *1. As stores are becoming available on a progressive basis over a period, it will be necessary to process vehicles on a selective priority basis, vehicles having exceeded 12,000 miles being modified first, then those nearest to that mileage and so on.*
2. Now that stores are becoming available, it is essential that vehicles be modified as soon as possible, and except for those which may have exceeded 12,000 miles already, all are to be modified before that mileage is reached.

Detail

8. **Rear Axle.**
   a. Remove rear wheel and brake drum, dismantle wheel hub and remove brake shoes.
   b. Disconnect brake connections from the back plate, remove stub axle to housing bolts, remove back plate and stub axle.
   c. Fit new stub axle (item 1), refit back plate and tube grease tray, fit stub axle to housing bolts, flat washers and nuts self locking (item 12). Torque nuts to 40 to 45 lbs ft.
   d. Assemble hub and wheel assembly using items 2 to 8, reconnect brake fittings.
   e. Affix modification plate (Catalogue No 9905–66–016–3535) to the rear of hand brake equalizer bracket on the rear axle housing using rivets or self tapping screws and deface the figure one.

9. **Front Axle.**
   a. Remove front wheel, brake drum, dismantle wheel hub and remove brake shoes.
   b. Disconnect brake connections from back plate, remove stub axle to housing bolts, remove stub axle and back plate.
   c. Screw studs (item 9) into housing using a nut and locknut, tighten studs until 1.22 ± .030 inch protrudes from the housing. Fit stub axle (item 1), back plate and tube grease tray. Fit castellated nuts (item 11) to studs and tighten to 40–45 lbs ft. Secure nuts in pairs with 14 SWG soft carbon steel wire.
   d. Assemble hub and wheel assembly using items 2 to 8 and reconnect brake fittings.
   e. Bleed and adjust brake system.
   f. Fit modification plate (Stock No 9905–66–016–3535) to the rear of the front axle housing, two inches to the left of the differential carrier flange by the following method:
      1. Clean paint from area of housing where plate is to be fitted.
      2. Fit plate to housing using "Adhesive hardener Araldyte (Stock No 8040–66–017–1902).
   g. Deface the figure two on the modification plate.

NOTE: *Since the adhesive takes some hours to harden completely it is advisable to fit the modification plate before commencing work on the modification.*

END

TRUCK, CARGO, 2-1/2 TON, GS WITH WINCH AUST NO 1 MK 3

ELECTRICAL EQUIPMENT SHELTER S144/G

MODIFICATION INSTRUCTION

Reference: AC in WM No 22414/20.

Summary

1. This instruction details the fitting of a mounting frame to the tray body, for securing the equipment shelter to the vehicle. Changes are sidelined.

Estimated manhours to perform: 5.0

2. **Priority:** Group 1.
3. **Vehicles affected:** Subject vehicles, with AHQ authority.
4. **Items affected:** Tray and chassis members
5. **Action required:** By RAEME workshops authorised to carry out field repair or work in accordance with WKSP A 850.
6. **Stores required:** To be demanded through normal RAAOC channels.

Stock No.	*Nomenclature*	*Qty per Veh*
2540–66–025–7181	MODIFICATION KIT, Electrical Equipment shelter S144/G mounting frame	1
5306–66–019–3787	BOLT, MACHINE, UNF, 2A, SAE grade 5 steel, hex hd, zinc coated, 3/8 in by 2 in lg	8
5310–66–019–4120	NUT, SLOTTED, HEXAGON, UNF, 2B steel, formed zinc coated, 3/8 in	8
5310–66–016–5995	WASHER, LOCK, spring, steel, single turn, sq section, cad plated, 3/8 in bolt size	8

Detail

7. a. Place frame assembly mounting shelter on truck and align (as shown in fig 1) so that a set of mounting holes align with the flanges of the truck's transverse body members.
   b. Drill 7/16 inch holes through decking and crossmembers and bolt mounting shelter in position.
   c. Secure shelter to frame using guy wires provided.
   d. On completion of this instruction the vehicle will be "TRUCK, CARGO, 2-1/2 Ton, GS, W/Winch, Signal Shelter Installation Small Census Code 6108C". This information is to be entered in all the vehicle documents.

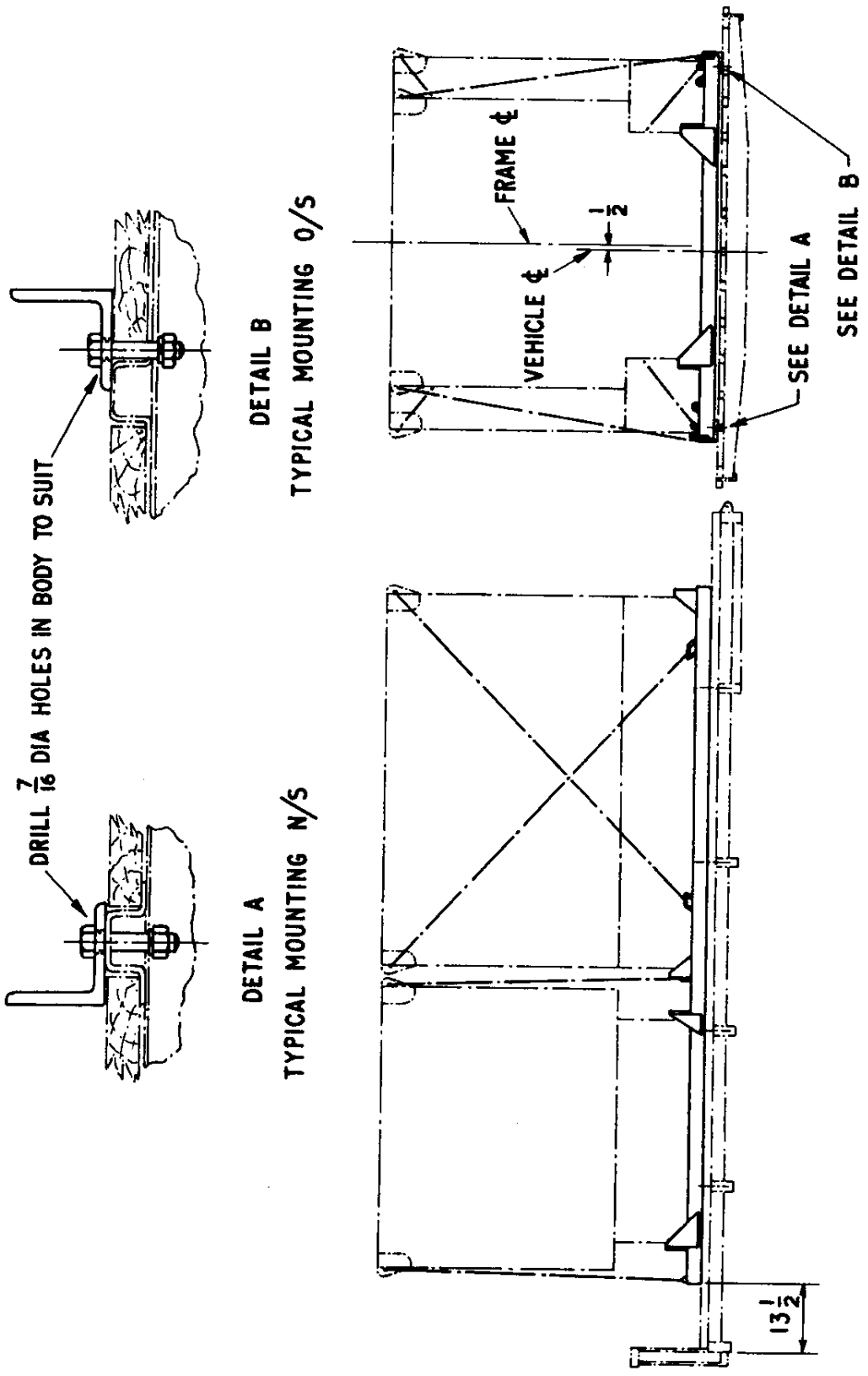


FIG 1 – INSTALLATION, FRAME, ASSEMBLY, MOUNTING SHELTER ELECTRICAL S144/G

(TSU 323/70)

END

TRUCK, CARGO, 2-1/2 TON, GS, WITH WINCH NO. 1 MK3 IHC

TOWING FRAME

MODIFICATION INSTRUCTION

REFERENCE: *AC in WM No 2241 4/31*

SUMMARY

1. This instruction details the replacement of the existing towing 'A' frame with a new type frame. Estimated manhours to perform 8.0.

2. *Priority:* Group 1.

3. *Vehicles affected:* All subject vehicles.

4. *Items affected:* Towing frame.

5. *Action required:* By RAEME workshops authorized to carry out unit repair in accordance with WKSP A 850.

6. *Stores required:* Availability to be notified in VEH A 006-1.

Item No	*Stock No*	*Designation*	*Qty per Veh*
	2540-66-026-2822	MODIFICATION KIT, TOWING FRAME, COMPRISING:-	
1	5310-66-026-2988	NUT SELF LOCKING, HEXAGON, UNF, 2B SAE GRADE 5 STEEL, zinc coated, passivated, 7/16 in, w/nylon insert	10
2	5306-66-019-3881	BOLT, Machine, UNF, 2A, SAE grade 5 steel, hex hd, zinc coated, 7/16 in by 1-1/2 in. lg	8
3	5306-66-015-0059	BOLT, Machine, 2A 'T' steel, hex hd, zinc coated, 7/16 in. by 1-1/4 in. lg	2
4	ADE(V)225-807	FRAME, Welded and Rivetted assembly	1

7. *Stores removed:* Return to RSG for disposal. Existing 'A' Frame assembly 2510-66-017-4692

8. *DETAIL*

a. Disconnect the cable assembly from the Convoy Tail, Stop and Flasher Lights, and the Cable Assembly, special purpose, electrical, jumper socket.

b. Disconnect the Pipes, Tractor protection valve, left, and right hand cock.

c. Remove the Box, Stowage, vehicular accessories, right and left hand.

d. Support the 'A' Frame Assembly.

e. Centre pop the rivets supporting the existing 'A' frame and drill with 5/16 inch drill.

f. Chisel off heads and punch out rivets.

g. Remove 'A' Frame Assembly from chassis and lower to floor.

h. Remove the Tow Hook Assembly from the 'A' Frame Assembly.

j. Remove the Emergency and Service Coupling Assemblies from the 'A' Frame Assembly.

k. Remove the Convoy Light and Bracket, Convoy Light Mounting.

l. Paint the inside of the towing frame side plates with marking blue and locate the assembled towing frame in the chassis.

m. Position the frame as shown in fig 1, using the rear crossmember as the datum for the dimension 1-5/16 inch (refer fig 1).

n. When positioned correctly, clamp frame to chassis, using the towing frame bolt holes as a templet and drill chassis and crossmember with a 29/64 inch drill.

o. With a scriber, using the chassis holes as a templet, mark the holes for the towing frame side plates.

p. Unclamp towing frame and lower from chassis. Drill the four holes in the towing frame side plates.

q. Reposition towing frame back in chassis fit items 1,2 and 3 to item 4 and tighten to 55-60 ft lbs torque, and reconnect the Pipes Tractor, protection valve, left and right hand cock.

r. Assemble the items removed as per sub-paragraphs h,j,k to the New Towing Frame (item 4) in the reverse order to dismantling.

s. Re-assemble and connect the items in sub-paragraphs a, b, and c in the reverse order to dismantling. Check all lights to see they are functioning satisfactorily. Aim convoy light at differential white face.

9. Position modification plate three inches forward of left hand fuel tank, front bracket, centrally on chassis side member; secure with rivets or self-tapping screws.

10. Erase figure '1' from modification plate.

The next page is page 1001

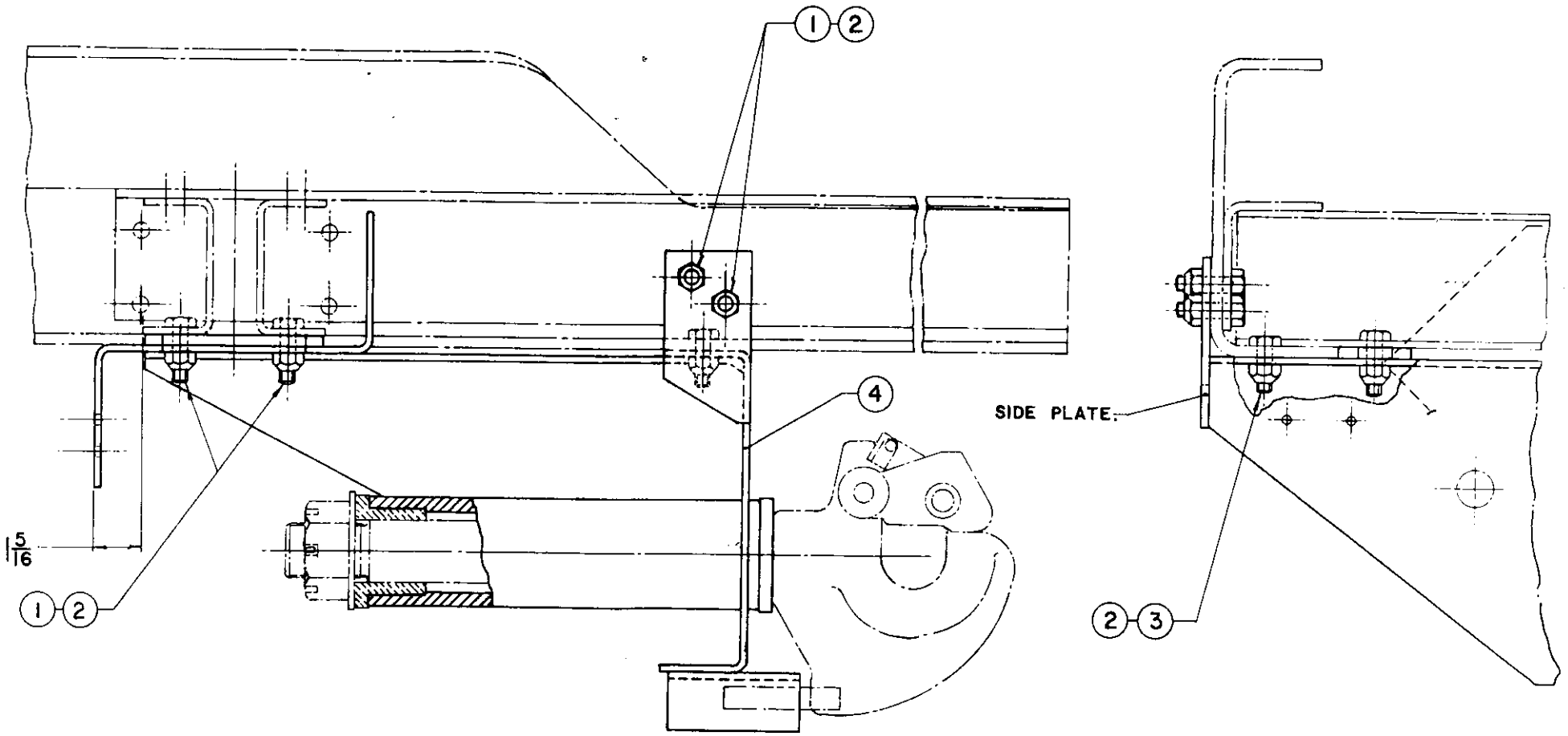


FIG 1 - INSTALLATION OF TOWING FRAME

END

Class 25.2 - Code 4 (TSU 19/77)

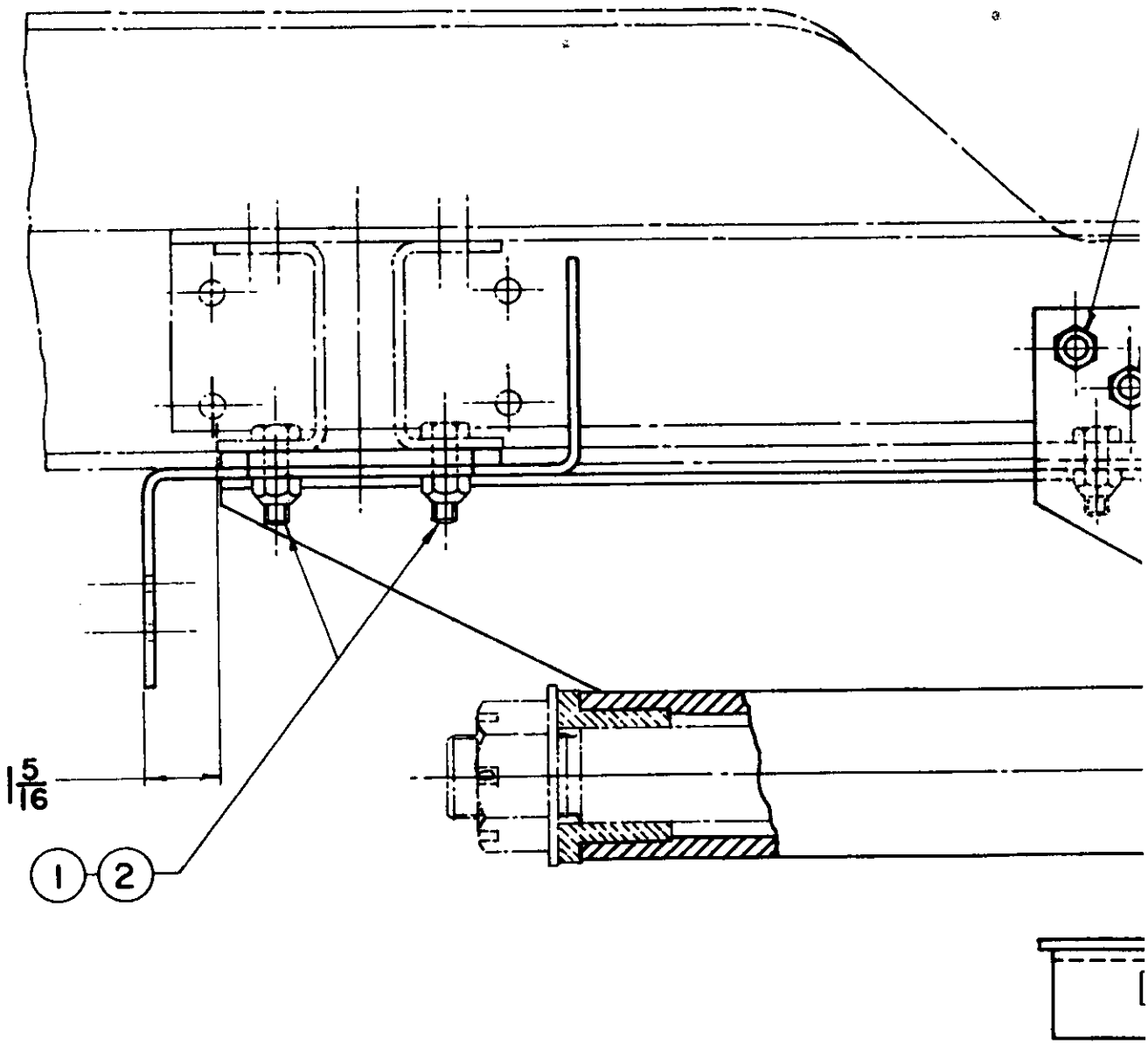
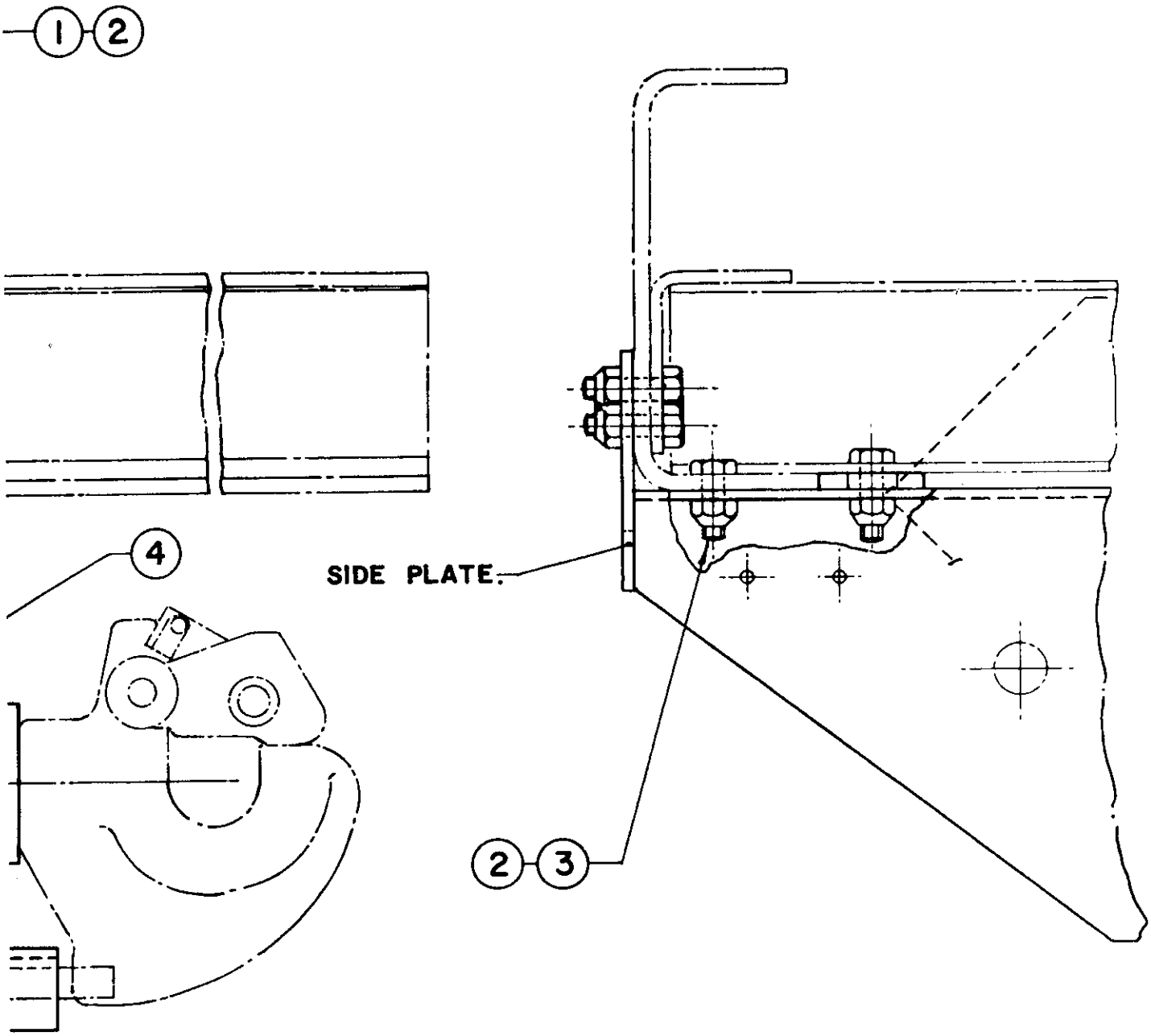


FIG 1 - INS



TION OF TOWING FRAME

END

TRUCK, CARGO, 2 1/2 TON, GS, WITH WINCH, NO 1 MK 3

LOCK, PTO LEVER

MODIFICATION INSTRUCTION

REFERENCE:- AC in WM No 22414/22.

SUMMARY

1. This instruction details the modification of the lever PTO control to prevent the accidental engagement of the winch.

Estimated manhours to perform: 8·0

2. *Priority:* Group 2

3. *Vehicles affected:*

All subject vehicles.

4. *Items affected:*

Lever assembly PTO control

5. *Action required:* By RAEME workshops authorised to carry out field repair in accordance with WKSP A 850.

6. *Stores required:* (Availability of stores to be notified in VEH A 006).

Item No	*Stock No*	*Designation*	*Qty per Veh*
1	2520-66-019-0634	LEVER, CONTROL, fwd drive	1
2	5340-66-019-0580	RING, RETAINING, still, external 5/32 in bore size	1
3	5315-66-019-0632	PIN, GROOVED, HEADED, steel, 0·154 in dia by 13/16 in long	1
4	5315-66-024-5060	PIN, GROOVED, HEADLESS, steel, 0·310 in dia by 15/16 in long	1
5	5340-66-019-0633	RING, RETAINING, steel, external 5/16 in bore size	2
6	5310-66-012-6847	WASHER, FLAT, steel rd zinc coated, 1/4 in bolt size	1
7	5340-66-024-4059	SPRING, HELICAL, COMPRESSION, steel, 0·313 in id by 0·477 in od by 1·168 in lg	1
8	5315-66-017-5926	PIN, COTTER, split, mild steel, 3/32 in by 1/2 in	1
9	2520-66-024-6846	CONTROL ROD, PTO lever	1
10	2520-66-024-6847	GUIDE BRACKET, PTO lever	1
11	2520-66-024-6848	BRACKET, PTO lever	1
12	5306-66-010-9350	BOLT, MACHINE, UNF, 2A, R steel, hex hd, zinc coated, 5/16 in by 3/4 in	2
13	5310-66-019-3957	NUT, PLAIN, HEXAGON, UNF, 2B steel, formed, zinc coated, 5/16 in	2
14	5310-66-013-0070	WASHER, LOCK, spring steel, single turn rectangular section, cad plated, 5/16 in bolt size	2

7. *Stores removed:* (To be reduced to produce).

Existing Lock, PTO - ADE(V)225-727

DETAIL

8. a. Remove existing Lock PTO control, and grind off any exposed weld remaining on the floor.

b. Drill two 11/32 inch diameter holes in the floor in accordance with fig 1001 to fit item 11, bracket.

c. Prime and paint the reworked portion of the floor in accordance with WKSP B 700.

d. Disconnect and remove the Lever, assembly, PTO. Locate Guide bracket (item 10) and weld as shown in fig 1002.

e. Drill 5/32 inch diameter hole as shown in fig 1002 and replace lever.

f. Fit bracket (item 11) and tighten nuts and bolts as per fig 1001.

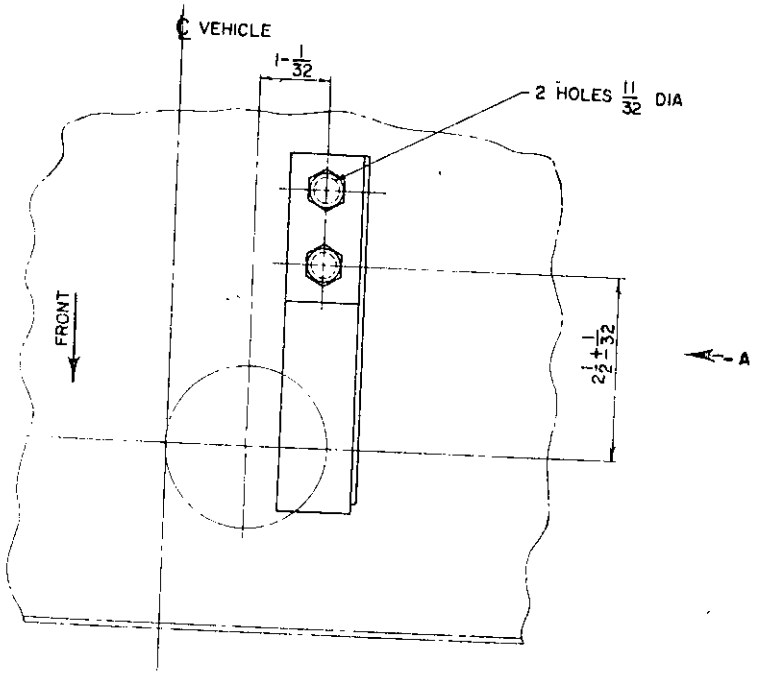
g. Assemble items 9, 7, 6 and 8 in accordance with fig 1003.

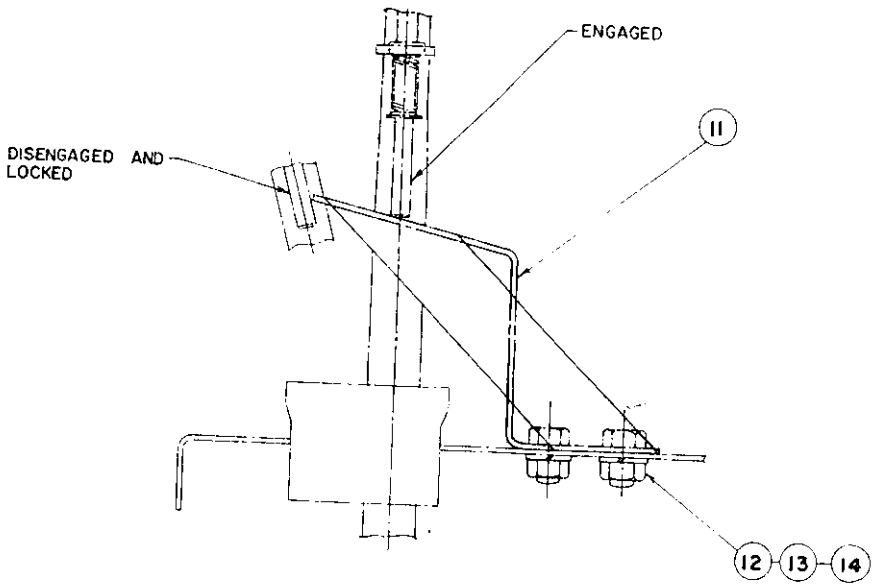
h. Assemble items 1, 3 and 2; connect item 9 to item 1 with item 4 and fasten with item 5 as shown in fig 1003.

j. Engage and disengage lever to ensure that the rod (item 9) locks in the disengaged position. If the rod will not locate in the disengaged position, adjust the Rod Assembly, Control to the required length.

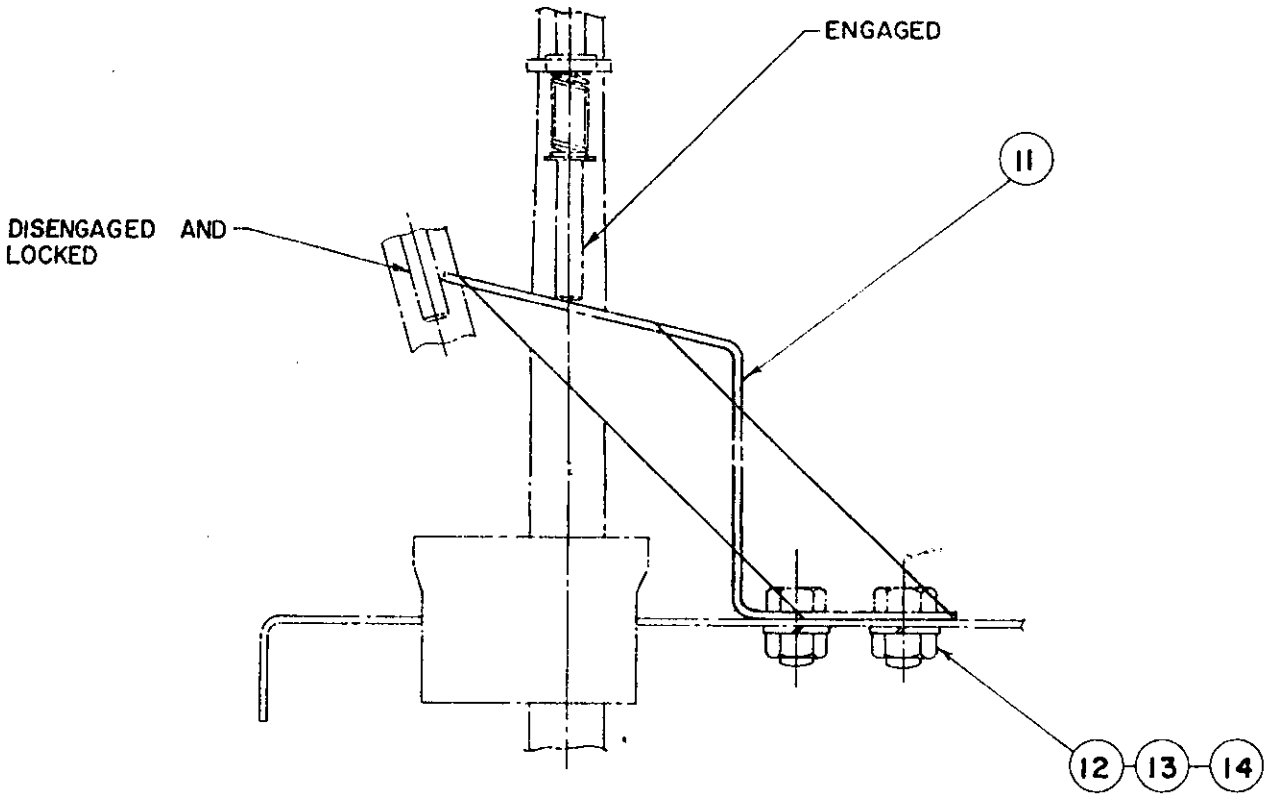
k. Prime and paint all surfaces damaged by welding and drilling in accordance with WKSP B 700.

NOTE:- The next page is Page 1001.

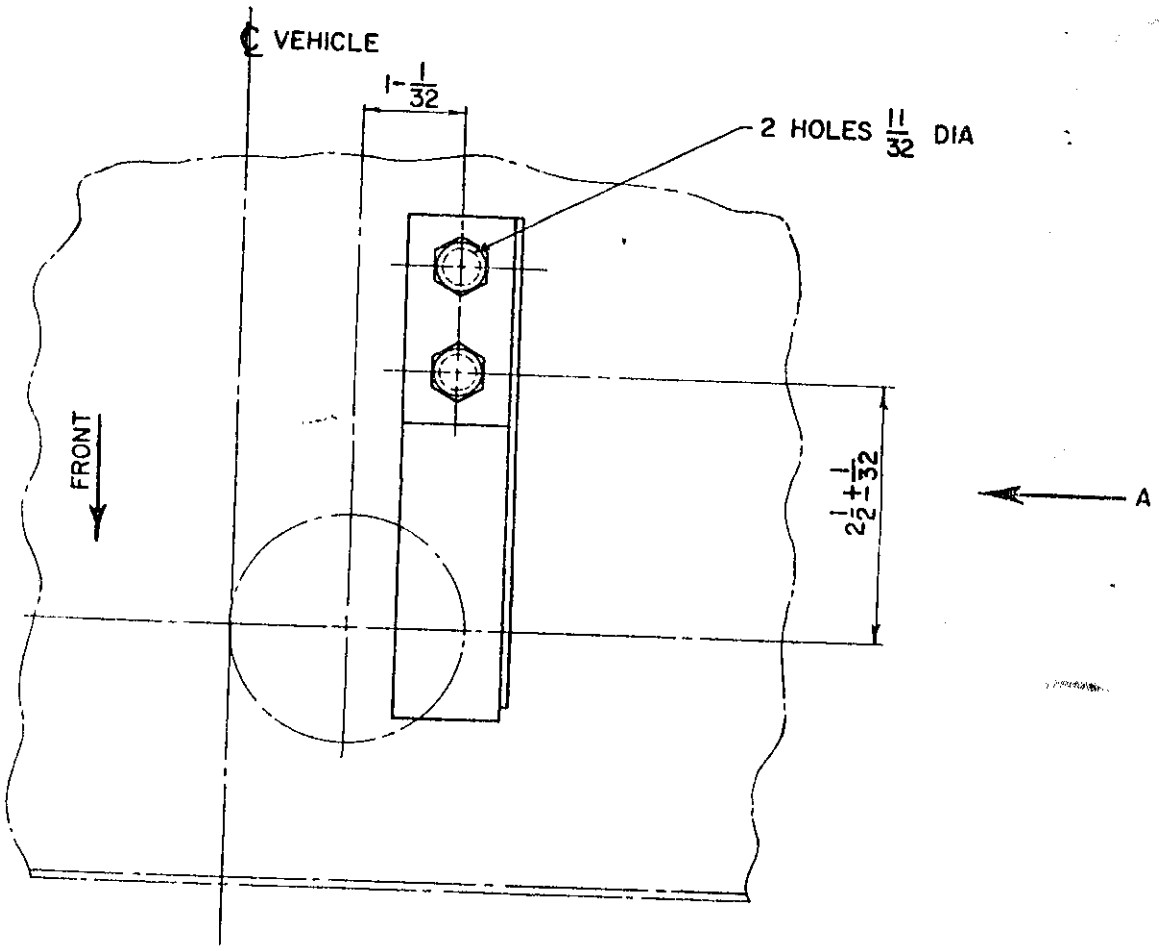




VIEW IN DIRECTION A
(REVOLVED 90°)



VIEW IN DIRECTION A
(REVOLVED 90°)



DISENG
LOCKE

FIG 1001 - BRACKET

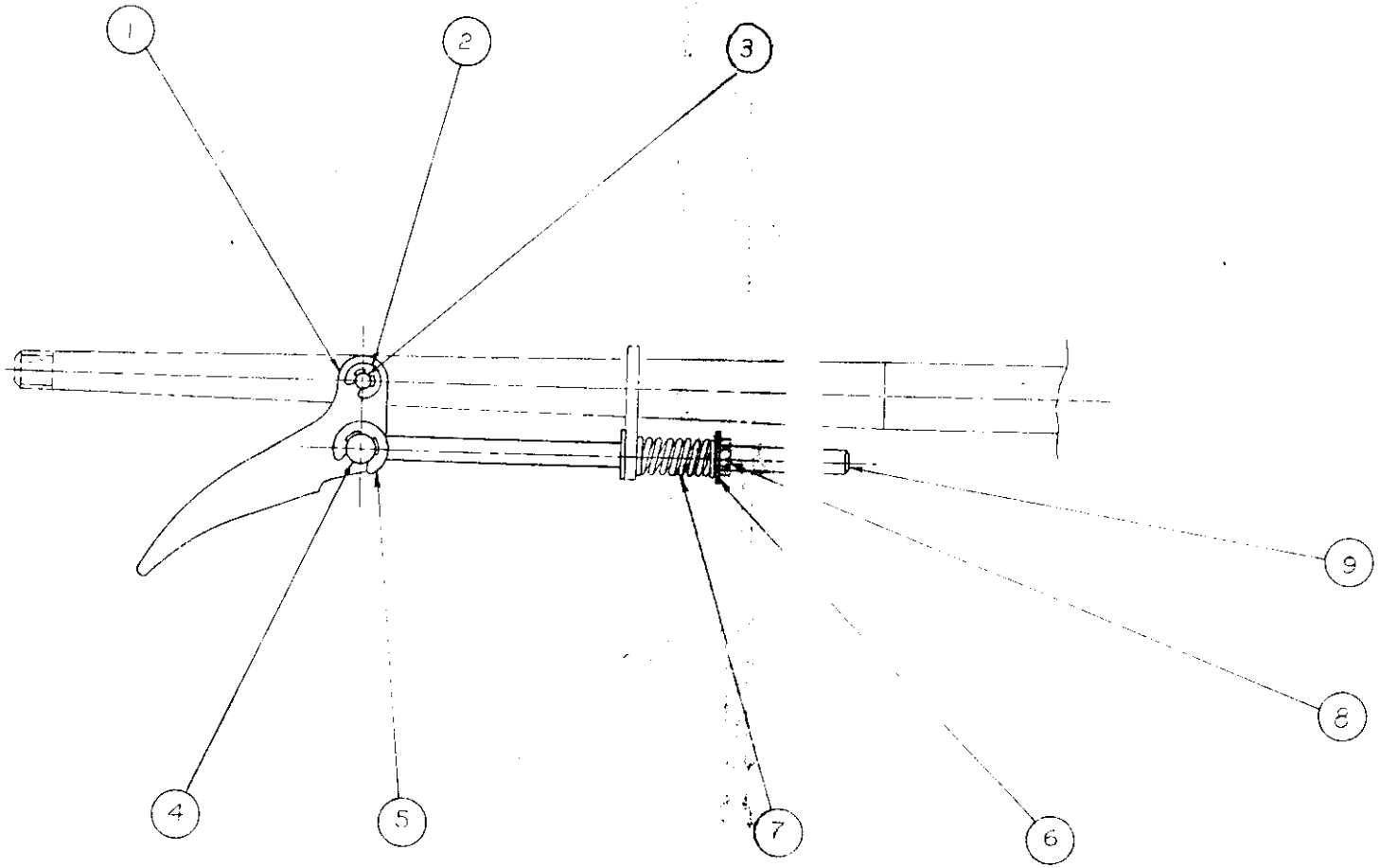


FIG 1003 - LEVER ASSEMBLY

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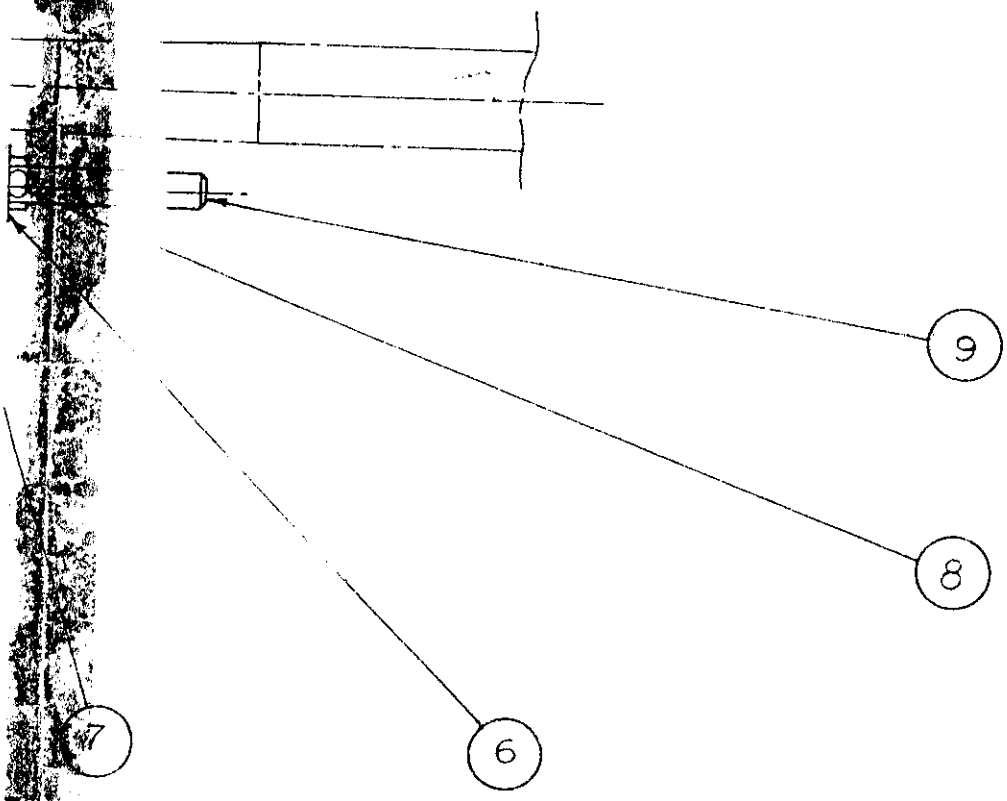
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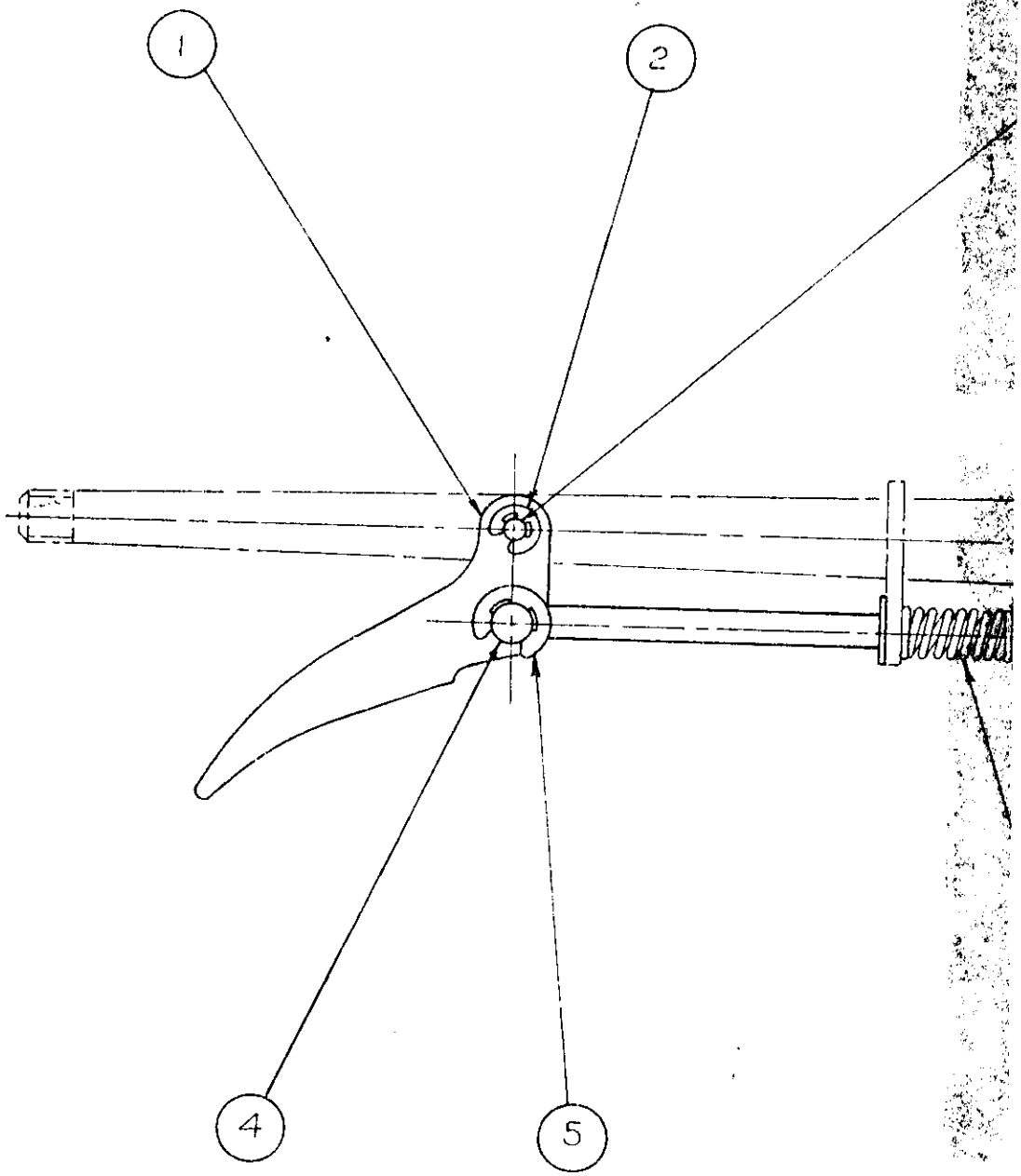


FIG 1003 - LEVER A

E N D

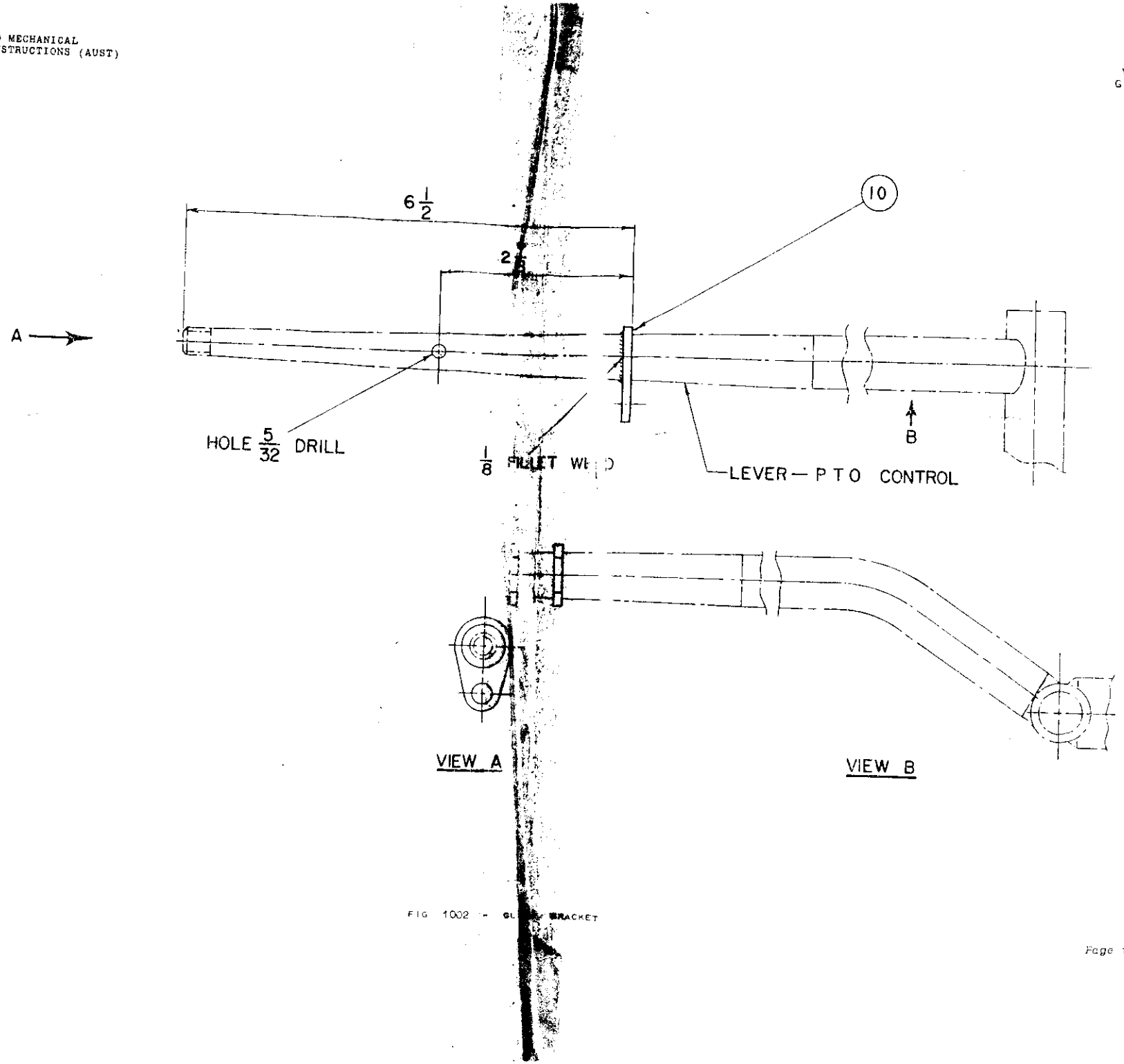
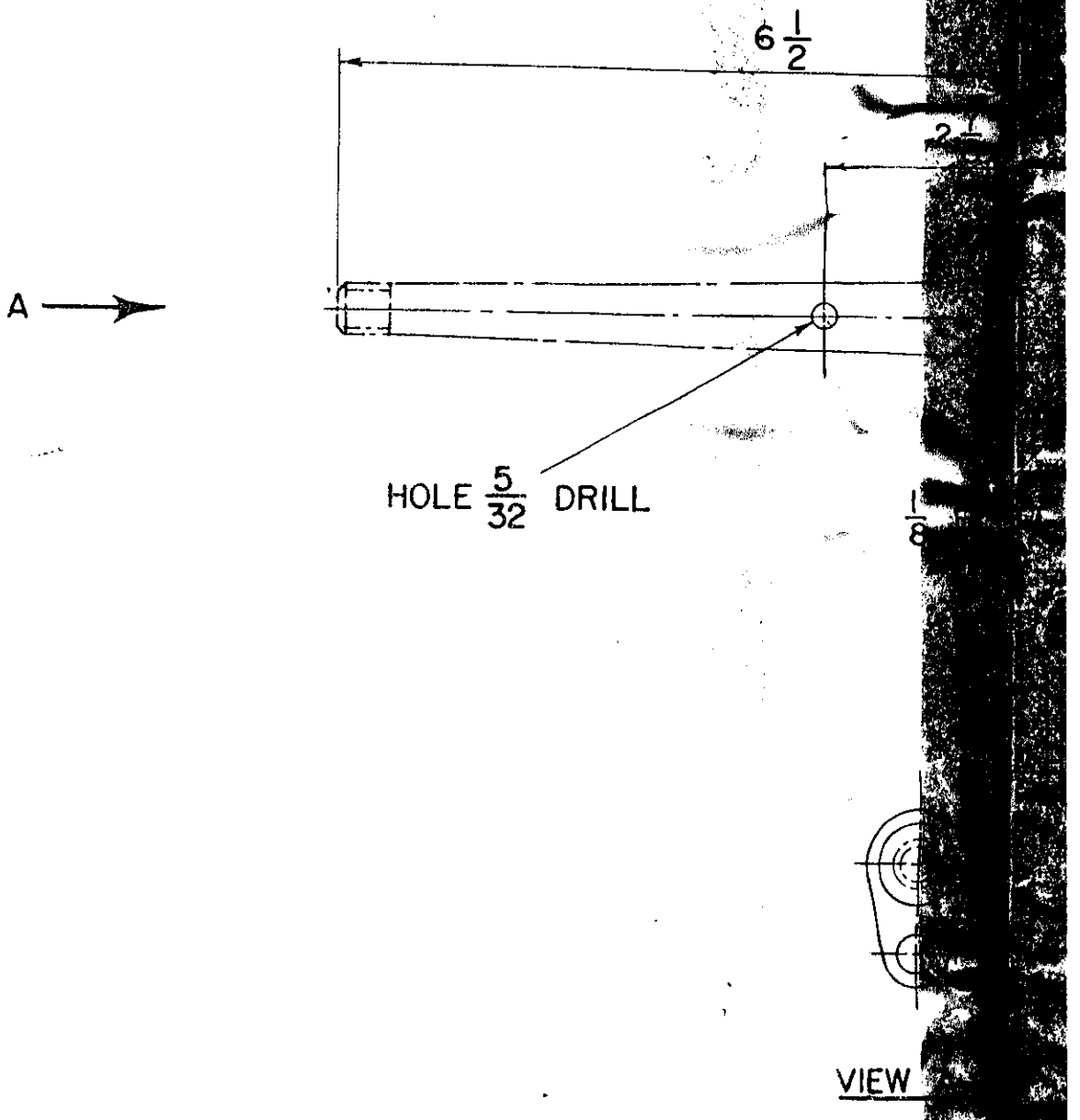


FIG 1002 - GL[illegible] BRACKET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HOLE 5/32 DRILL
1/8
VIEW

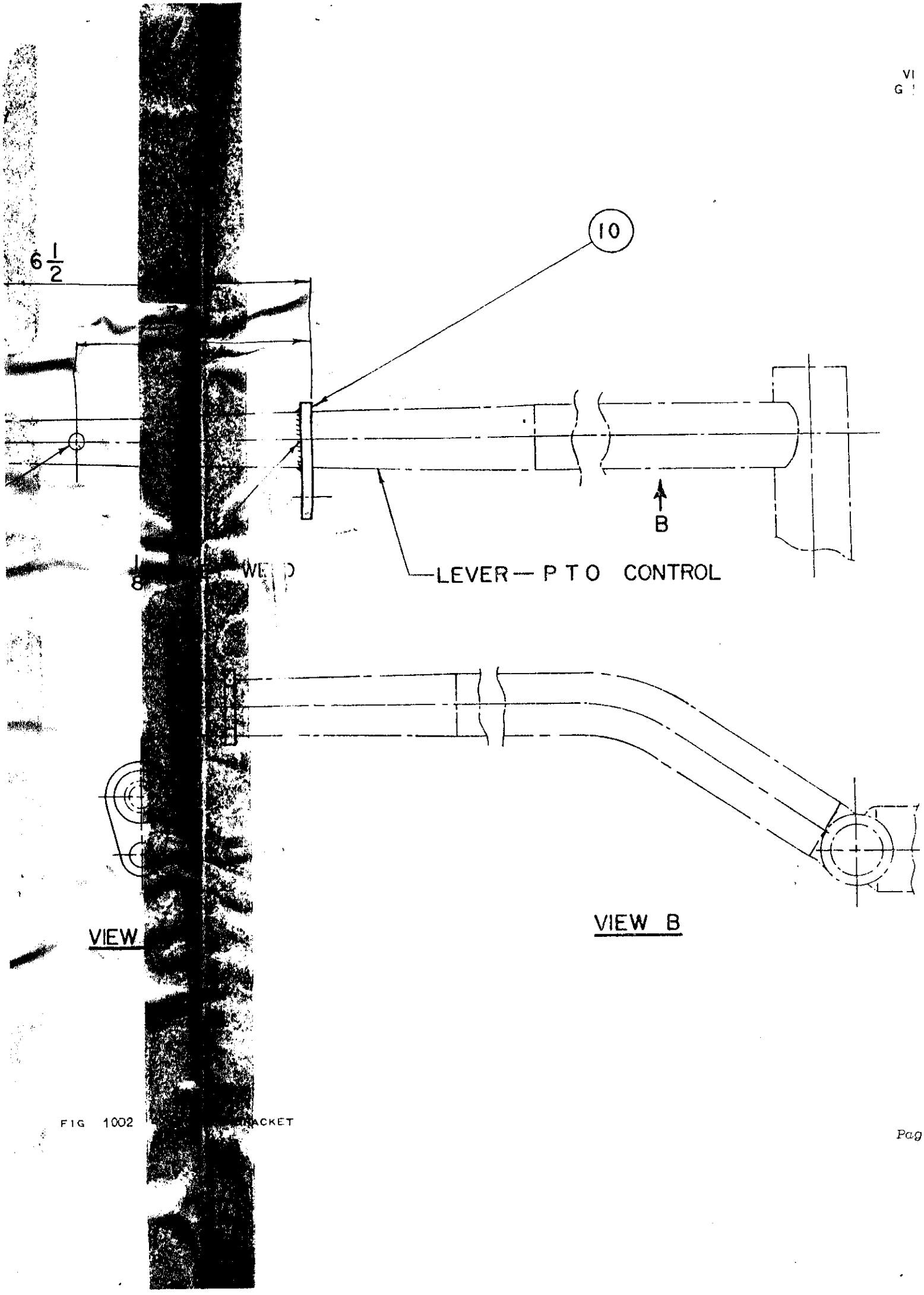


FIG 1002 BRACKET

TRUCK, CARGO, 2 1/2 TON GS, WITH WINCH, AUST NO 1 MK 3

TRAILER ATTACHMENT COCKS

MODIFICATION INSTRUCTION

REFERENCE:- AC in WM No 22414/25.

SUMMARY

1. This instruction details the repositioning of trailer attachment cocks, to prevent the cock handles being pulled to the "ON" position when the vehicle is operating in thick undergrowth.

Estimated manhours to perform: 1·0

2. *Priority:* Group 2

3. *Vehicles affected:*

All subject vehicles

4. *Items affected:*

COCK, PLUG, brass, two way, two port, 1/2 inch NPT RH thread (4820-00-350-6495)

5. *Action required:* By RAEME units authorised to carry out unit repairs and in accordance with WKSP A 850.

DETAIL

6. a. Loosen left and right hand pipe flare nuts from adaptors (4730-66-011-2837).

b. Loosen nuts plain, hexagon (5310-66-019-3956).

c. Rotate COCKS, plug, brass (4820-00-350-6495) 90 degrees (1/4 turn) so that the opening and closing handles are positioned at the top of the cocks.

d. Tighten nuts plain hexagon and pipe flare nuts.

e. Position both couplings (2530-66-019-4169) by tightening.

f. On completion of this modification the figure "2" is to be defaced on the modification plate fitted to LH chassis side member.

E N D

TRUCK, CARGO, 2 1/2 TON, GS, NO 1 MK 3

CONNECTION OF TAIL LIGHT TO HEAD/PARK LIGHT SWITCHES

MODIFICATION INSTRUCTION

REFERENCE:- *AC in WM No 22414/23.*

NOTE:- *This instruction supersedes Provisional EMEI VEH G 557-24, all copies of which are to be destroyed. There is no significant change.*

SUMMARY

1. This instruction details the modification for the tail lights to be wired into the park and head light circuits to comply with AMVSC regulations and VEH A 510 para 11 requirements.

Estimated manhours to perform: 2·5

2. *Priority:* Group 2

3. *Modification to be applied to:* All stocks.

4. *Item affected:*

5930-66-018-3501 Switch Toggle, SPDT, 32 V, 10 amp, 3 position

5. *Action required:* By RAEME unit, field and base workshops in accordance with WKSP A 850.

6. *Stores required:* (AHQ to advise Comds on availability).

Item No	*Stock No*	*Designation*	*Qty*
1	5930-66-011-0887	SWITCH, toggle, SPDT	1

7. *Stores removed:* (To be disposed of as scrap).

Item No	*Stock No*	*Designation*	*Qty*
1	5930-66-018-3501	SWITCH, toggle, SPDT, 32 V, 10 amp, 3 position	1

DETAIL

8. a. Remove the existing headlight switch and replace with item 1 (para 6).

b. Rewire the light circuits as per fig 1.

c. Plate designation (top plate) block out "park" and substitute "head". Where marked "Tail lights" block out "lights" only and substitute "park".

d. Plate designation (bottom plate). Block out "headlights" and substitute "on".

e. Letters to be blocked out with black matt paint and substituted letters to be painted on in white.

f. Test lights for correct operation.

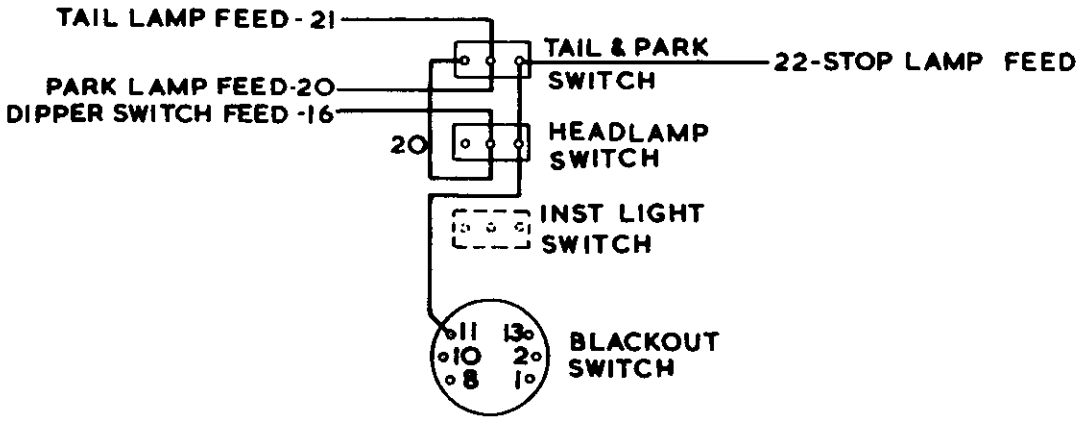


FIG 1 - HEAD, TAIL AND PARK LIGHT CIRCUIT

E N D

TRUCK, CARGO, 2 1/2 TON GS, WITH WINCH, AUST, NO 1 MK 3

CHANGING OF POSITIVE TO NEGATIVE EARTH

Modification Instruction

NOTE:– *This instruction supersedes previous issues, all copies of which are to be destroyed. Significant changes are sidelined.*

REFERENCE:– *AC in WM No. 2241/27.*

SUMMARY

1. This instruction details the change over from positive to negative earth on the above equipment.

   Estimated manhours to perform: 2·0.

2. *Priority:* Group 2

3. *Modification to be applied to:* All stocks.

4. *Items affected:*

   Charging and ignition circuits.

5. *Action required:*

   a. By RAEME unit, field and base workshops in accordance with WKSP A 850.
   b. Vehicles on issue should be modified as soon as possible.

6. *Stores required:* (Available as normal technical expense stores).

Item	*Stock No*	*Designation*	*Qty*
1	LV6/MT4/17–T–3695	BATTERY TERMINAL, negative or positive	2

7. *Stores removed:* (To be disposed of as scrap).
   NIV Battery terminals (qty 2)

DETAIL

8. a. Disconnect the negative and positive battery terminals and remove the battery.

   b. Remove the battery terminals by cutting through the battery leads directly behind each terminal.

   c. Solder on the replacement terminals; one to the Lead acid battery cable, battery to ground (6140–66–013–2904), and one to the Lead acid battery cable, battery to starter (6140–66–018–3294), using pulped asbestos to protect the PVC insulator sheath.

   d. Remove the instrument cluster panel and reverse the current flow through the ammeter by interchanging the ammeter leads.

   e. Replace the instrument cluster panel.

   f. Reverse the current flow through the ignition coil by interchanging the low tension leads.

   g. Before starting the engine, momentarily touch a lead or screwdriver across GEN and BAT terminals on the regulator. The surge of the battery current to the generator will correctly polarise the generator.

   h. Stencil "NEGATIVE EARTH" in 1 inch yellow lettering on the left hand side of the battery compartment.

   j. Stencil on the side of the engine cover as near as possible to the BOX, INTERCONNECTING ASSEMBLY, in ½ inch red lettering, the following warning:–

THIS VEHICLE HAS A NEGATIVE EARTH SYSTEM
DO NOT SLAVE START TO A POSITIVE EARTH SYSTEM

k. Stencil on the top of the BOX, INTERCONNECTING ASSEMBLY, in red, an arrow pointing to the warning, and in addition the word "*WARNING*".

l. Replace the battery and connect the battery leads, negative to earth.

NOTE:– Final battery position to be 180° from the original position.

m. Start the engine and check the vehicle for correct operation.

9. This modification is also to be applied to TRUCK CARGO, 2 1/2 Ton, GS, Aust No. 1 Mk 1 and TRUCK CARGO, 2 1/2 Ton, GS, With Winch, Aust No. 1 Mk 2.

10. In the event of any warning sign becoming wholly or partially obliterated due to patch painting or any other means it is to be immedaitely repainted.

End

TRUCK, CARGO, 2 1/2 TON, GS, WITH WINCH, IHC, NO 1 MK 3

FUEL LINE - RE-ROUTING

MODIFICATION INSTRUCTION

REFERENCE:- AC in WM No 2241 4/29.

SUMMARY

1. This instruction details the re-routing of the fuel lines to prevent vaporisation, cracking of the fuel lines and to standardise earlier production models with later type.

Estimated manhours to perform: 9·0

2. *Priority:* Group 2

3. *Vehicles affected:*

All subject vehicles.

4. *Items affected:*

Cab, two way fuel tap and instruction plate, fuel pipe lines and fittings

5. *Action required:* By RAEME workshops authorised to carry out field repair in accordance with WKSP A 850.

6. *Stores required:* Available through normal RAAOC channels

Item No	*Stock No*	*Designation*	*Qty per Veh*
	2540-66-026-2821	MODIFICATION KIT, FUEL LINES comprising:-	
1	ADE(V)94-500	PIPE, fuel assembly	1
2	ADE(V)225-805	BRACKET	1
3	5325-66-026-2986	GROMMET, RUBBER, 1 in od by 3/8 in dia hole by 3/4 in od groove by 1/16 in w groove	2
4	IHC Pt No 120522	CLIP, closed	2
5	5305-66-019-3653	SCREW, machine, UNF, 2A, SAE grade 5 steel, hex hd, zinc coated, 1/4 in by 5/8 in lg	2
6	5310-66-015-5872	WASHER, LOCK, spring steel, single turn square section, cad plated, 1/4 in, bolt size	2
7	5310-66-015-5012	NUT, plain, hexagon, UNF, 2B, 'A' steel, cad plated, 1/4 in	2
8	IHC Pt No 191406	UNION, tube, flared	1
9	ADE(X)541-2	PIPE, fuel cock, assembly	1
10	IHC Pt No 115269	FASTENER, clip	1
11	5305-66-019-3671	SCREW, MACHINE, UNF, 2A, SAE grade 5, hex hd, zinc coated, 5/16 in by 1 3/8 in lg	1
12	5325-66-026-2987	GROMMET, RUBBER, 1 5/16 in od by 7/16 in dia hole by 1 1/16 in od groove by 1/16 in w groove	1

7. *Stores removed:* (Reduce to produce).

(ADE(V)225-411) PIPE ASSY, fuel cock to fuel pump flexible hose

DETAIL

8. a. Disconnect and remove Pipe Assembly, Fuel Cock to Fuel Pump Flexible Hose fitted between Hose Assembly, rubber, fuel, and Cock Plug, 2 way, fuel tank selector.

b. Disconnect Pipe, Fuel Cock to RH tank and Pipe Assembly, Fuel Cock to LH tank, which are fitted to Cock Plug, 2 way fuel tank selector, from flexible hoses at the cock plug end only.

c. Remove the Cock Plug, 2 way fuel tank selector with flexible hoses attached, and Plate, instruction fuel tank selector, from their existing positions on the cab floor.

d. Drill a 5/8 inch diameter hole in the right hand side of the cab floor, behind the driver's seat, in the position detailed in fig 1 and fit the existing Cock Plug, 2 way fuel tank selector, with the selector lever in the position shown in figs 1 and 2.

e. Drill two 13/16 inch diameter holes through the rear cab cross member as detailed in fig 1 to take Pipe, Fuel Cock, Assembly (item 9).

f. Fit Pipe, Fuel Cock, Assembly (item 9) as shown in fig 1 to Cock Plug, 2 way fuel tank selector and to Pipe, Fuel Assembly (item 1) using Flared Tube Union (item 8). Connect Pipe, Fuel Assembly (item 1) to Hose Assembly, rubber, fuel and tighten all connections between petrol pump and cock plug.

g. Cut through Grommets (item 3) and place around Pipe, Fuel Cock, Assembly (item 9), one in front and one in rear of the channel cross-member, slide and fit into the two 13/16 inch diameter holes, one in each, as shown in fig 1.

h. Clip Pipe, Fuel Assembly (item 1) into existing fastener clip. Drill a 17/64 inch diameter hole through the left hand longitudinal cab plate as shown in fig 1. Press and fit the additional Fastener Clip (item 10) into this hole, clip and secure Pipe, Fuel Assembly (item 1) as illustrated in fig 3.

j. Disconnect the Pipe, Fuel Cock to RH tank (ADE(V)225-409) and Pipe Assembly, Fuel Cock to LH tank (ADE(V)225-410) from the Extension Clip (IHC Pt No 88174H).

k. Remove the lower nut and washer from the front right hand Loop Lashing (Stock No 2510-66-010-5802) situated behind the right hand front spring rear hanger. Reverse the Extension Clip by revolving 180° as shown in fig 4, replace and tighten existing washer and nut.

l. Fit Pipe, Fuel Cock to RH tank and Pipe Assembly, Fuel Cock to LH tank to the Extension Clip, as illustrated in fig 4, using the existing clips, bolt, washer and nut.

m. Remove machine screw securing Valve, double check (Stock No 2530-00-512-2364) and fit Bracket (item 2). Secure both valve and bracket to chassis member using the existing hole, replacement Machine Screw (item 11), and the existing washer and nut. Drill a 9/32 inch diameter hole through the chassis member in the position detailed in fig 1, using Bracket (item 2) as a templet. Fit Machine Screw (item 5), Washer (item 6), Nut (item 7), and secure bracket by tightening both securing bolts.

n. Bend Pipe, Fuel Cock to RH tank and Pipe Assembly, Fuel Cock to LH tank and reroute as illustrated in fig 5 to Cock Plug, 2 way, fuel tank selector, ensuring that the fuel pipes do not foul each other or any other fittings in close proximity. Connect the left and right hand fuel pipes to cock plug as shown in fig 1 and tighten.

o. Secure Pipe, Fuel Cock to RH tank and Pipe Assembly, Fuel Cock to LH tank to top of Bracket (item 2) as shown in figs 1 and 6, using two Clips Closed (item 4), Machine Screw (item 5), Washer (item 6) and Nut (item 7).

p. Drill two 9/64 inch diameter holes through the cab floor, using the existing Plate, Instruction, fuel tank selector as a templet for the hole positions and fit the instruction plate in the position as shown in fig 2. Secure with the two existing self-tapping screws.

q. Enlarge the original fuel cock plug hole to 3/4 inch diameter and blank off with Rubber Blanking Grommet (item 12).

r. Prime the carburettor by operating the hand primer on the fuel pump and ensure that the fuel lines and connections do not leak. Start engine, using fuel alternatively, from the left and right hand fuel tanks. Re-check for leaks.

s. Paint where necessary in accordance with WKSP B 700.

t. Deface the figure "4" on the modification plate on the left hand side of the chassis.

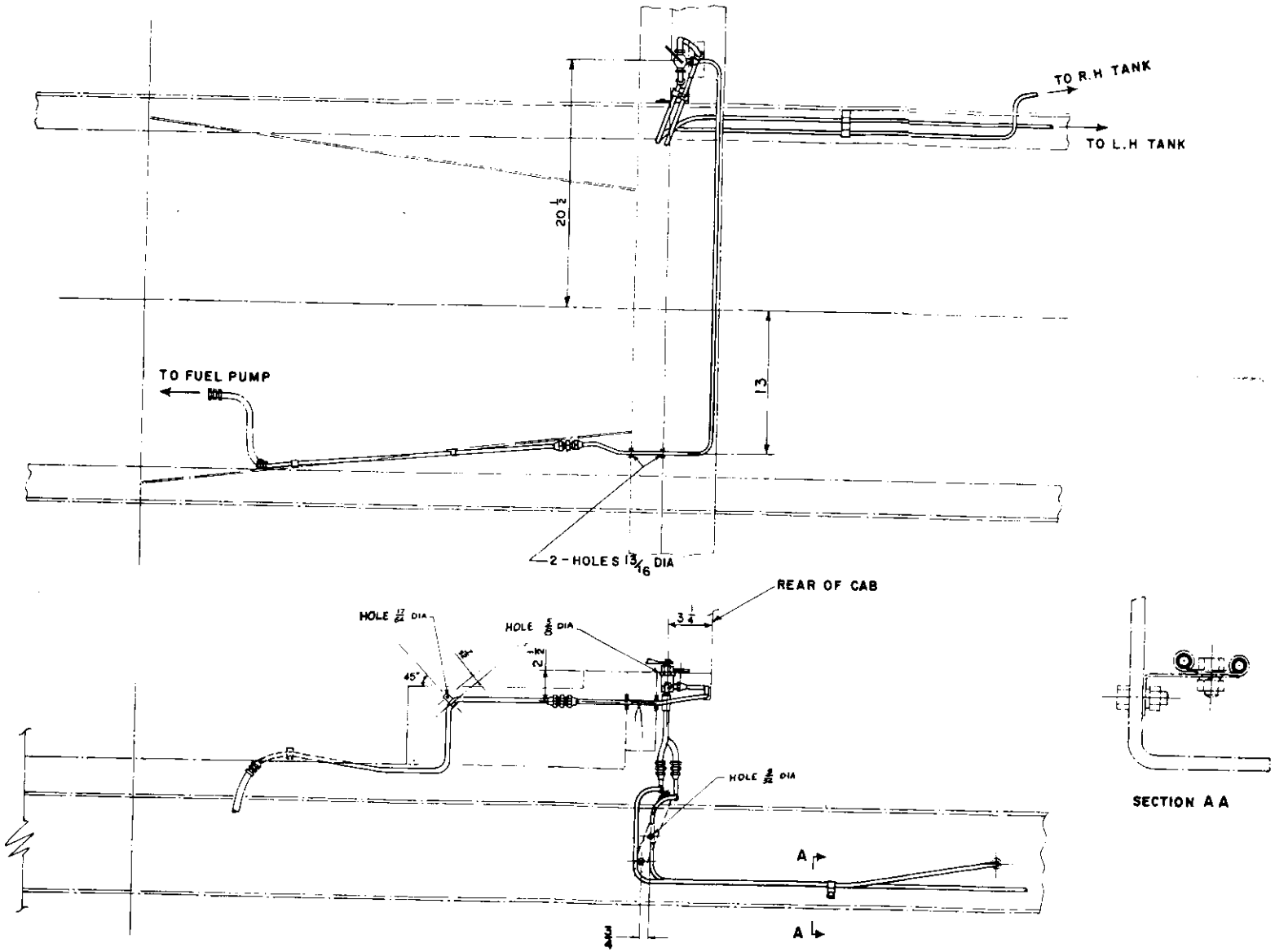
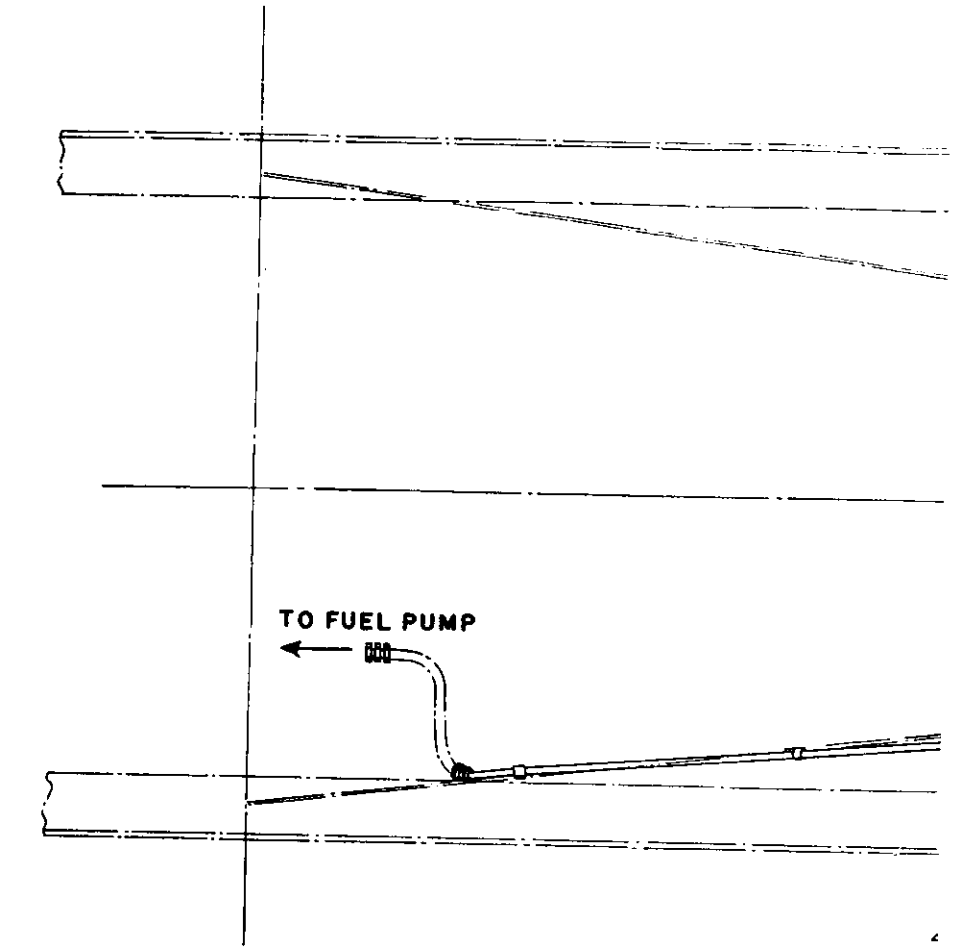


FIG 1 - FUEL LINE LAYOUT



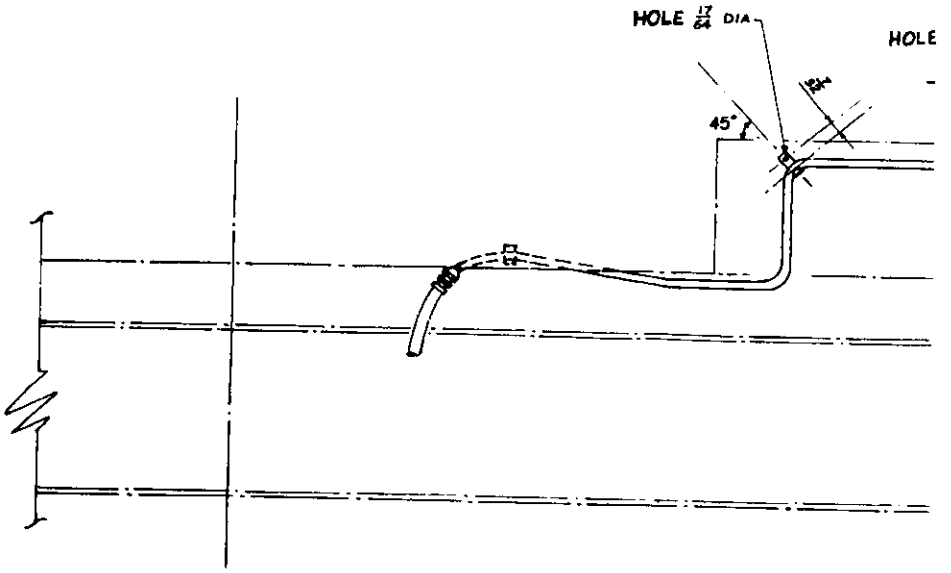
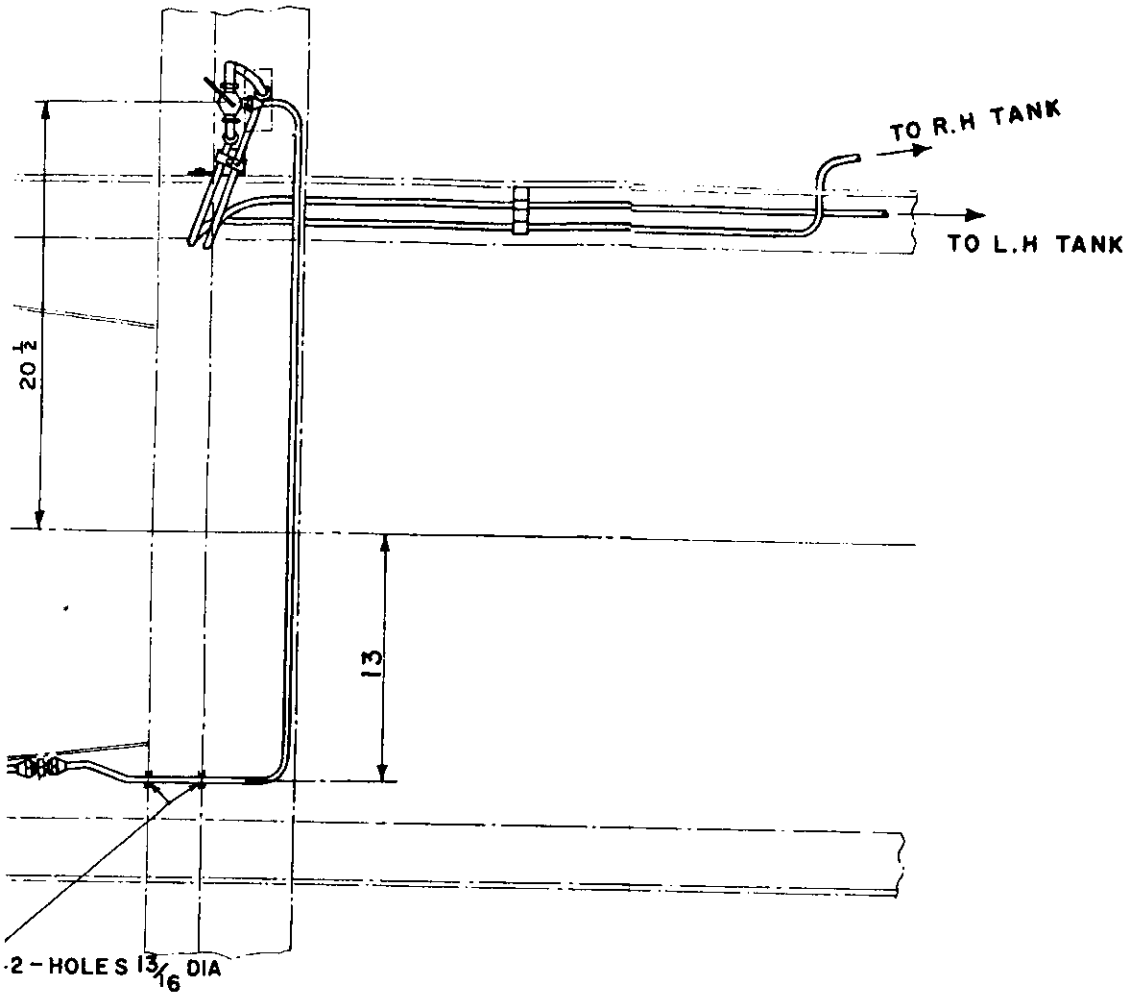
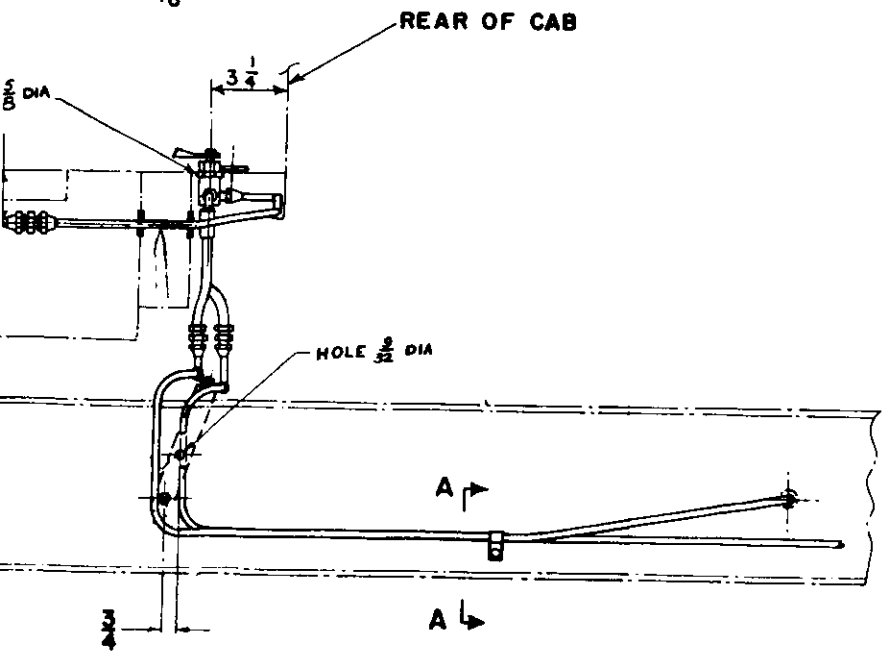
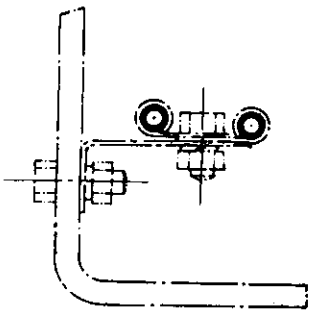


FIG 1







SECTION A A

FUEL LINE LAYOUT

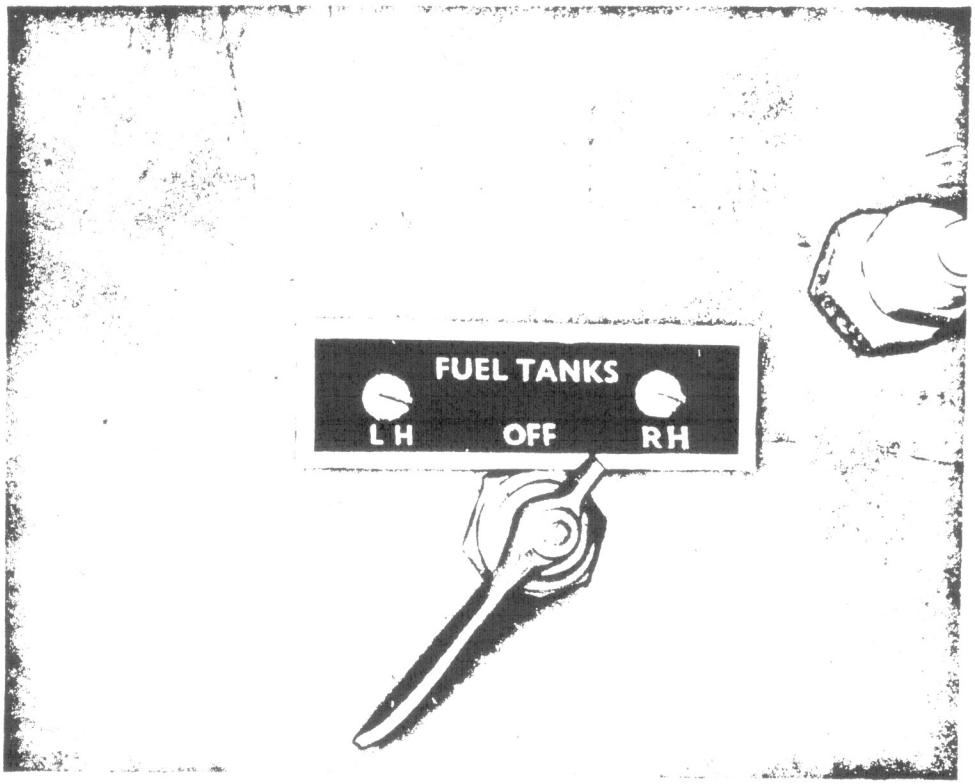


FIG 2 - SELECTOR LEVER

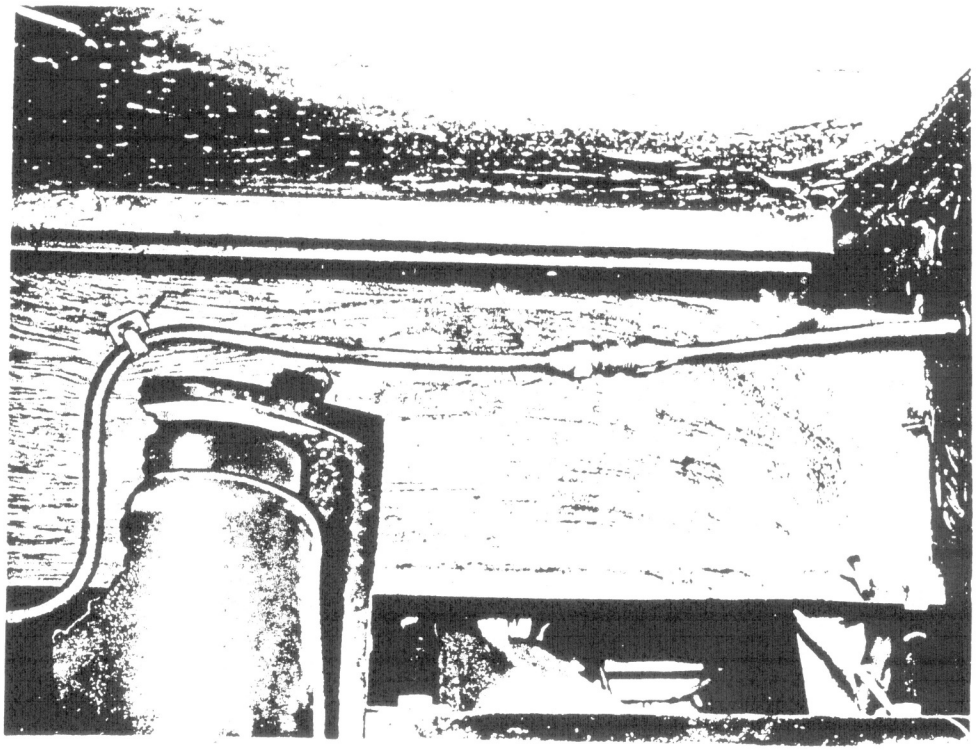


FIG 3 - SECURING FUEL LINE

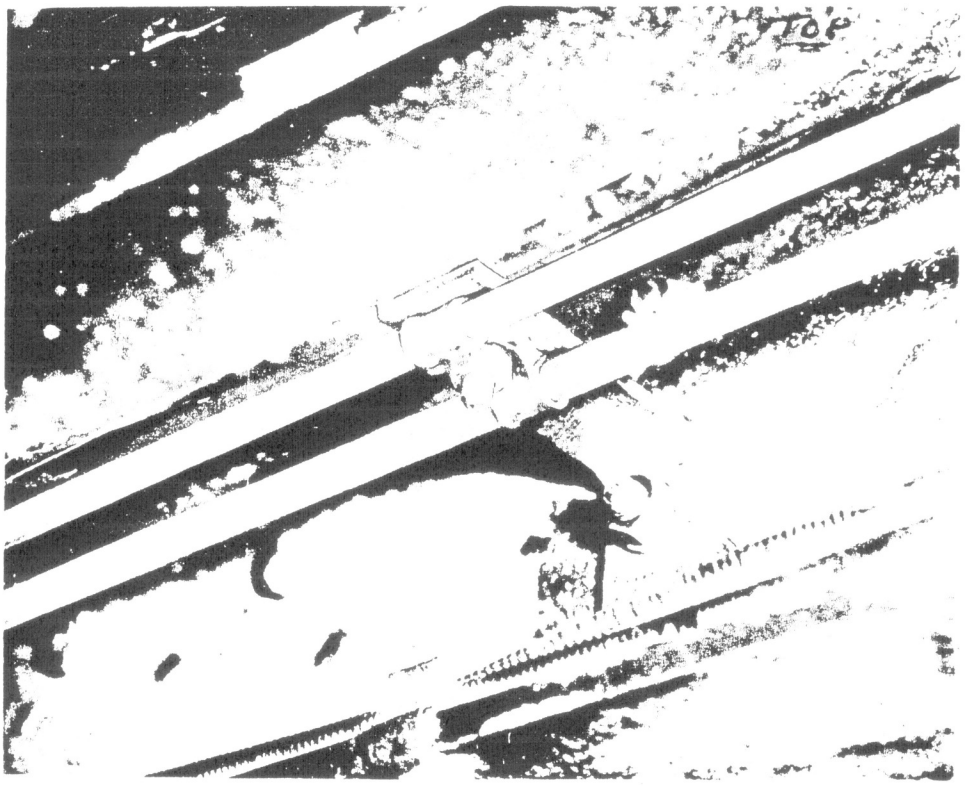


FIG 4 - EXTENSION CLIP REVERSED

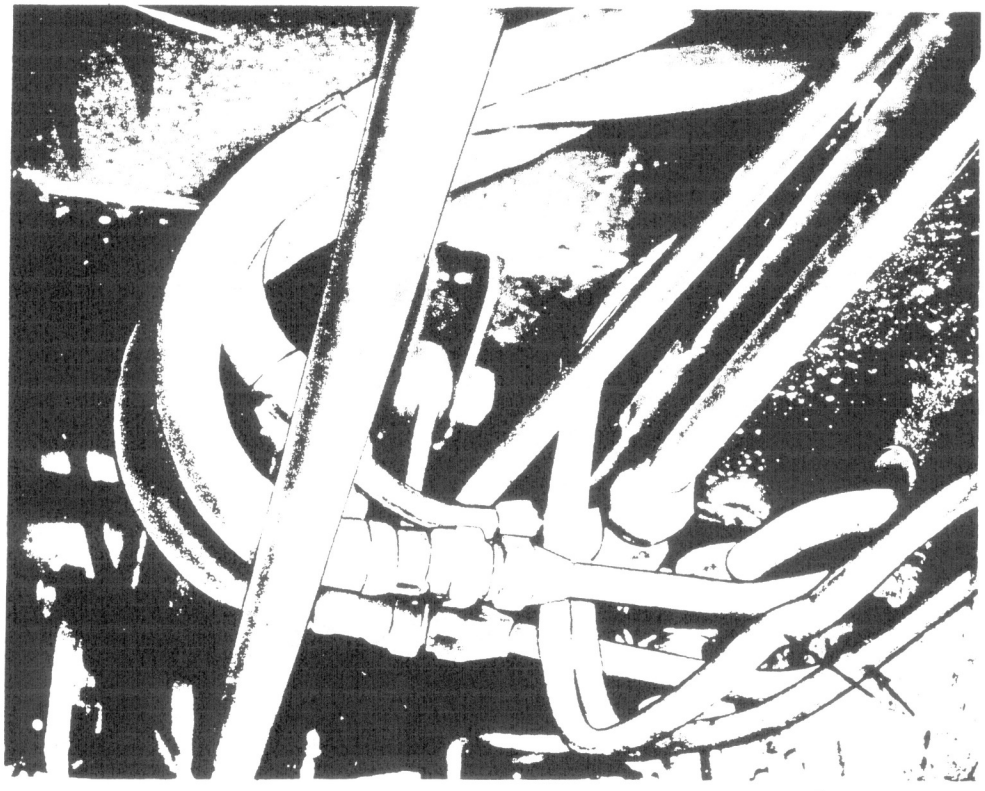


FIG 5 - RE-ROUTED FUEL LINE

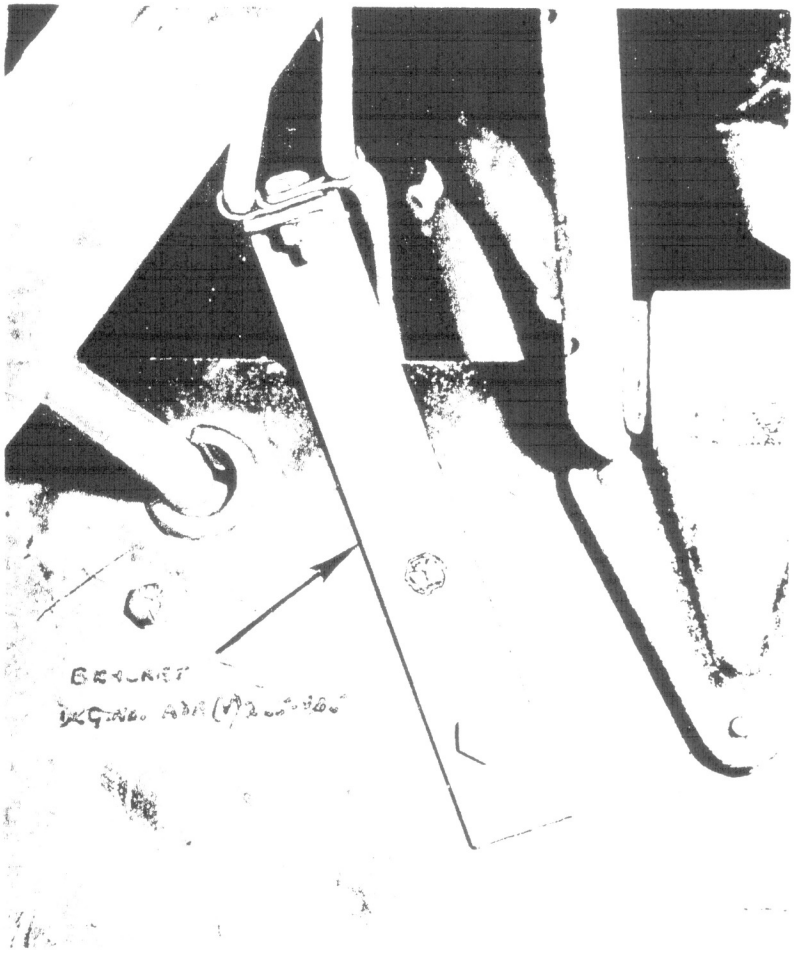


FIG 6 - BRACKET FITTING

E N D

TRUCKS, CARGO, 2 1/2 TON, GS, AUST NO 1, MK 3

REPLACEMENT OF EXISTING STARTING SWITCH

MODIFICATION INSTRUCTION

REFERENCE:- AO in WM No 2241 4/33

SUMMARY

1. This instruction details the replacement of the existing starter switch with a more robust push type starter switch.

Estimated manhours to perform: 2.

2. *Priority:* Group 1.

3. *Modification to be applied to:* All stocks.

4. *Items affected:*

5930-66-018-3500	SWITCH, TOGGLE, 2 Position, Non-locking
ADE(V)225-272	PLATE, Switch Mounting
ADE(V)225-679	PLATE, Designation.

5. *Action required:* By unit, field and base workshops in accordance with WKSP A 850 and before further use of the equipment.

6. *Stores required:*

Ser	*Stock No.*	*Designation*	*Qty*
1	5930-66-026-4417	SWITCH, STARTER, PUSH TYPE, PGM 105	1

7. *Stores removed:*

Ser	*Stock No.*	*Designation*	*Qty*
2	5930-66-018-3500	SWITCH, TOGGLE, 2 Position, Non-locking	1

DETAIL

8. a. Disconnect earth battery cable from battery.

b. Remove PLATE, SWITCH MOUNTING ADE(V)225-272 and disconnect the three cables secured to the starter switch and remove the SWITCH, TOGGLE, 2 POSITION, NON-LOCKING, (Stock No. 5930-66-018-3500).

c. Enlarge the existing hole for starter switch to 5/8 inch diameter in the PLATE, SWITCH MOUNTING, ADE(V)225-272.

d. Fit the replacement SWITCH, STARTER, PUSH TYPE, PGM 105 to the PLATE, SWITCH MOUNTING, ADE(V)225-272 with the terminals screws uppermost.

e. Enlarge terminal hole diameters of the three terminals fitted to the disconnected cables and connect cables 85 and 118 to the switch terminal on the left and cable 14 to the terminal on the right of the replacement SWITCH, STARTER, PUSH TYPE, PGM 105.

f. Replace PLATE SWITCH MOUNTING ADE(V)225-272 and erase the letters "ON" from the PLATE DESIGNATION ADE(V)225-679 directly underneath the starter switch.

9. Reconnect battery and test the starting system for correct operation.

10. Deface the figure 2 on the modification plate on the instrument panel.

E N D

TRUCK, CARGO, 2-1/2 TON, GS, NO 1 MK 3 G-557-3

REPLACEMENT OF FRONT CROSSMEMBER RIVETS WITH BOLTS AND REMOVAL OF CABIN LOWER CROSS BAR

MODIFICATION INSTRUCTION

REFERENCE:- AO in WM 22414/34.

SUMMARY

1. This instruction details: the removal of the front crossmember rivets, their replacement with bolts; and the removal of the cabin lower cross bar, to permit the engine be removed through the radiator opening.

Estimated manhours to perform: 3.0

2. *Priority:* Group 2.

3. *Vehicles Affected:* All subject vehicles.

4. *Items Affected:* Crossmember, front and cabin lower cross bar.

5. *Action Required:*

By RAEME Workshops authorised to carry out field repair in accordance with WKSP A 850.

6. *Stores Required:* (Available through normal channels).

Item No.	*Stock No.*	*Designation*	*Qty*
1	5306-66-019-3782	Bolt Machined, UNF 2A SAE Grade 5 Steel, hex hd, zinc coated, 3/8 x 1-1/4 inch	4
2	5310-66-010-6159	Nut Plain, hex UNF, 2B fit, A steel zinc coated	4
3	5310-66-016-5995	Washer Lock, spring steel, single turn, square section, cad plated	4

7. *Stores Removed:*

Rivets (4) and cabin lower cross bar. (To be disposed of as scrap).

DETAIL

8.
a. Remove bumper bar.
b. Remove muffler guard.
c. Remove brush guard stays.
d. Remove lower radiator mounting and drain radiator.
e. Remove upper cabin cross bar.
f. Disconnect the top radiator hose and oil cooler lines.
g. Disconnect the lower radiator hose and oil cooler lines.
h. Remove radiator and cowl.
j. Cut cabin lower cross bar flush with front cabin panels, smooth cut section and paint panels.
k. Remove head of rivets, on front cross member, and drive out rivets with suitable punch
l. Using items 1, 2 and 3, of para 6, retighten front crossmember to chassis.
m. Reassemble in reverse order to dismantling and check all connections for leaks

9. Deface the figure 3 on the chassis modification plate on left hand chassis side member (EMEI VEH G 557-21 refers).

E N D

TRUCK, CARGO, 2½ TON, GS WITH WINCH AUST NO 1 MK3
CLUTCH RETURN SPRING
MODIFICATION INSTRUCTION

Reference: A. AC in WM 22414/35, 23270/2, 23278/2, 23284/2, 24144/1, 24207/1, 24433/2 and 24434/2

General

1. **Introduction.** This instruction details the fitting of a modified clutch pedal return spring to the subject vehicles. It has been revised throughout.

2. **Estimated Manhours to Perform.** 3.0 (initial planning only).

3. **Priority.** Group 2. Vehicles on issue to units are to be modified when in workshops for repair. Vehicles in RAAOC depots are to be modified before issue to units.

4. **Modification to be Applied to.** All subject vehicles.

5. **Items Affected.** Brace, steering column and clutch pedal.

6. **Action Required.** By RAEME workshops authorized to carry out unit repair in accordance with WKSP A 850.

7. **Stores Required.** To be demanded through normal RAAOC channels.

Item	*DSN*	*Designation*	*Qty per Equip*
1.	2940–66–027–2459	MODIFICATION KIT, clutch return spring (comprising items 2 to 9):	1
2.	2520–66–026–2309	SPRING, HELICAL, EXTENSION, clutch pedal return (IHC 886648R1) (1)	
3.	2520–66–027–2457	ANCHOR, clutch pedal spring (IHC 886646R1) (1)	
4.	5305–66–019–3654	SCREW, MACHINE, UNF, 2A, SAE, grade 5 steel, hex hd, zinc coated, 1/4 in by 3/4 in lg (2)	
5.	5310–00–809–4058	WASHER, FLAT, steel, rd, cad plated, .286 in id, .630 in od by .065 in thk (1)	
6.	5310–66–014–1549	WASHER, FLAT, steel, rd, cad plated, small, 1/4 in (2)	
7.	5310–66–019–3956	NUT, PLAIN, HEXAGON, UNF, 2B, steel formed, zinc coated, bolt size 1/4 in (2)	
8.	5315–66–017–5921	PIN, COTTER, split, mild steel, 1/16 in by 3/4 in (1)	
9.	5315–66–026–2308	PIN, GROOVED, HEADLESS, clutch pedal spring (IHC 886647R1) (1)	

8. **Stores Removed.** To be disposed of in accordance with GEN P 050 – 059 series

Item	*DSN*	*Designation*	*Qty per Equip*
1.	5340–66–010–6136	SPRING helical extension	1

Detail

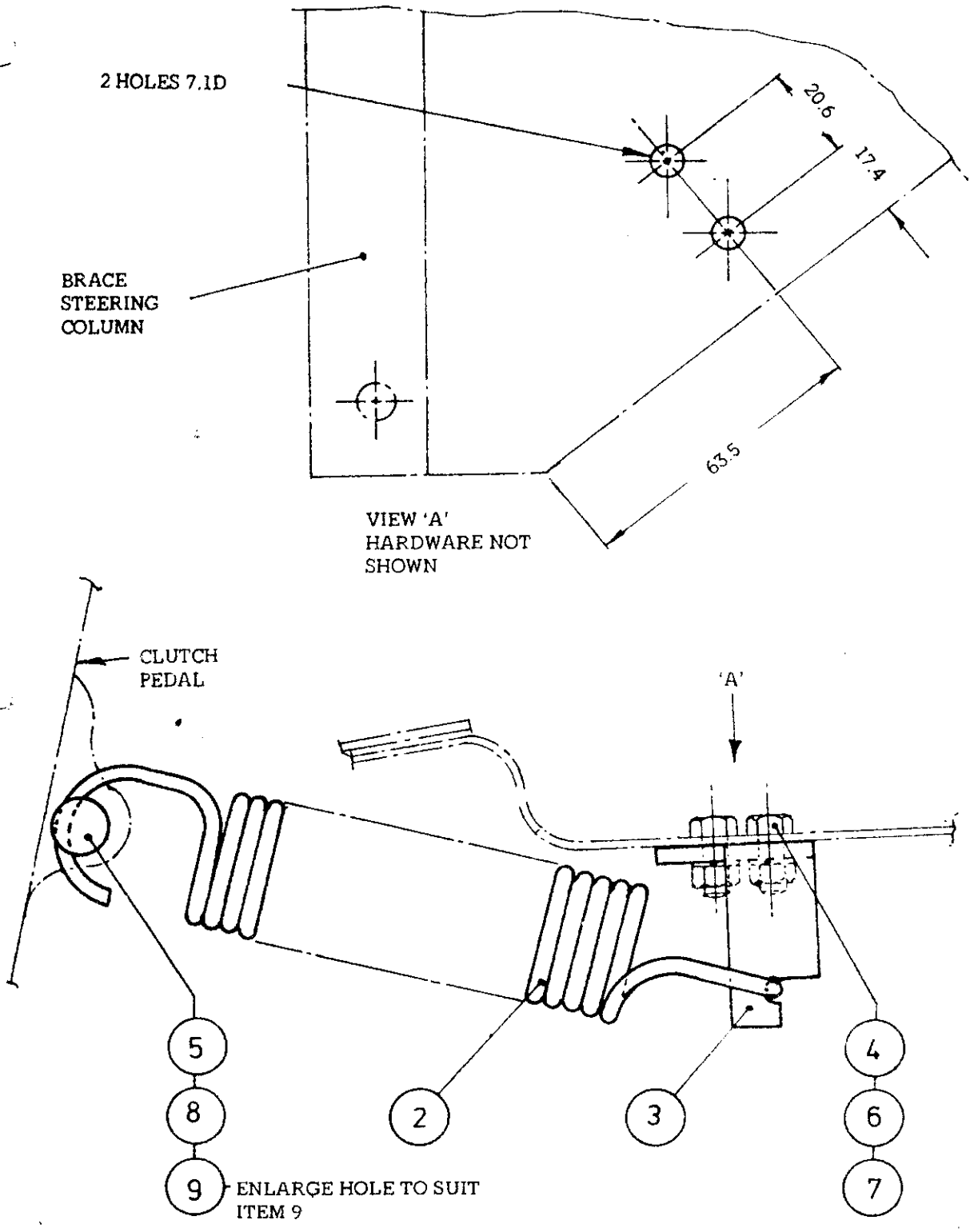
9. To carry out the modification proceed as follows:

   a. Remove the existing clutch pedal return spring.
   b. Drill two 7.1 mm diameter holes in the steering column brace vide Fig 1.
   c. Drill out the existing clutch pedal return spring hole to a diameter of 6.3 mm.
   d. Fit the clutch pedal spring anchor (item 3) to the steering column brace and secure with items 4, 6 and 7.
   e. Assemble items 5, 8 and 9 to the clutch pedal and connect the clutch pedal return spring (item 2).

10. **Modification Plate.** Deface the numeral 4 on the modification plate fitted on the instrument panel.

11. **Practical Imperial Equivalents Derived from Text and Drawing.**

Metric	*Imperial*	*Metric*	*Imperial*
6.3 mm	1/4 in	20.6 mm	13/16 in
7.1 mm	9/32 in	63.5 mm	2-1/2 in
17.4 mm	11/16 in		



DIMENSIONS IN mm

FIG 1 - FITTING OF CLUTCH RETURN SPRING

END

TRUCKS, 2½ TON GS MK 3 (ALL TYPES)
FUEL TANKS

MODIFICATION INSTRUCTION

Reference: A. AC in WM 27499/3

Introduction

1. This instruction details the replacement of fibre glass fuel tanks by steel fuel tanks.

NOTE: 1. If the fuel tank shields are not fitted to the vehicle being repaired, the modification detailed in VEH G 557–12 is to be carried out in conjunction with this work.

General

2. **Estimated Manhours to Perform.** 3.0 (initial planning only).

3. **Priority.** Group 1. The implementation of this modification will be controlled by a DEME Repair Programme. Vehicles may remain in service pending the procurement of modification stores.

4. **Modification to be Applied to.** All subject vehicles fitted with fibre glass fuel tanks.

5. **Items Affected.** Fuel tanks.

6. **Action Required.** By RAEME units authorized to carry out field and base repair in accordance with WKSP A 850.

7. **Stores Required.** To be demanded through normal supply channels.

Item	*DSN*	*Designation*	*Qty per Equip*
1.	2910–66–024–9784	TANK, FUEL, complete w/fuel sender and cap assembly filter	2
2.	4710–66–019–1818	TUBE, STEEL, mild welded, double wall, copper coated, 5/16 in OD, 22 SWG (0.028 in) wall thk, 12.1 in long	2
3.	4730–00–540–1880	NUT, TUBE COUPLING, steel, U/W 5/16 in OD tube, 1/2 UNF 2A, 45 deg seat	4
4.	4730–66–040–7097	NIPPLE, TUBE, double union, brass, 5/16 in OD tube, 1/2–20 UNF, 45 deg seat	2

8. **Stores Removed.** To be disposed of in accordance with GEN P series.

WARNING: On removal, fibre glass tanks are to be broken up completely and disposed of as worthless scrap, preferably buried. They are not to be stores for any length of time after removal because of the explosive danger they represent.

Item	*DSN*	*Designation*	*Qty per Equip*
1.	2910–66–017–4780	TANK, FUEL, with cap assembly filter, less fuel sender	2
2.	6680–66–025–1934	TRANSMITTER, LIQUID QUANTITY, fuel	2

Detail

9. To replace the fibre glass fuel tanks with steel fuel tanks, proceed as follows:

a. Disconnect the battery terminals.
b. Disconnect fuel gauge senders and earth leads.
c. Drain petrol from the RH and LH fuel tanks.
d. Unscrew the fuel line outlet pipes and fuel tank mounting strap nuts.
e. Remove the fuel tanks from support brackets.
f. Remove fuel tank sender units from the fibre glass tanks and fit to the steel fuel tanks (item 1). Replace gaskets as necessary.

NOTE: 1. Steel fuel tanks are supplied with sender unit already fitted. However, they are not compatible with the gauge in the cab and must be replaced by the sender units fitted to the fibre glass fuel tanks. The surplus sender units are to be returned to stock in accordance with paragraph 8.

g. Where necessary, carry out modifications as detailed in VEH G 557–12.
h. Remove the jerrican and oil can assembly rack and rework by cutting away the plate as shown by the unbroken line in Fig 2.
i. Reassemble in reverse order, using the existing fuel tank mounting straps. Ensure that the petrol tanks are kept as far away as possible from the Rack, Jerrican and Oil Can assembly.

10. When fitting steel fuel tanks with the outlet unit located approximately three inches from the centre of the filler tube, it will be necessary to modify the fuel tank pipe outlets as follows:

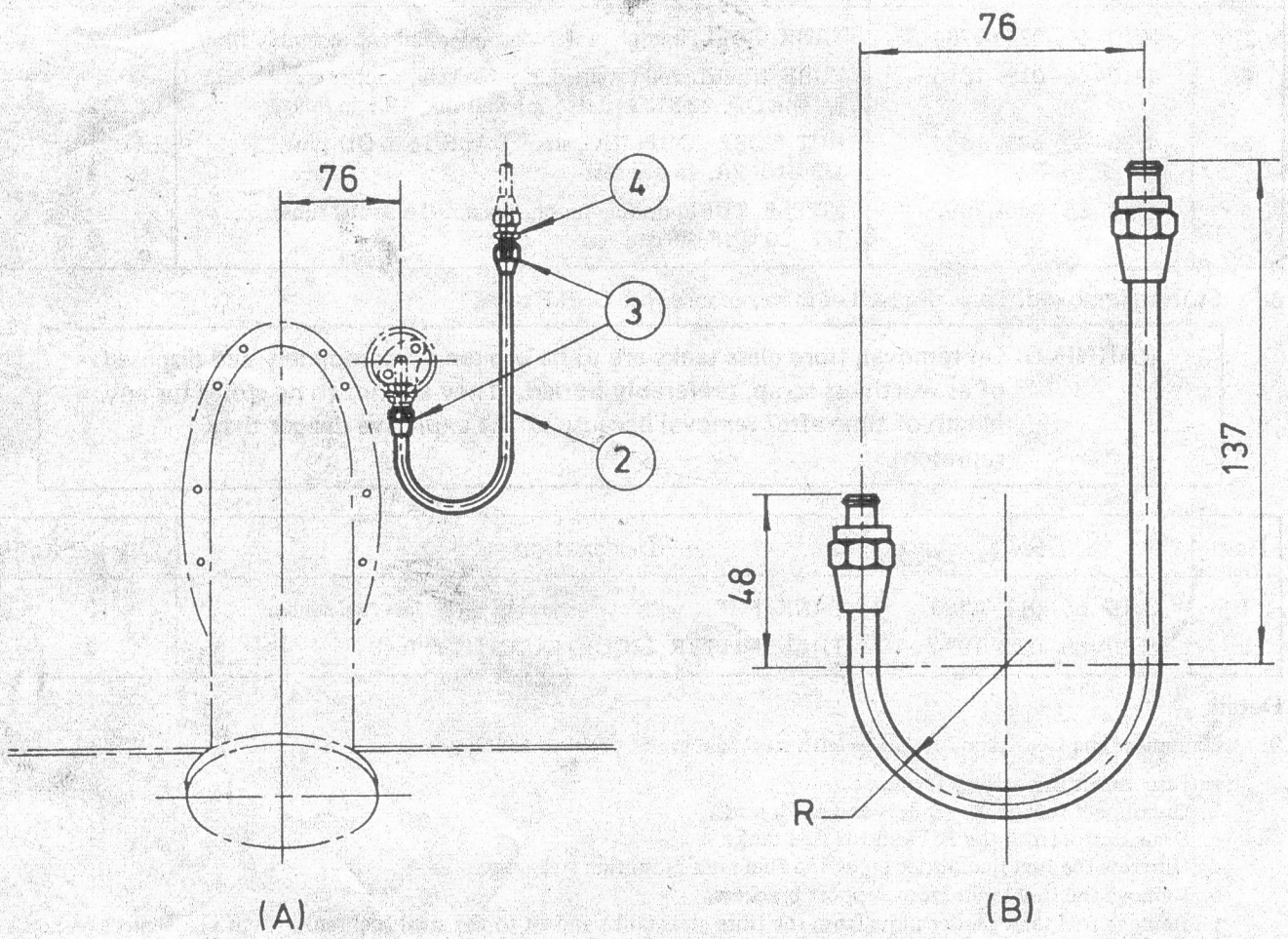
a. Remove the fuel tank outlets and refit with outlets turned 180 degrees, as detailed in Fig 1A.
b. Manufacture two pipes in accordance with Fig 1B, from items 2 and 3. Fit the pipes vide Fig 1A, using unions (item 4) to connect them to the fuel lines.

11. Refill the fuel tanks and reconnect the battery terminals. Start and run the engine, checking that both RH and LH tanks are functioning satisfactorily.

12. **Modification Plate.** Deface the numeral 11 on the modification plate fitted to the chassis rail,forward of the LH fuel tank rear mounting bracket.

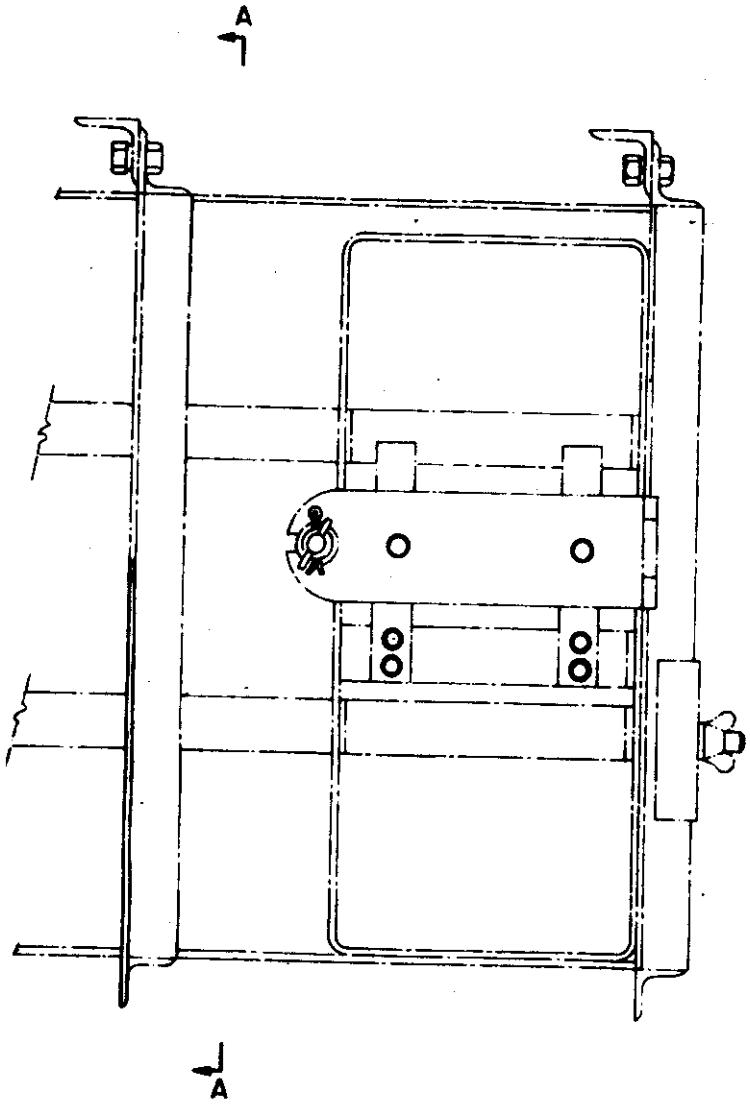
TABLE 1 – PRACTICAL IMPERIAL EQUIVALENTS DERIVED FROM DRAWINGS

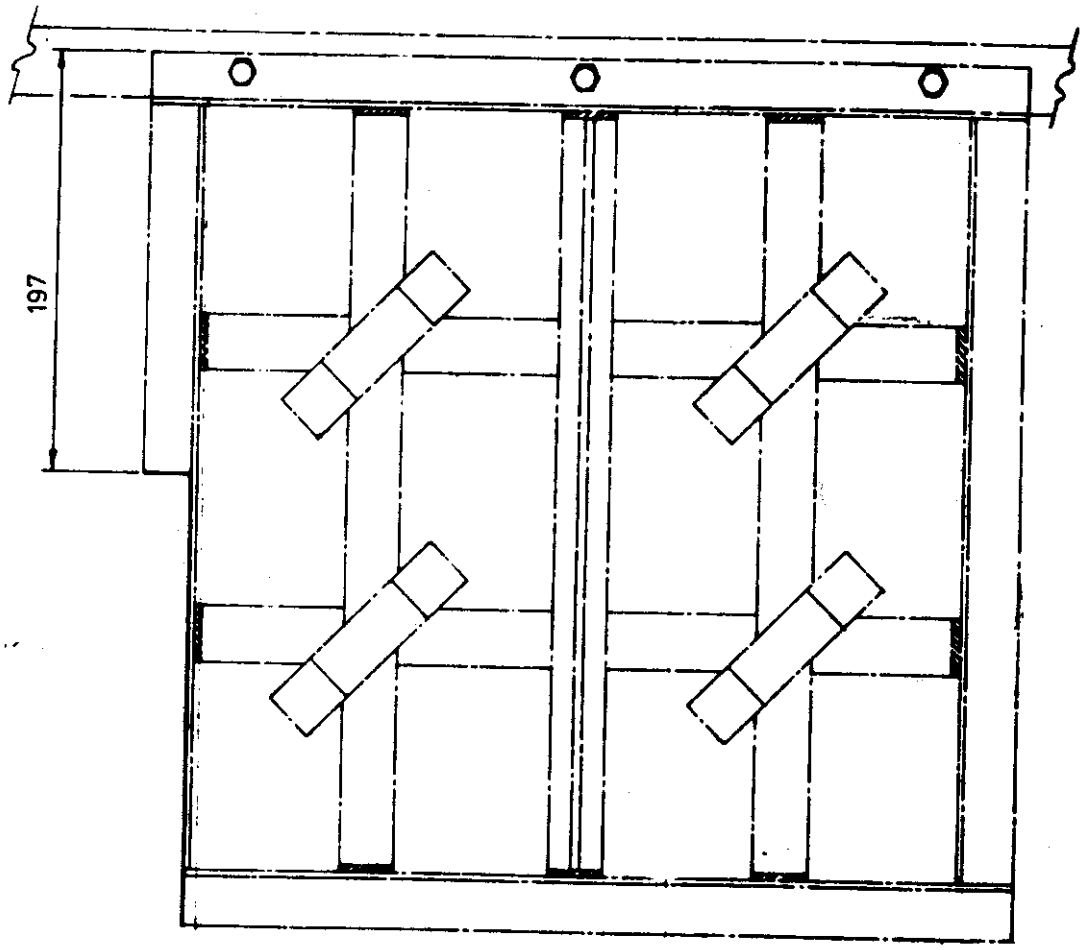
Metric	*Imperial*
48 mm	1-7/8 in
76 mm	3 in
137 mm	5-3/8 in
197 mm	7-3/4 in



NOTE: 1. Existing work, chain line
2. New work, full line
3. Dimensions in mm

FIG 1 – FUEL PIPE MODIFICATION





SECTION A-A

DIMENSIONS IN mm

FIG 2 – JERRICAN AND OIL CAN ASSEMBLY

END

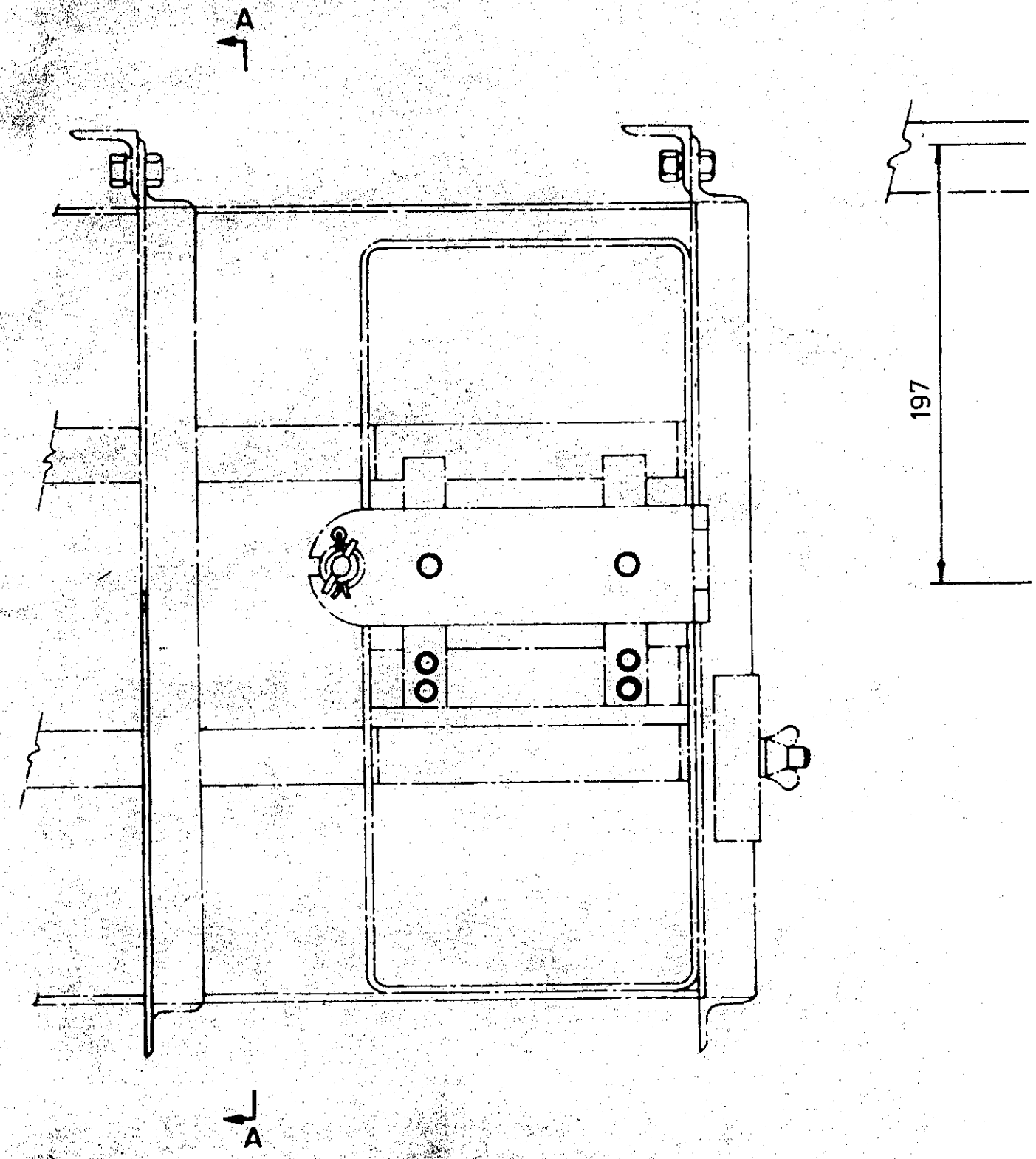
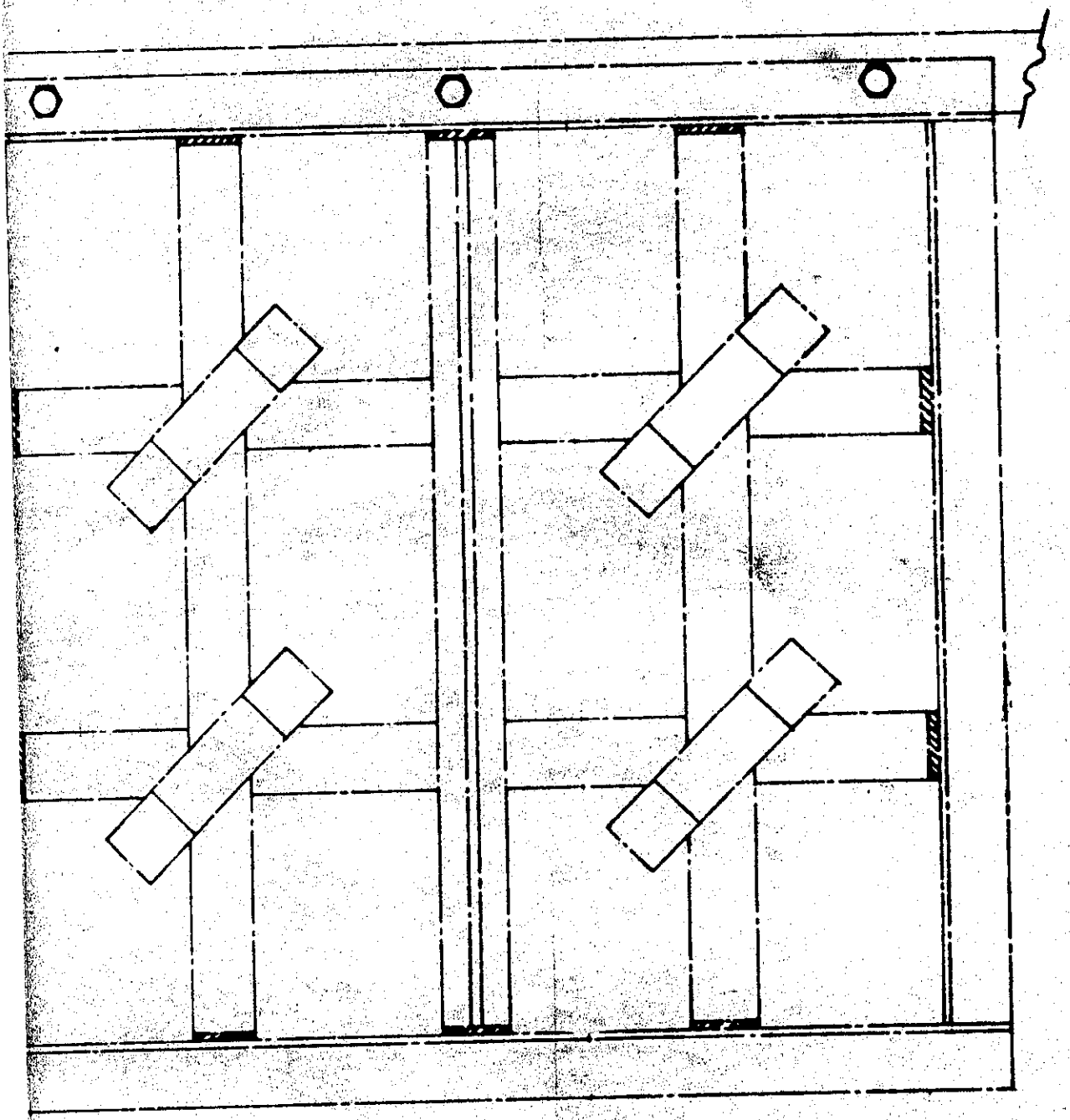


FIG 2 – JERRICAN AND

END



SECTION A-A

DIMENSIONS IN mm

ASSEMBLY

ITG WKSP

TRUCKS, 2 1/2 TON GS, NO 1, MK 3, ALL TYPES

ENGINE COOLING FAN

MODIFICATION INSTRUCTION

REFERENCE:- *ACs in WM Nos 24195, 24196, 24144, 24414, 24433, 24434, 23207, 23278, 23270 and 23284.*

INTRODUCTION

1. This instruction details the fitting of an improved type engine cooling fan to prevent damage to the vehicle radiator and/or water pump due to failure of the existing fan.

Estimated manhours to perform: 2·0

2. *Priority:* Group 1

3. *Vehicles affected:*

All subject vehicles.

4. *Items affected:*

Fan, engine cooling

5. *Action required:* By RAEME units authorised to carry out unit repair in accordance with WKSP A 850.

6. *Stores required:* (Availability to be notified in VEH A 006-1).

Item No	*Stock No*	*Designation*	*Qty*
1	~~2930-66-025-0029~~	FAN, engine cooling 2930-00-219-9619 4 BLADE	1
2	9905-66-016-3535	PLATE, MODIFICATION RECORD	1

7. *Stores removed:* (To be returned to RSG).

Existing fan (2930-66-011-2119)

DETAIL

8. Remove existing fan and fit FAN, engine cooling (2930-66-025-0029).

9. Affix modification plate (Stock No 9905-66-016-3535) to rear top of the engine valve rocker cover and deface the figure "1".

NOTE:- If the rocker cover is replaced the modification plate is to be transferred to the replacement rocker cover.

E N D

TRUCKS, CARGO, 2 1/2 TON GS NO 1 MK 3 ALL TYPES

OIL FILLER CAP

MODIFICATION INSTRUCTION

REFERENCE: *AC in WM Nos. 22414/39, 23270/6, 23278/6, 23284/6, 24144/5, 24195/4, 24196/16, 24207/5, 24433/6, 24434/6, 24530/2, 25107/2*

NOTE:– *This instruction supersedes previous issues, all copies of which are to be destroyed. Changes are sidelined*

SUMMARY

1. This instruction details the modification of the oil filler cap to prevent the cap being lost.

Estimated manhours to perform: 3.0

2. Priority: Group 2.

3. Vehicles affected: All subject vehicles.

4. Items affected: Oil Filler Cap (Stock No. 2805–66–018–8942).

5. Action Required: By RAEME units authorised to carry out unit repair in accordance with WKSP A 850.

6. Stores Required: Available through normal channels.

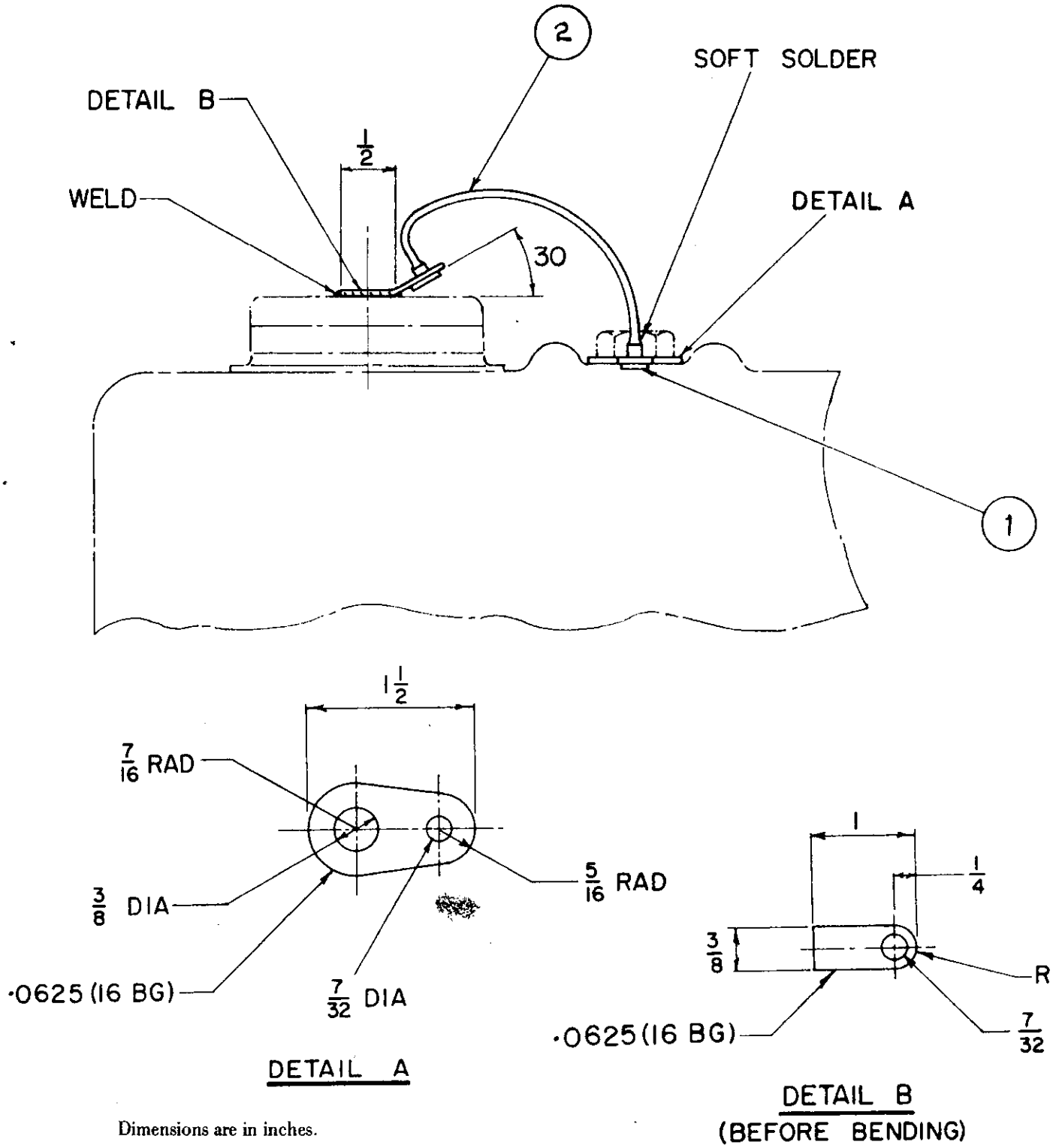
Item No.	*Stock No.*	*Designation*	*Qty. per Veh.*
1	5320–66–017–5456	RIVET, TUBULAR, BRASS, CSK FLAT BEVEL HD, 3/16 in Dia by 3/8 in LG by 3/8 in Dia HD	2
2	LV6/MT1/13468	CABLE, "BOWDEN" Pattern No 1	6 in
3	9515–66–014–2513	STEEL SHEET CARBON HOT ROLLED MILD 16 BG (0.0625 in)	3 in x 1 in

7. Stores Removed: NIL

DETAIL

8. a. Manufacture detail A in accordance with fig 1.
   b. Manufacture detail B in accordance with fig 1.
   c. Weld detail B to the oil filler cap and bend to the required angle as shown in fig 1.
   d. Tin both ends of the Bowden cable with soft solder.
   e. Insert one end of the Bowden cable into the hollow of the rivet (item 1) and secure with soft solder.
   f. Assemble cable and rivet to detail B. Assemble detail A on cable, insert the second rivet and secure with soft solder.
   g. Re–assemble components back on engine as shown in fig 1.

9. Paint all damaged surfaces in accordance with WKSP B 700.



Dimensions are in inches.

FIG. 1 – FITTING SECURING WIRE

E N D

TRUCKS CARGO, 2½ TON GS, NO 1 MK 3 AND MK 4

FITTING ARMOUR PROTECTION KIT

Modification Instruction

REFERENCES: *AC in WM Nos. 22414/42, 24195/7, 24196/9, 23278/9, 24144/8, 24207/8, 23284/10, 23270/9, 24433/9, 24434/9.*
TSU Project 36/67.

SUMMARY

1. This instruction details the modification to be carried out on the subject vehicles to allow user unit personnel to fit the Armour Protection Kit.

Estimated manhours to perform: 8.0

2. *Priority:* Group 2.

3. *Vehicles affected:*

Subject vehicles, by AHQ direction.

4. *Items affected:*

a. Bumper, Vehicular, front.
b. Cab Assembly.
c. Panel Assembly, Facia, Outer.
d. Plate, Switch, Mounting.
e. Rack, Jerrican and Oil Holder.
f. Loops, lashing.
g. Tank, Pressure, Air Reservoir, Air Brake.
h. Strap, Mounting, Reservoir.
j. Light, Marker, Clearance.
k. Cargo Body.
l. Cab Handles.

5. *Action required:* By RAEME workshops authorised to carry out unit repairs in accordance with WKSP A 850.

6. *Stores required:* Stores for this modification are contained in package No 1 of 2450–66–024–9223 Armour Protection Kit, Steel, for 2½ and 5 Ton GS Trucks.

7. *Stores removed:* To be returned to RSG and if serviceable returned to depot stock:

6220–66–018–3357	Light, Marker, Clearance.
2540–66–018–3454	Rack, Jerrican and Oil Holder.

DETAIL

8. Mark, centre punch and drill a 1-1/8 inch diameter hole in the centre of the front bumper bar (refer Fig 1).

9. a. Lower the spare wheel.
b. Remove the three pipes from the air pressure reservoir.
c. Remove the two straps securing the reservoir by unscrewing the four nuts securing the straps and remove the reservoir.
d. Remove the bolts securing the lashing loop.
e. Position the left hand support bracket as shown in Fig 2 and bolt up using the 5/16 x 1½ in. UNF bolts supplied in the package.
f. Replace the reservoir and fasten it with the securing straps.
g. Reconnect the three pipes.
h. Raise the spare wheel.

10. a. Remove the bolts securing the lashing loop to the right hand chassis member.
b. Position the right hand support bracket and lashing loop and bolt up using the 5/16 x 1½ in. UNF bolts supplied.

11. a. Drill two ½ inch holes in the channel roof front support as shown in Fig 3 and fit the two rubber grommets supplied.
b. Remove the switch panel assembly, drill ½ inch hole and cut a 3/32 inch slot as shown in Fig 3, replace the switch panel assembly.

11. (Continued)

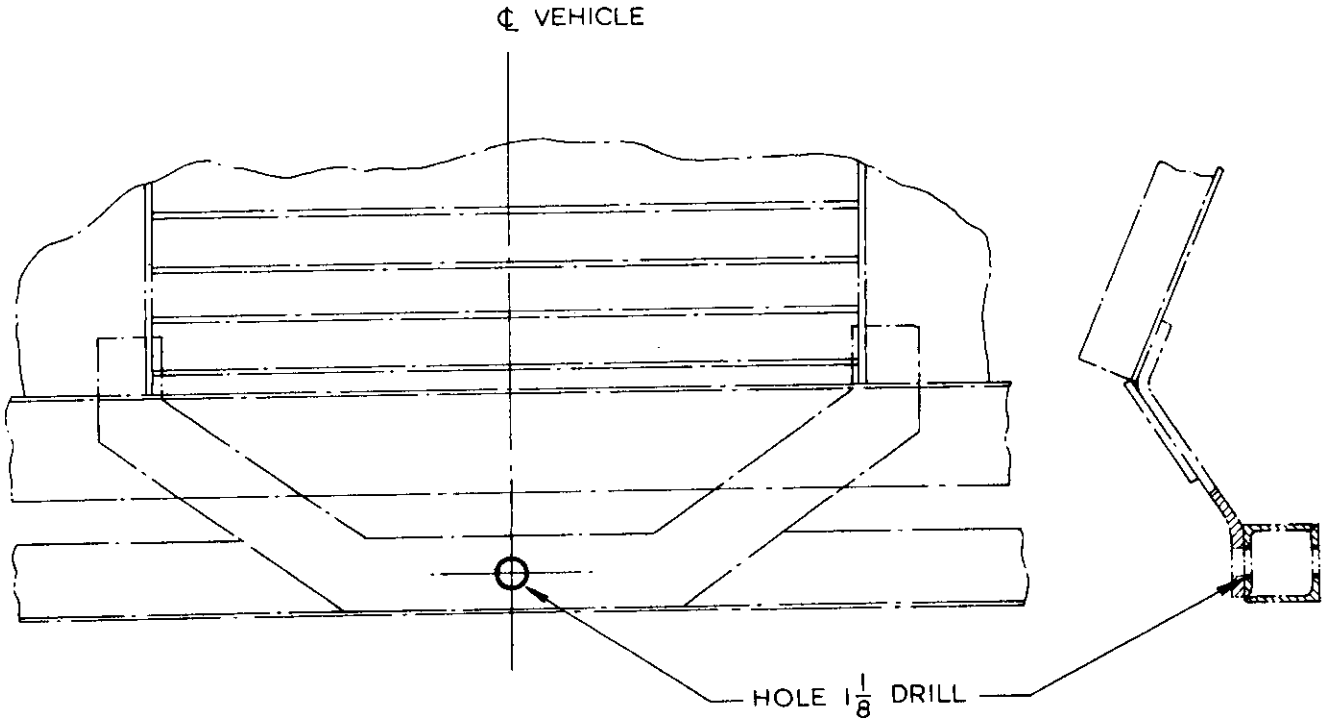
c. Using the release cable bracket assembly as a template mark and drill two mounting holes of 7/32 inch diameter. Secure the bracket using the bolts and nuts supplied.

NOTE: *The bracket is to be positioned with the gap in the bracket facing the top of the cabin.*

12. Position the left hand and right hand guides as detailed in fig 4. Using the guides as templates drill holes and secure the guides with the self tapping screws provided.

13. a. On the left side of the vehicle body set the three rear lashing rings back level with the coaming by heating the rings and setting them back with a hammer blow.
b. On the right hand side set the front three rings back level with the coaming in the same manner.
c. Clean, prime and paint any metal affected by the heat.

14. a. Remove the clearance marker lights from above each door.
b. Remove all exterior cab handles with the exception of the door handles.



DIMENSIONS ARE IN INCHES

FIG. 1 – DRILLING OF BUMPER BAR

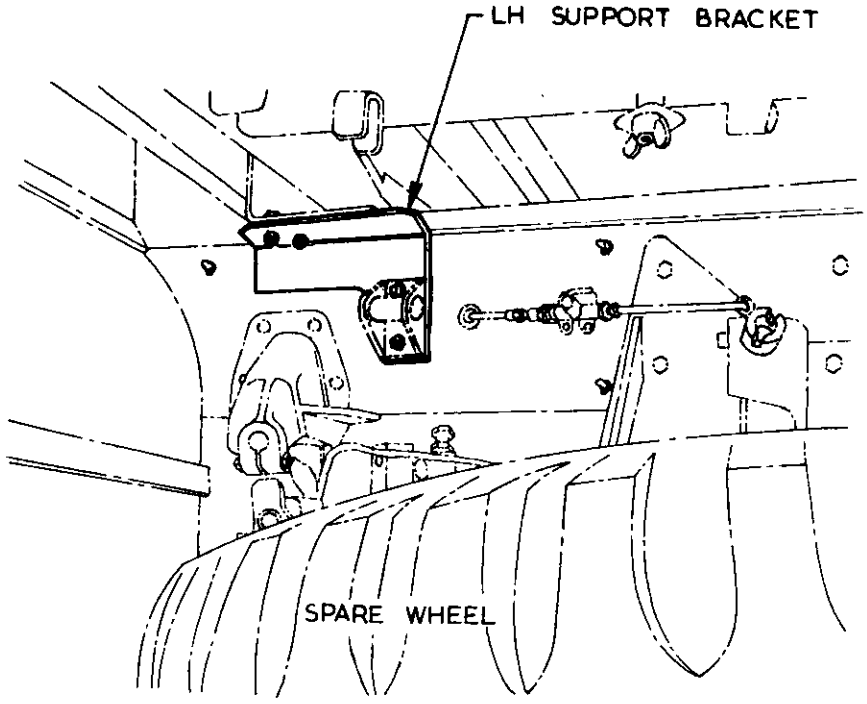


FIG. 2 – FITTING LH SUPPORT BRACKET

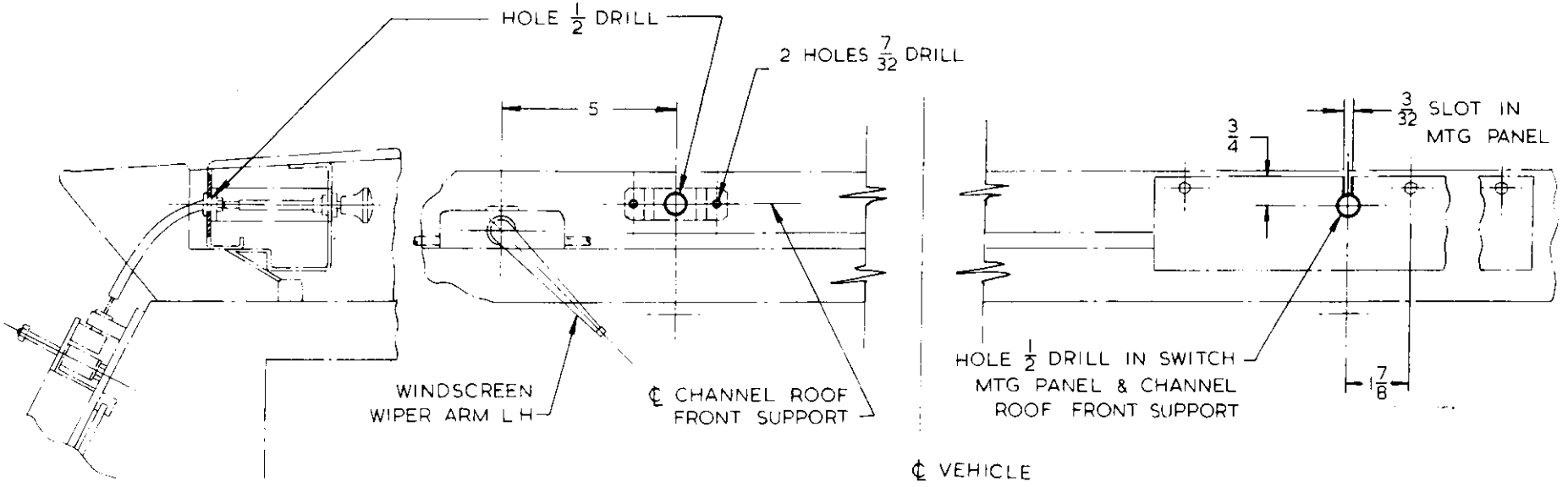


FIG. 3 – FITTING CONTROL CABLES

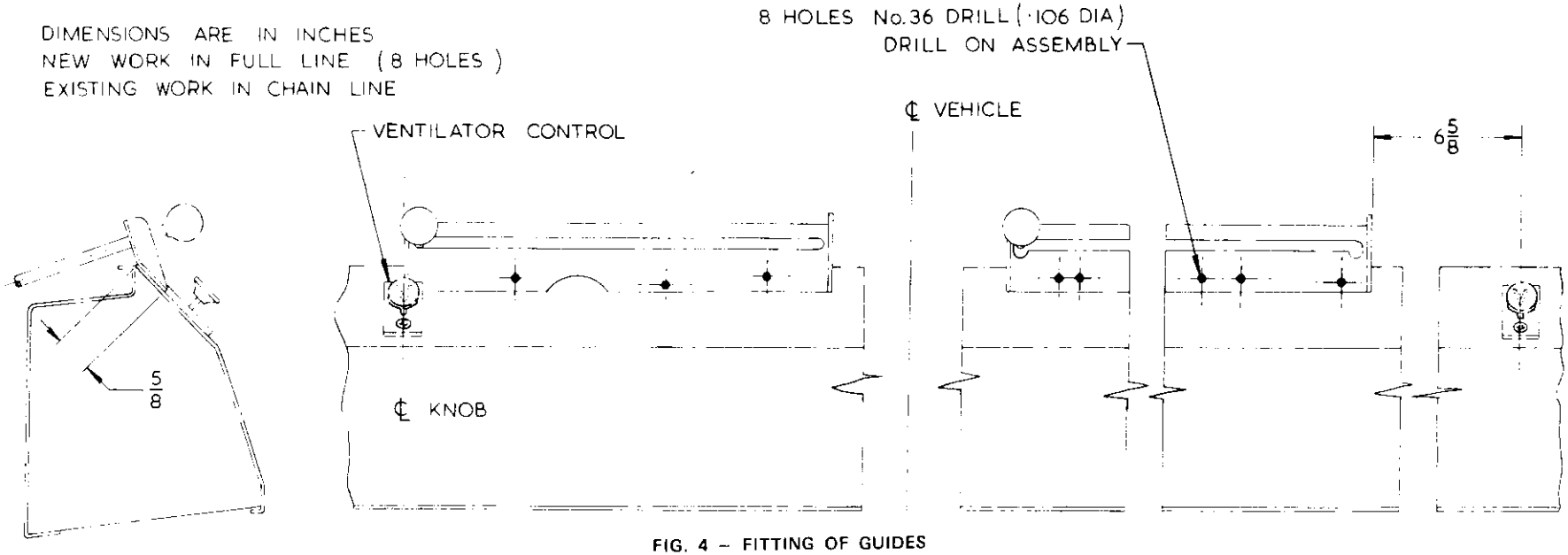


FIG. 4 – FITTING OF GUIDES

END

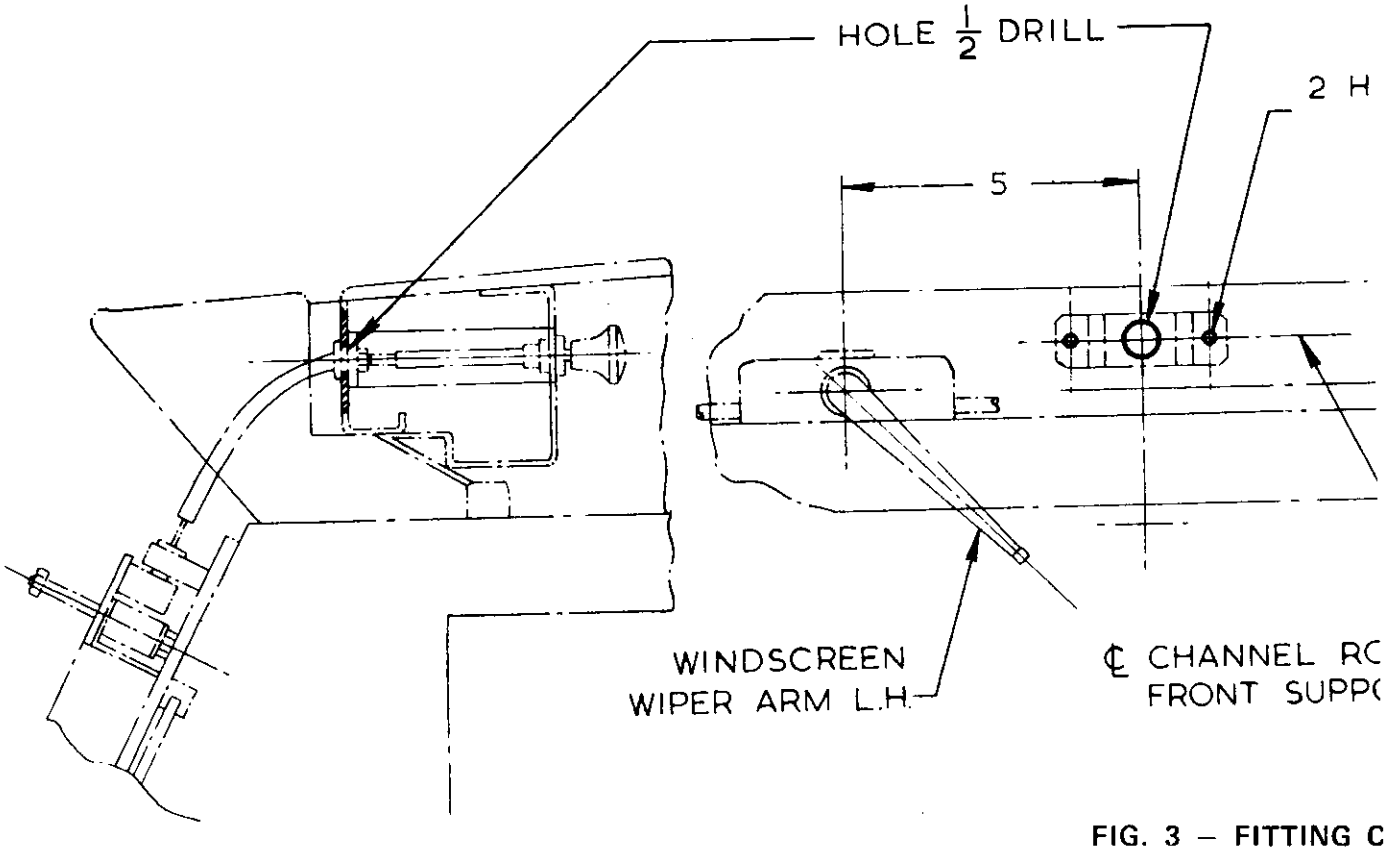


FIG. 3 – FITTING C

8 HO

DIMENSIONS ARE IN INCHES
NEW WORK IN FULL LINE (8 HOLES)
EXISTING WORK IN CHAIN LINE

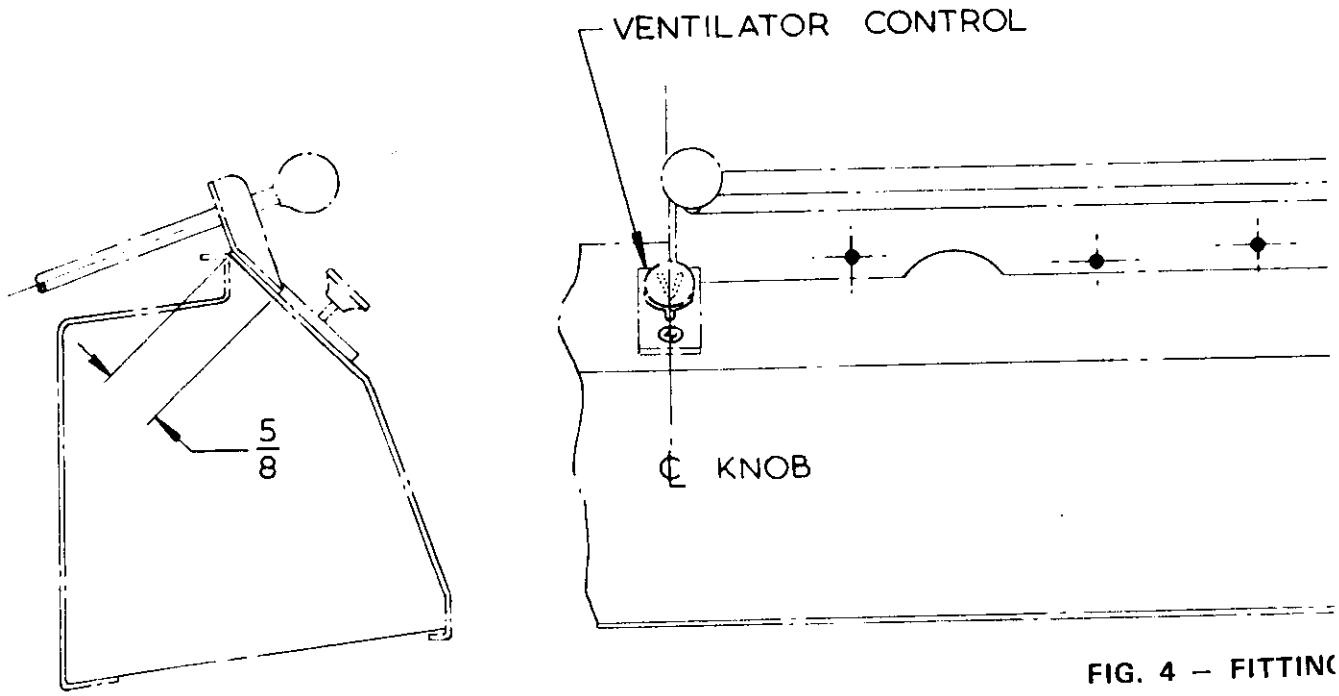
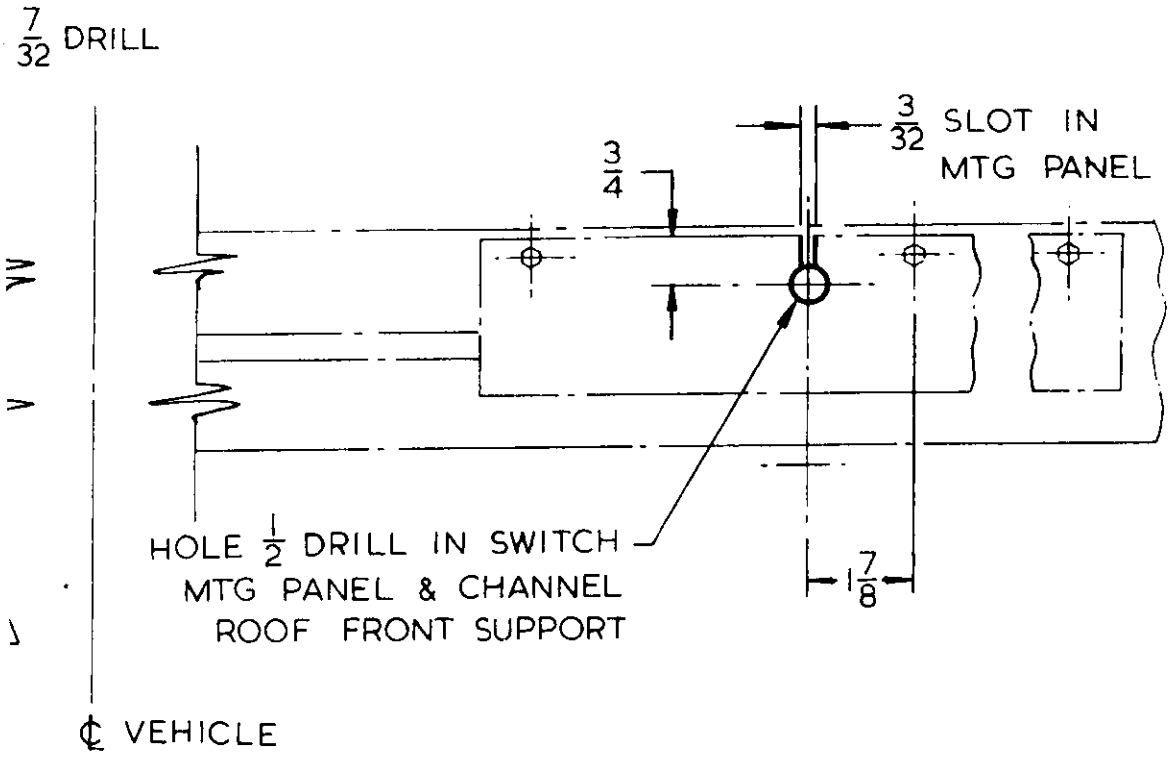
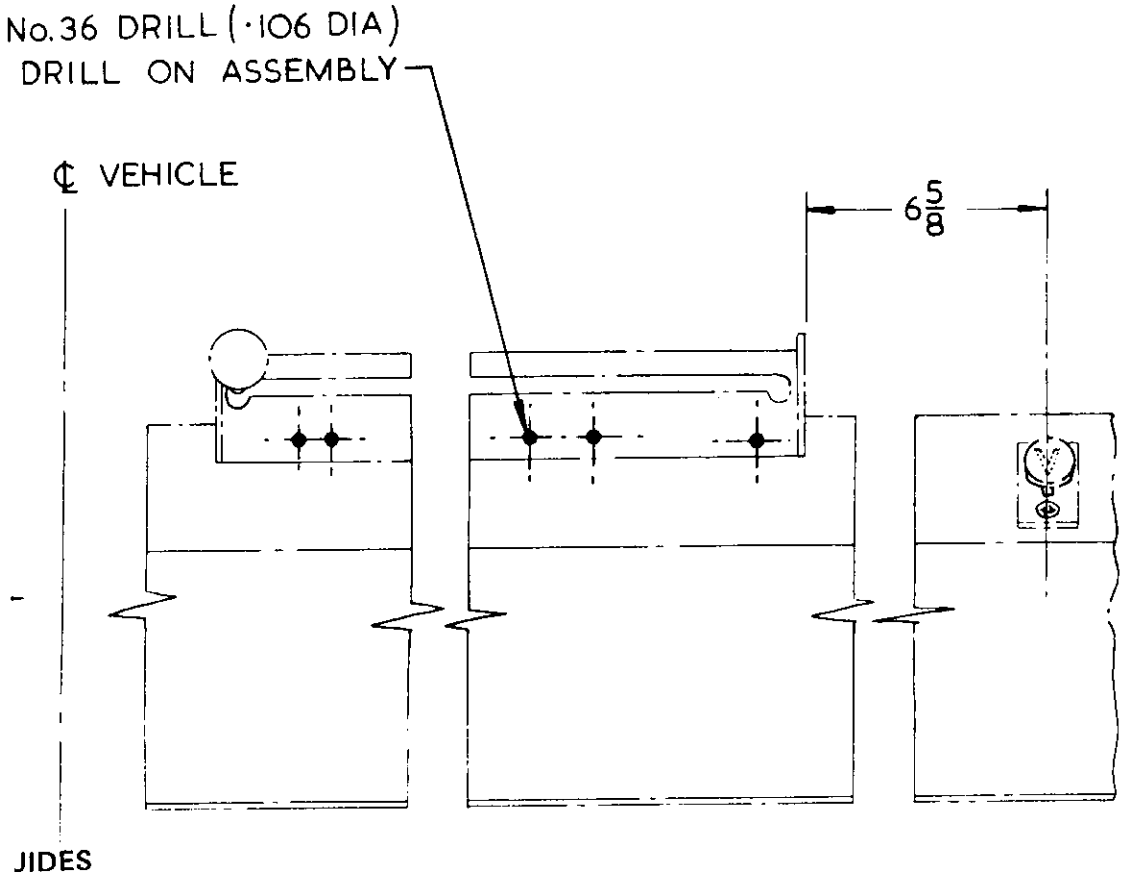


FIG. 4 – FITTINC

E N



)L CABLES



JIDES

TRUCKS, CARGO, 2 1/2 TON GS, WITH WINCH, NO. 1, MK3, AND MK4 ALL TYPES

VERTICAL FAIRLEAD ASSEMBLY

Modification Instruction

REFERENCES: *AC in WM Nos. 22414/43, 24195/8, 24196/9, 23278/9, 24144/8, 24207/9, 23284/11, 23270/10, 24433/10, 24434/10, 24772/13, 25107/6, 24530/5.*

SUMMARY

1. This instruction details the rework required to modify the right and left hand, vertical fairlead assemblies to prevent the winch rope fouling the base plate.

Estimated manhours to perform: 1.0

2. *Priority:* Group 2.

3. *Vehicles affected:* All subject vehicles.

4. *Items affected:* Right and left hand, vertical fairlead assemblies (Cat No. 2590–66–018–2162).

5. *Action required:* By RAEME units authorised to carry out unit work in accordance with WKSP A 850.

6. *Stores required:* NIL

7. *Stores removed:* NIL

DETAIL

8.
a. Remove the vertical fairlead assemblies from the front bumper bar.
b. Modify by removing 1 inch by 45° from each front corner as detailed in fig 1.
c. Remove all sharp edges and burrs.
d. Paint in accordance with WKSP B 700.
e. Replace assemblies and re-tighten to 80–90 lbs/ft torque.

9. Deface the figure 5 on the modification plate fitted to the left hand chassis rail.

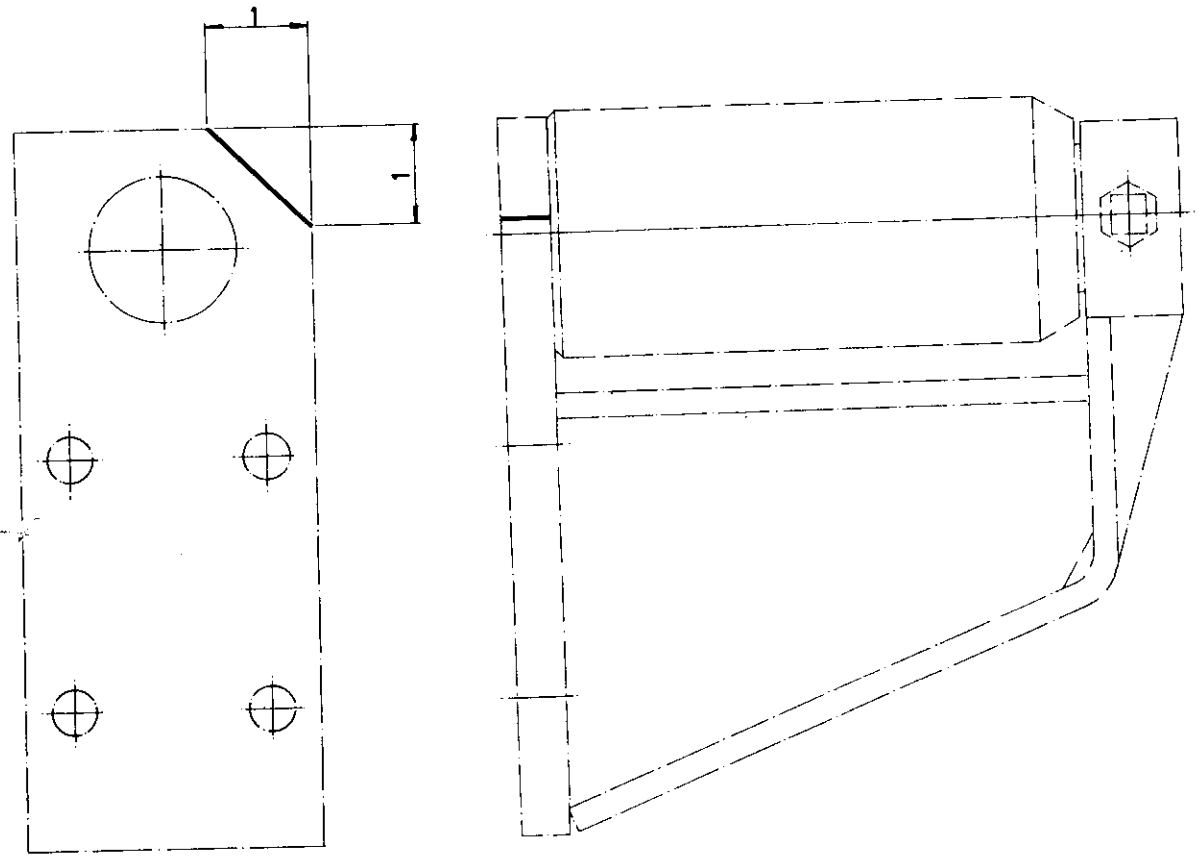


FIG. 1 – VERTICAL FAIRLEADS ASSEMBLY

End

MT

TRUCK, CARGO, 2 1/2 TON, GS, WITH WINCH NO 1 MK 3 IHC TOWING FRAME MODIFICATION INSTRUCTION

Summary

1. This instruction details the removal of the welds between the flanges of the centre rib and the upper flange of the rear channel member to eliminate cracking of rear members due to the frame being too rigid.

Estimated manhours to perform: 1.

2. **Priority:** Group 2.
3. **Equipment affected:** All subject vehicles.
4. **Item affected:** Towing frame.
5. **Action required by:** RAEME workshops authorized to carry out field repairs in accordance with WKSP A 850.

Detail

6. Remove the welds indicated in Fig 1 by chiselling.
7. Deface the figure 6 on the modification plate fitted to the left hand chassis rail.

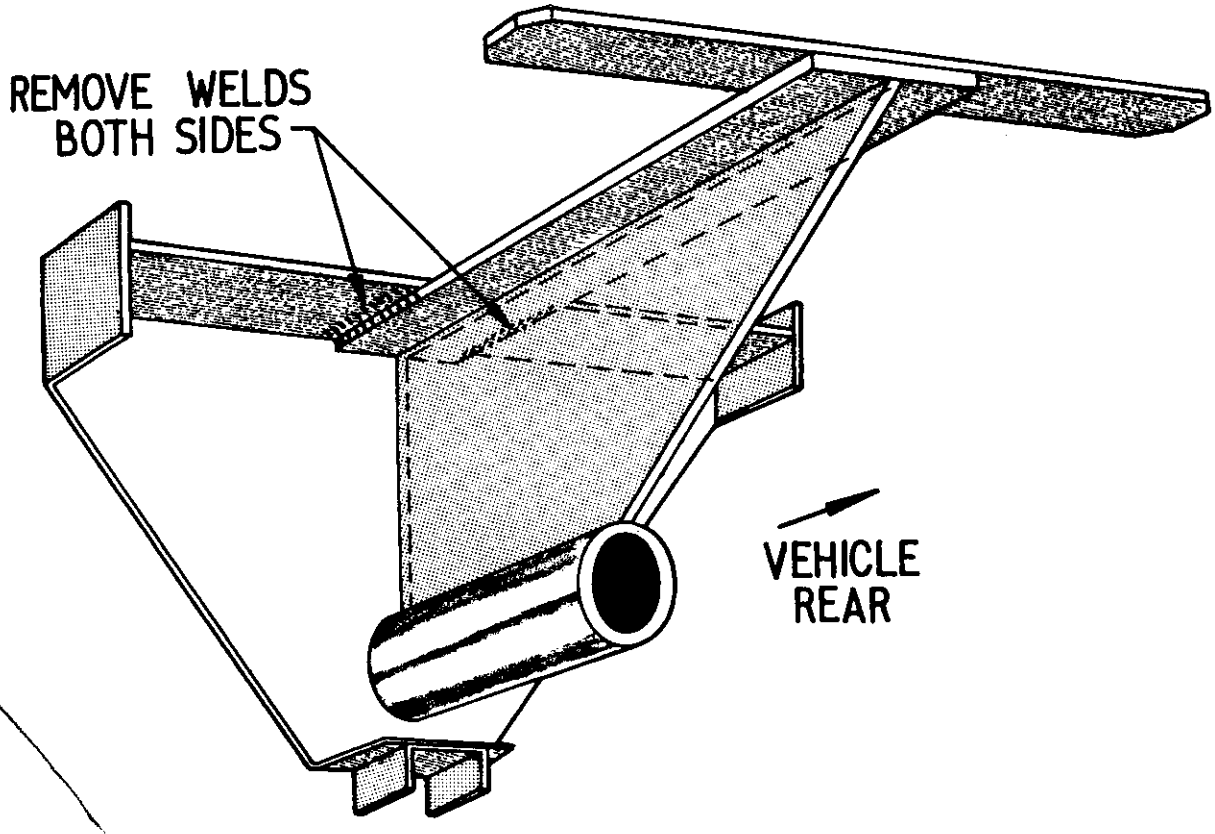


FIG 1 – TOWING FRAME

(TSU 270/70)

END

TRUCK, CARGO, 2½ TON 4 X 4 GS MK 3 AND 4
SUPPORT BRACKET
MODIFICATION INSTRUCTION

Reference. AC in WM 26061/3, 22414/49, 24195/14, 24196/26, 23344/15, 24772/19, 23278/17, 24207/16, 24144/15, 24530/10, 23270/16, 23284/16.

General

1. **Introduction.** This instruction details the installation of a support bracket for the winch clutch shaft, to prevent bending of the shaft in operation.
2. **Estimated Manhours to Perform.** 1.0 (initial planning only).
3. **Priority.** Group 2.
   a. To be undertaken during next field repair.
   b. Depot stocks are to be modified prior to issue.
4. **Modification to be Applied to.** All subject vehicles.
5. **Item Affected.** Winch.
6. **Action Required.** By RAEME workshops authorized to carry out unit repair in accordance with WKSP A 850.
7. **Stores Required.** To be demanded through normal RAAOC channels.

Item	*DSN*	*Designation*	*Qty per Equip*
1	9515–66–012–3610	STEEL STRIP, CARBON, HOT ROLLED, 2 in w by 3/16 in thk	As required

Detail

8. Proceed as follows:
   a. Disconnect battery terminals.
   b. Manufacture the support bracket, noting that the clearance between the bottom of slot to the bottom of control shaft is approximately ¼ inch (Fig 1).
   c. Weld the support bracket to angle iron as shown in Fig 2.
   d. Repaint area damaged by welding,in accordance with WKSP B 700.
   e. Reconnect the battery terminals.
   f. Operate winch control to ensure correct operation.
9. Deface the numeral 8 from the modification plate on the left hand chassis rail.

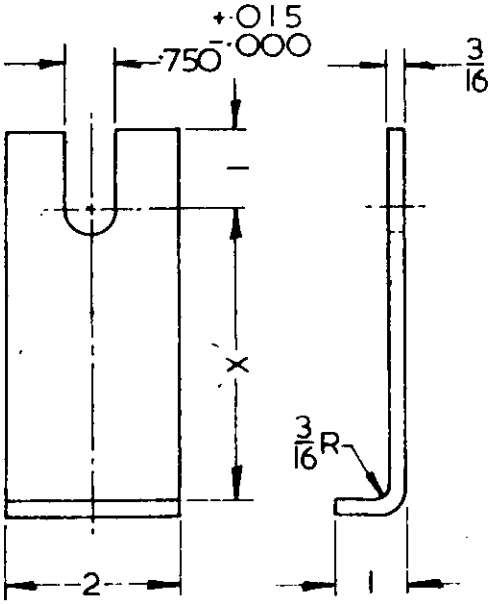


FIG 1 – BRACKET

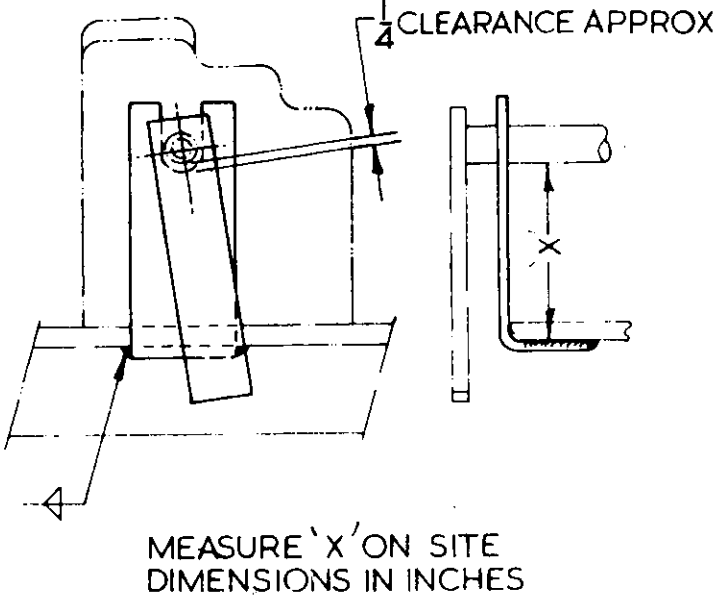


FIG 2 – SUPPORT BRACKET POSITIONING DETAIL

END

TRUCK CARGO 2½ TON GS W/WINCH NO 1 MK 3 IHC FITTING OF TWO PIECE EXHAUST SYSTEM

MODIFICATION INSTRUCTION

Reference: A. AC in WM 22414/50

Introduction

1. This instruction details the component changes and modifications required for the fitting of the two piece exhaust system to the subject vehicles.

General

2. **Estimated Manhours to Perform.** 10.0 (initial planning only).

3. **Priority.** Group 2. Modification to be carried out when ~~existing one piece exhaust manifold cracks~~ ANY COMPONENT(S) OF BIFURCATED EXHAUST SYSTEM ~~vehicles are base overhauled~~ REQUIRE REPLACEMENT - REFER SIG - FIL R571-

4. **Modification to be Applied to.** All subject vehicles.

5. **Items Affected.** Exhaust system and compressor mounting brackets.

6. **Action Required.** By RAEME workshops authorized to carry out field or base repair in accordance with AP 850.

7. **Stores Required.** To be demanded through normal supply channels.

Item	*DSN*	*Designation*	*Qty per*
1.	2590-66-018-3293	LEAD ELECTRICAL, ground to cab	
2.	2805-66-026-1731	MANIFOLD, EXHAUST, front	
3.	2805-66-026-1732	MANIFOLD, EXHAUST, rear	
4.	2990-66-024-7267	PIPE, EXHAUST, front	
5.	2990-66-024-7268	PIPE, EXHAUST, rear	
6.	2990-66-024-7269	MUFFLER, EXHAUST	
7.	2990-66-024-7348	RING, PACKING, exhaust pipe	
8.	4730-66-024-9966	FLANGE, PIPE, steel, triangular shape, 2.330 in h[illegible] ia	
9.	2990-66-025-1922	PIPE, EXHAUST	
10.	2990-66-025-1923	RING, EXHAUST PIPE	
11.	2805-66-010-6744	PLATE, HEAT BAFFLE	
12.	5330-00-374-9403	GASKET, manifold to engine	
13.	2805-00-399-6970	GASKET, intake to exhaust manifold	
14.	5340-66-024-9391	CLAMP, LOOP, steel 7.00 in ID of loop	
15.	2530-66-066-0529	BRACKET, MOUNTING, compressor, upper	

8. **Stores Removed.** The following items are to be reduced to scrap and disposed of in accordance with [illegible]

Item	*DSN*	*Designation*	*Qty per*
1.	2530-66-010-5685	BRACKET MOUNTING, compressor, upper	
2.	2805-66-010-6188	MANIFOLD EXHAUST	
3.	2990-66-017-~~1664~~	PIPE EXHAUST	
4.	2990-00-459-6911	PIPE EXHAUST (tail pipe)	
5.	2990-66-632-4098	MUFFLER, exhaust	
6.	5330-00-374-9431	RING SEAL, exhaust pipe	
7.	5340-00-286-4196	STRAP, RETAINING, steel	
8.	5340-00-566-7660	CLAMP, LOOP, muffler, front	

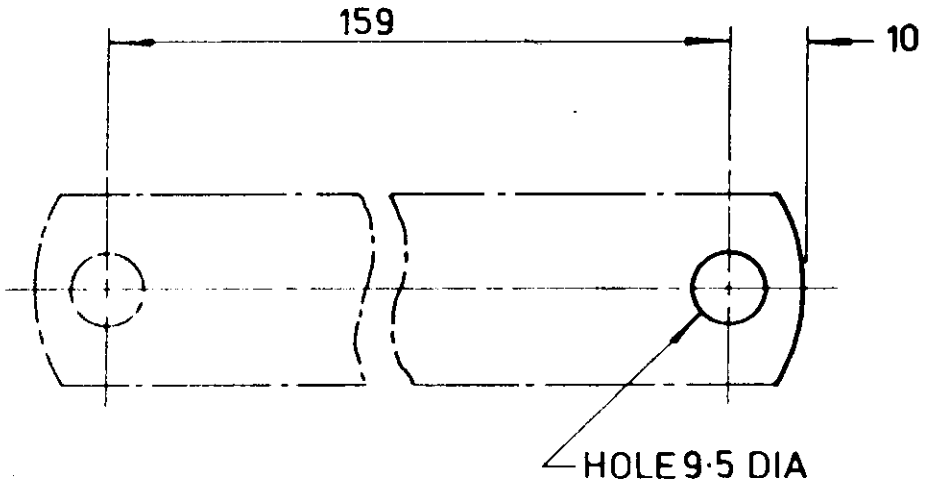
Detail

9. Proceed as follows:

a. Remove the air compressor assembly and mounting bracket.
b. Remove the existing exhaust system (for parts affected see paragraph 8).
c. Referring to Fig 1, modify the existing bracket muffler support straps by redrilling [illegible] shorter [illegible] gap.
d. Check the machined surfaces of the inlet manifold for warpage and surface grind if required.
e. Assemble the rear exhaust manifold to the inlet manifold. The four hotbox bolts [illegible] only [illegible] for [illegible] not tightened at this stage.

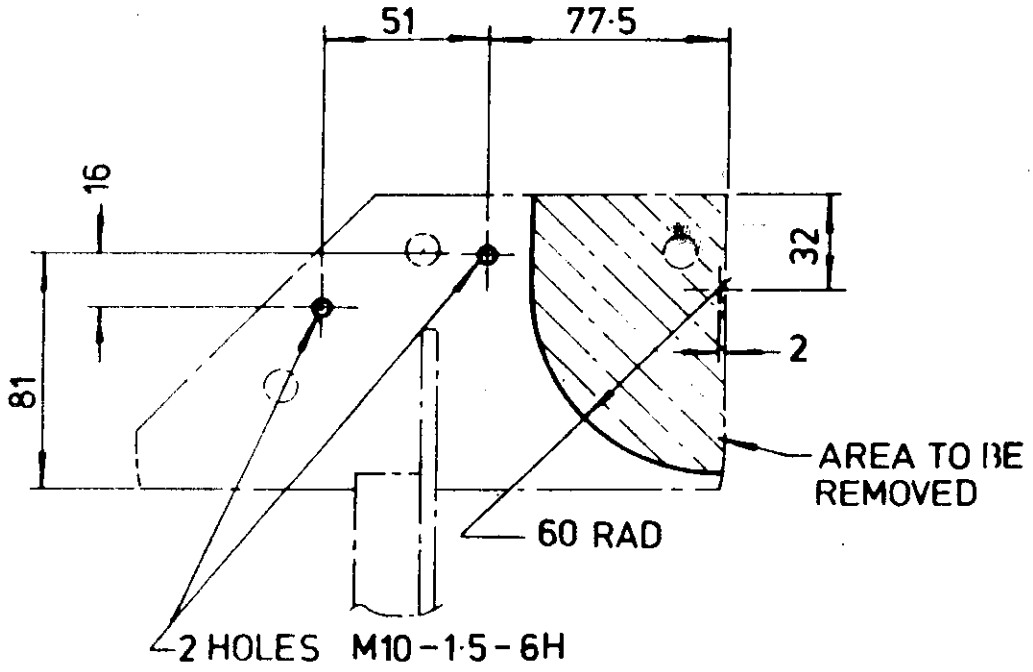
f. Assemble the manifolds to the engine and tighten all mounting bolts.
g. Tighten the four hot-box bolts
h. Fit the front and rear exhaust pipes to the manifold; the six flange bolts are to be firm but not tight
i. Fit the muffler loosely to the front and rear exhaust pipes and to the muffler support brackets.
j. Position the muffler horizontally, then tighten all the flange and mounting bolts.
k. Fit the earth strap between the muffler and chassis.
l. Referring to Fig 2, remove the upper compressor bracket and modify the lower compressor bracket, by removing the shaded area and drilling and tapping the two upper compressor bracket mounting holes.
m. Assemble the compressor brackets and remount the bracket and compressor assembly on the engine.

10. On completion, deface the numeral 2 on the engine modification plate.



NOTE: 1. Existing work in chain line.
2. New work in full line.
3. Dimensions in mm.

FIG 1 – MUFFLER BRACKET SUPPORT SHOWING THE REWORKING DIMENSIONS



NOTE: 1. Remove sharp edges.
2. Existing work in chain line
3. New work in full line
4. Dimensions in mm.

FIG 2 – LOWER COMPRESSOR BRACKET, SHOWING RE-WORKING REQUIRED

11. **Practical Imperial Equivalents Derived from Text and Drawings.**

Metric	*Imperial*	*Metric*	*Imperial*
2 mm	1/16 in	51 mm	2 in
9.5 mm	3/8 in	60 mm	2-3/8 in
10 mm	3/8 in	77.5 mm	3-3/64 in
16 mm	5/8 in	81 mm	3-3/16 in
32 mm	1-1/4 in	159 mm	6-1/4 in
		M10-1.5-6H	3/8-24UNF-2B

END

TRUCK CARGO 2½ TON GS W/WINCH NO 1 MK 4

REPAIR INFORMATION

MISCELLANEOUS INSTRUCTION

Introduction

1. This instruction lists those features in which the 2½ Ton Mk 4 truck differs from the Mk 3. In some details the Mk 4 vehicle has been standardised with the 5 Ton GS range of vehicles. Also listed are EMEIs which cover all aspects of repair of the Mk 4 vehicle.

Detail

2. The Mk 4 differs from the Mk 3 as follows:

   a. *Engine.* Two piece manifold as on 5 Ton GS F1 and F2 trucks, and compressor mounting bracket of one piece construction.
   b. *Electrical.* Alternator, distributor and wiring are the same as 5 Ton GS except that no winch overload switch is fitted.
   c. *Transfer case.* Air controlled lockout as on 5 Ton GS.
   d. *Fuel tanks.* Steel replaces fibre glass.
   e. *Cab and radiator mounting.* Same as 5 Ton GS.

3. Repair information is fully covered in VEH G 553 and G 554 (Unit and Field repair for Trucks Cargo 2½ Ton GS W/Winch No 1 Mk 3) and VEH G 573, G 574 and G 574–1 (Unit, Field and Base repair for Trucks Cargo and Dump 5 Ton GS F1 and F2).

(TSU 102/71)

END

Distribution – Class 25.2 – Code No 4