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TRUCK UTILITY LIGHT (TUL) HS TRUCK UTILITY MEDIUM (TUM) HS AND (TUM) AMBULANCE HS

MODIFICATION INSTRUCTIONS AND INDEX

~~This publication contains information covering the requirements of
Subcategory 8-1 at information level 1~~

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UNITED KINGDOM MINISTRY OF DEFENCE
AND ARMED FORCES

By

Operational Support Vehicle Programme (OSVP)

DE&S Abbey Wood
BRISTOL
BS34 8JH

AMENDMENT RECORD

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PREFACE

Sponsor:
OSVP
File ref:

Publication Agency:
OSVP, Abbey Wood
Project No:
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INTRODUCTION

- 1 The Publication agency is responsible for the allocation of instruction numbers.
- 2 All instructions (when issued) issued are to be recorded in manuscript by the recipient on the Numerical Instruction Index provided. Amendments to individual instructions are to be recorded on the Instruction Amendment record. All extant instructions and amendments can be found in the main AESP index.

NOTE

The Publication Agency is responsible for the preparation and maintenance of the instruction Index and will advise the Distribution Authority on the issue of completed and subsequent blank index.

- 3 Service users should forward any comments on this publication through the channels prescribed in AESP 0100-P-001-013. An AESP Form 10 is provided after the preliminary pages of the publication; it should be photocopied and used for forwarding comments on this AESP.
- 4 AESPs are issued under Defence Council authority and where AESPs specify action to be taken, the AESP will of itself be sufficient authority for such action and also for the demanding of the necessary stores.

INSTRUCTION INDEX

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Key: I = Immediate R = Routine CR = Completely Revised

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**TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION No 1**

Sponsor:

DGES(A) ES52
File ref: D/DGES(A) 548/3/4

Publication Agency

ATSA Chertsey
Project No:ES52c/4356
File ref: DE/CH/4118/LVG

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
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3			6		

SUBJECT: Radio racking fixings.

(Approval No LSTP 12-6639)

INTRODUCTION

1 This instruction is to inform units that the bolts, washers and nuts securing the radio racking are of an incorrect size (6 mm). The bolts should be replaced with new bolts, washers and nuts of a correct size (8 mm).

1.1 Limitations on use of equipment. Nil

APPLICABILITY

2 Truck Utility Light (TUL) HS FFR, Truck Utility Medium (TUM) HS FFR vehicles, before VIN 131531

2.1 Fitted to subject equipment held by user units.

2.2 Unmodified stock, held at all levels of technical storage.

REASON FOR MODIFICATION

3 Code 2 - to improve operational performance

PRIORITY

4 Army: Routine
RAF: Class 3

ESTIMATED TIME REQUIRED

5 Embodiment: 1.0 man-hours

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.
RAF - Units not later than the next routine maintenance and Vehicles Depots before next issue of vehicle.

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action. NA

Action required by

7

7.1 Units and establishments holding equipment.

7.1.1 Examine vehicle documents to see if modification is applicable.

7.1.2 Examine equipment to see if modification record plate to see if modification is embodied and where necessary Units with level 2 REME Support demand the stores required.

7.1.3 ARMY - On receipt of stores, request REME to modify equipment.

7.1.4 ARMY - Record the modification, Subject AESP number and Army Modification Code in equipment documents.

7.1.5 RAF - Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADP MTMS job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

7.2 Army units authorised to carry out levels 2, 3 and 4 maintenance, and RAF units.

7.2.1 ARMY - When requested by users or during overhaul of equipments on charge without REME level 2 Support, obtain the items listed in Para 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.2.3 Complete AF G1084A when reporting completion of the modification to FORWARD (RAF) using the following code:

RAF: MODIFICATION CODE AFN 147

NOTE

RAF units operating STAMA are also to complete ADP MTMS Job Certification Sheet and to follow the procedures laid down in 100C-08A.

7.3 All recipients of this instruction. Add particulars to AESP 2320-D-128-811 Mod instr index.

Stores tools and equipment

8

8.1 Stores to be demanded.

8.1.1 The following items are to be demanded quoting this instruction authority for demand.

Item No	DMC	NSN/Part No	Designation	Qty Per eqpt
		N/P	Mod set: comprising:	1
1	G1	5305-99-122-5367	Bolt M8 x 25 mm	(8)
2	G1	5310-99-122-5496	Washer, plain M8	(8)
3	7RU	5310-99-250-8186	Nut, Nyloc M8	(8)

Sequence of operations

NOTE

The item numbers of Para 8 are used as references throughout this instruction.

9 Carry out the modification as follows:

- 9.1 Identify the securing bolts, washers and nuts to be replaced on the radio racking.
- 9.2 Remove and discard the original securing bolts, washers and nuts.
- 9.3 Fit new fixings (Items 1, 2 and 3).

Testing after embodiment

10 Nil

EFFECT ON WEIGHT

11 Negligible

PUBLICATION AMENDMENTS

NOTE

Necessary amendment(s) will be issued separately.

12 Nil

TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION No 2

Sponsor:

DGES(A) ES52
File ref: D/DGES(A) 548/3/4

Publication Agency:

ATSA Chertsey
Project No: ES52c/4356
File ref: DE/CH/4118B/LVG

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Roof mounted communication installation (blinking plate only).
(Approval No LSTP 12-6659)

INTRODUCTION

1 This instruction details the drilling of the hole in the hard top for the aerial mounting and the fitting of the blinking plate only. An installation kit for a roof mounted aerial has been made available. A blinking plate, sealing washer, bolts, washers and nuts are supplied to cover the hole in the fibre glass hard top prior to the fitting of the internal base plate.

1.1 Limitations on use of equipment. Nil

APPLICABILITY

2 Truck utility medium (TUM) HS FFR (Hard Top only).

2.1 Fitted to all FFR hardtop vehicles held by user units.

2.2 Unmodified stock, held at all levels of technical storage.

REASON FOR CHANGE

3 Code 2 - to improve operational performance

PRIORITY

4 ARMY: Routine
RAF: Class 3

ESTIMATED TIME REQUIRED

5 Embodiment: 1.5 man-hours

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.
RAF - Units not later than the next routine maintenance and Vehicles Depots before next issue of vehicle.

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action. NA

Action required by

7

7.1 Units and establishments holding equipment.

7.1.1 Examine vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary Units with level 2 REME Support demand the stores required.

7.1.3 ARMY - On receipt of stores, request REME to modify equipment.

7.1.4 ARMY - Record the modification subject and AESP number in equipment documents.

7.1.5 RAF - Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADP MTMS job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

7.2 Army units authorised to carry out levels 2,3 and 4 maintenance and RAF units.

7.2.1 ARMY - When requested by users or during overhaul of equipments on charge without REME level 2 Support, obtain the items listed in Para 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.2.3 Complete AF G1084A when reporting completion of the modification to FORWARD (RAF) using the following code:

RAF: MODIFICATION CODE: AFN 146

NOTE

RAF units operating STAMA are also to complete ADP MTMS Job Certification Sheet and to follow the procedures laid down in 100C-08A.

7.3 All recipients of this instruction. Add particulars to AESP 2320-D-128-811 Mod Instr. index.

Stores, tools and equipment

8

8.1 Stores to be demanded.

8.1.1 The following items are to be demanded quoting this instruction authority for demand.

Item No	DMC	NSN/Part No	Designation	Qty Per eqpt
		N/P	Mod set: comprising:	1
1	Z99	5820-99-634-2889	Blanking plate	(1)
2	7XD	5820-99-949-1082	Seal	(1)
3	G1	5305-99-122-5361	Bolt M6 x 20 mm	(6)
4	7XD	5310-99-215-9928	Washer M6	(6)
5	G1	5310-99-139-5313	Nut, Nyloc M6	(6)

8.2 Special tools and test equipment required.

	NSN/Part No	Designation	Qty per eqpt
6	5133-99-910-4116	Boring Tool	1

Sequence of operations

WARNINGS

(1) FIBRE GLASS. WHEN CUTTING FIBREGLASS ENSURE A SUITABLE RESPIRATOR MASK IS WORN AT ALL TIMES.

(2) PERSONNEL INJURY. WHEN USING CUTTING TOOLS ENSURE SUITABLE GOGGLES AND GLOVES ARE WORN AT ALL TIMES.

NOTE

The item numbers of Para 8 are used as references throughout this instruction.

9 Carry out the modification as follows:

Refer to Fig 1.

9.1 Using a suitable marker pen, mark a centre line on the inside of the hard top between the two moulded centre recesses.

9.2 Mark out position of blanking plate as shown at Fig 1.

9.3 Drill a 2 mm pilot hole through the marked centre from the inside of the vehicle.

- 9.4 Working on the outside of the vehicle, mark out a centre line along the length of the roof passing through the centre of the pilot hole and 70 mm either side of it.
- 9.5 Using the pilot hole as its centre, mark 130 mm circle onto the roof.
- 9.6 Place the blanking plate (item 1) onto the roof ensuring it lines up inside the 130mm circle and that two of the equidistant holes are centred over the centre line.
- 9.7 Using the blanking plate as a template, mark the position of the 6 equidistant holes on the 111 mm pcd.
- 9.8 Using special tool, (item 6) and the pilot hole as a guide, cut out a 75 mm diameter hole in the hard top.
- 9.9 Drill pilot holes for the six fixing holes and follow through to the correct diameter of 7 mm.
- 9.10 Clear away all rough edges using a file or medium grade glass paper and wipe clean the area.
- 9.11 Repaint any damaged areas NATO Green IRR Matt to Def Stan 03-32, Part 5.3.
- 9.12 Fit the sealing washer (item 2) and blanking plate (item 1) to the roof and secure with the six fixings (Items 3, 4 and 5). Do NOT over tighten.
- 9.13 Remove all debris from the vehicle and clean away any fibreglass dust.

Testing after embodiment

10 Nil

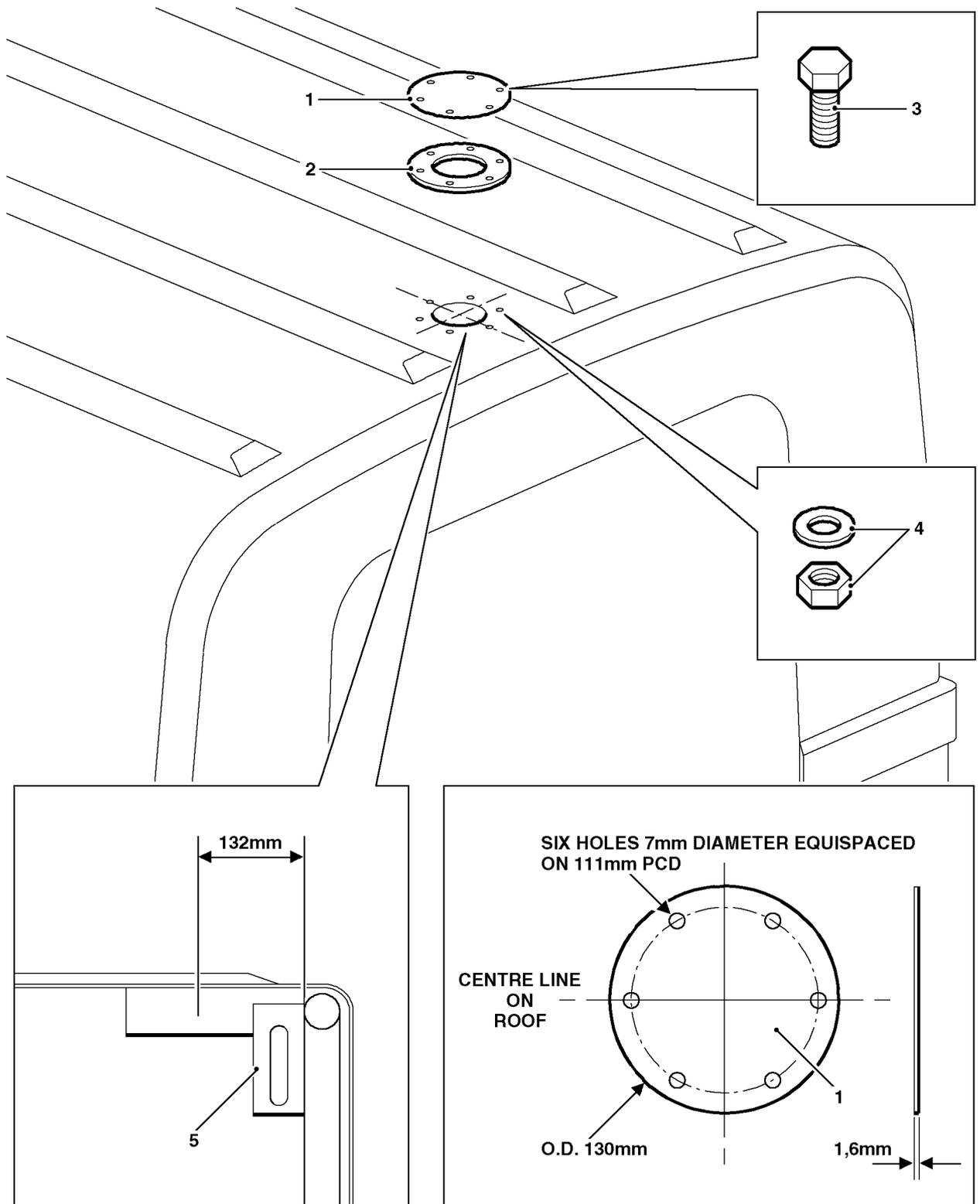
EFFECT ON WEIGHT

11 Negligible

PUBLICATION AMENDMENTS**NOTE**

Necessary amendment(s) will be issued separately.

12 Nil



MIL0576

- 1 Blanking Plate
- 2 Seal
- 3 Bolt

- 4 Washer and nut
- 5 Set square

Fig 1 Installation of blanking plate

TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION No 3
(Completely Revised)

Sponsor: GSV PT
Project No.
File Ref:

Publication Authority: GSV PT Abbey Wood

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Heli-lift vehicle modifications (hard top only)
(Approval No LSTP 12-6660)

INTRODUCTION

1 This instruction is to manufacture and fit the equipment for the protection required preventing damage to the vehicle when hard top vehicles are being transported by helicopter.

1.1 Limitations on use of equipment. Nil

APPLICABILITY

2 Truck Utility Light (TUL) HS (hard top only) and Truck Utility Medium (TUM) HS (hard top only).

2.1 Fitted to subject equipment held by user units.

2.2 Unmodified stock, held at all levels of technical storage.

REASON FOR MODIFICATION

3 Code 2 - to improve operational performance

PRIORITY

4 Army: Routine
RAF: Class 3

ESTIMATED TIME REQUIRED

5 Embodiment: 8 man-hours

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

ARMY - Units authorised to carry out level 4 maintenance only.
RAF - Units not later than the next routine maintenance and Vehicles Depots before next issue of vehicle.

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action. NA

Action required by

7

7.1 Units and establishments holding equipment.

7.1.1 Examine vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary Units with level 2 REME Support demand the stores required.

7.1.3 ARMY - On receipt of stores, request REME to modify equipment.

7.1.4 ARMY - Record the modification subject and AESP number in equipment documents.

7.1.5 RAF - Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADP MTMS job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

7.2 Army units authorised to carry out levels 2,3 and 4 maintenance and RAF units.

7.2.1 ARMY - When requested by users or during overhaul of equipments on charge without REME level 2 Support, obtain the items listed in Para 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.2.3 Complete AF G1084A when reporting completion of the modification to FORWARD (RAF) using the following code:

RAF: MODIFICATION CODE AFN 148

NOTE

RAF units operating STAMA are also to complete ADP MTMS Job Certification Sheet and to follow the procedures laid down in 100C-08A.

7.3 All recipients of this instruction. Add particulars to AESP 2320-D-128-811 Mod instr index.

Stores tools and equipment

8

8.1 Stores to be demanded.

8.1.1 The following items are to be demanded quoting this instruction authority for demand.

Item No	DMC	NSN/Part No	Designation	Qty Per eqpt
		N/P	Mod set: comprising:	1
1		5530-99-551-4568	Packer 4mm (refer to Para 9.2)	(1)
2		5530-99-225-9696	Packer 6mm (refer to Para 9.2)	(1)
3		5530-99-924-0087	Packer 9mm (refer to Para 9.2)	(1)
4		5530-99-842-6037	Packer 12mm (refer to Para 9.2)	(1)
5		5530-99-924-0139	Board protection outer 22 mm (refer to Para 9.1)	(1)
6		9515-99-964-7902	Steel 3mm (refer to Para 9.3)	(1)
7		5305-99-134-9002	Screw, wood No. 10 x ¾ pozi drive	(6)
8		5306-99-138-1549	Bolt, coach M6 x 55	(3)
9		5310-99-135-4101	Washer M6	(3)
10		5310-99-122-3401	Nut M6	(3)
11		8030-99-811-8760	Secomastic (Sealant)	(As reqd)
12		6810-99-942-9393	Wood preserver (Cuprinol)	(As reqd)
13		8010-99-126-0772	Etch primer	(As reqd)
14		8010-99-244-8997	Primer – zinc phosphate	(As reqd)
15		8010-99-623-9651	Paint top coat (NATO green 1 Litre)	(As reqd)

Sequence of operations

NOTES

(1) The item numbers of Para 8 are used as references throughout this instruction.

9 Carry out the modification as follows:

Refer to Fig 1.

9.1 Board protection outer.

9.1.1 Fabricate board protection outer (item 5).

9.1.2 Apply one coat of wood preserver (item 12).

9.1.3 Apply one coat of primer (item 14) and one coat of paint (item 15) as required.

9.2 Packer.

9.2.1 Assess the thickness required to fit the space between the rollbar and the roof using offcuts.

9.2.2 Fabricate packer using one or combinations of different thicknesses of plywood (Items 1, 2, 3 or 4).

9.2.3 Apply one coat of wood preserver (Item 12).

9.2.4 Apply one coat of primer (item 14) and one coat of paint (item 15) as required.

9.3 Chain guard.

9.3.1 Fabricate chain guards from steel to BS EN 10025 S275 3 mm thick (Item 6) to detail.

9.3.2 Apply one coat of primer (item 13) and one coat of paint (item 15) as required.

9.4 Assembling.

Refer to Fig 2

9.4.1 When the chain guards and board protection outer are dry, apply sealant to the top edges only of the board protection outer and fit the guards to the board using wood screws (Item 7).

9.5 Fitting to vehicle.

Refer to Fig 2

9.5.1 Place the board protection outer assembly above the drain channel at the rear of the vehicle using two packing pieces to achieve 22 mm distance from the bottom of the drain channel to the top of the packing pieces.

9.5.2 Fit the packer to the inside of the vehicle between the roll bar and the body and push up as far as possible and using appropriate clamps hold the two items in place.

9.5.3 Using the protection board outer as a template drill three holes through the vehicle and packer.

9.5.4 Fit three bolts (Item 8), washers (Item 9) and nuts (Item 10) and secure (refer to Fig 3).

9.5.5 The bolts must not protrude from the nuts by more than 3 mm, if necessary trim the bolts to the correct length (refer to Fig 3).

9.5.6 Remove the clamps and apply sealant (item 11) between the hood and protection board along the top edge only (refer to Fig 3).

Testing after embodiment

10 Nil

EFFECT ON WEIGHT

11 Negligible

PUBLICATION AMENDMENTS

NOTE

Necessary amendment(s) will be issued separately.

12 Nil

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DIMENSIONS IN mm

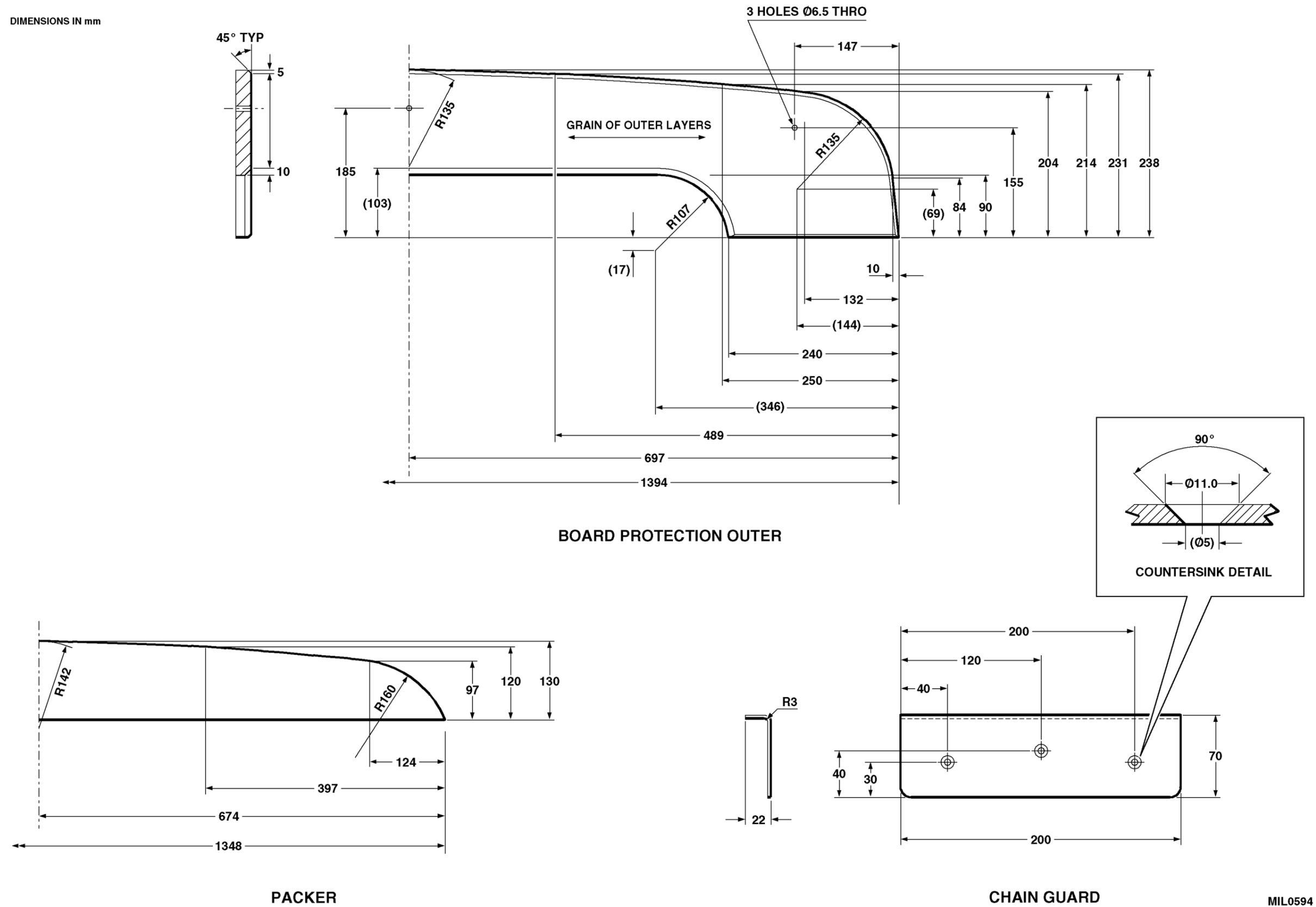


Fig 1 Manufacturing details

MIL0594

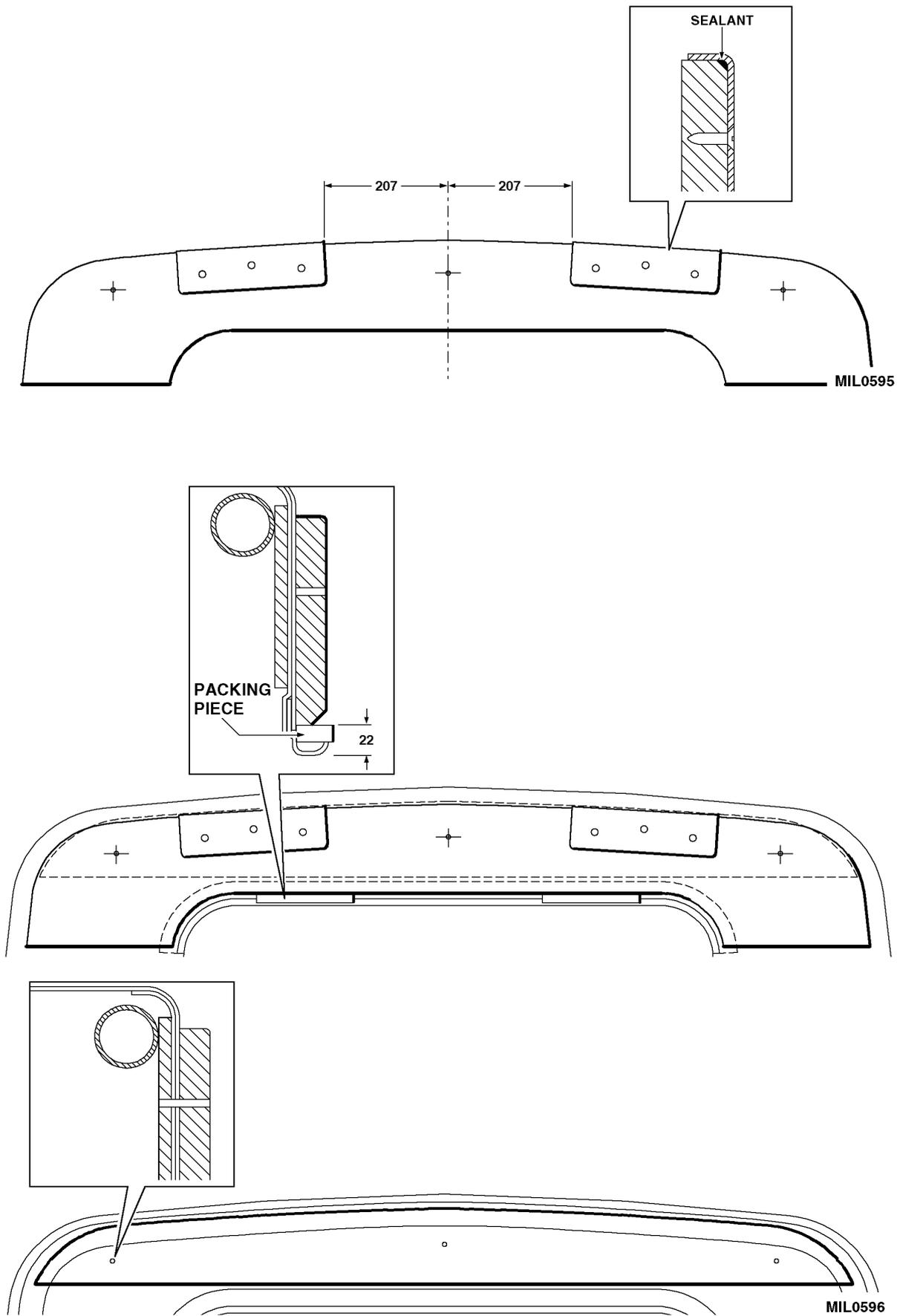


Fig 2 Assembling and fitting to vehicle

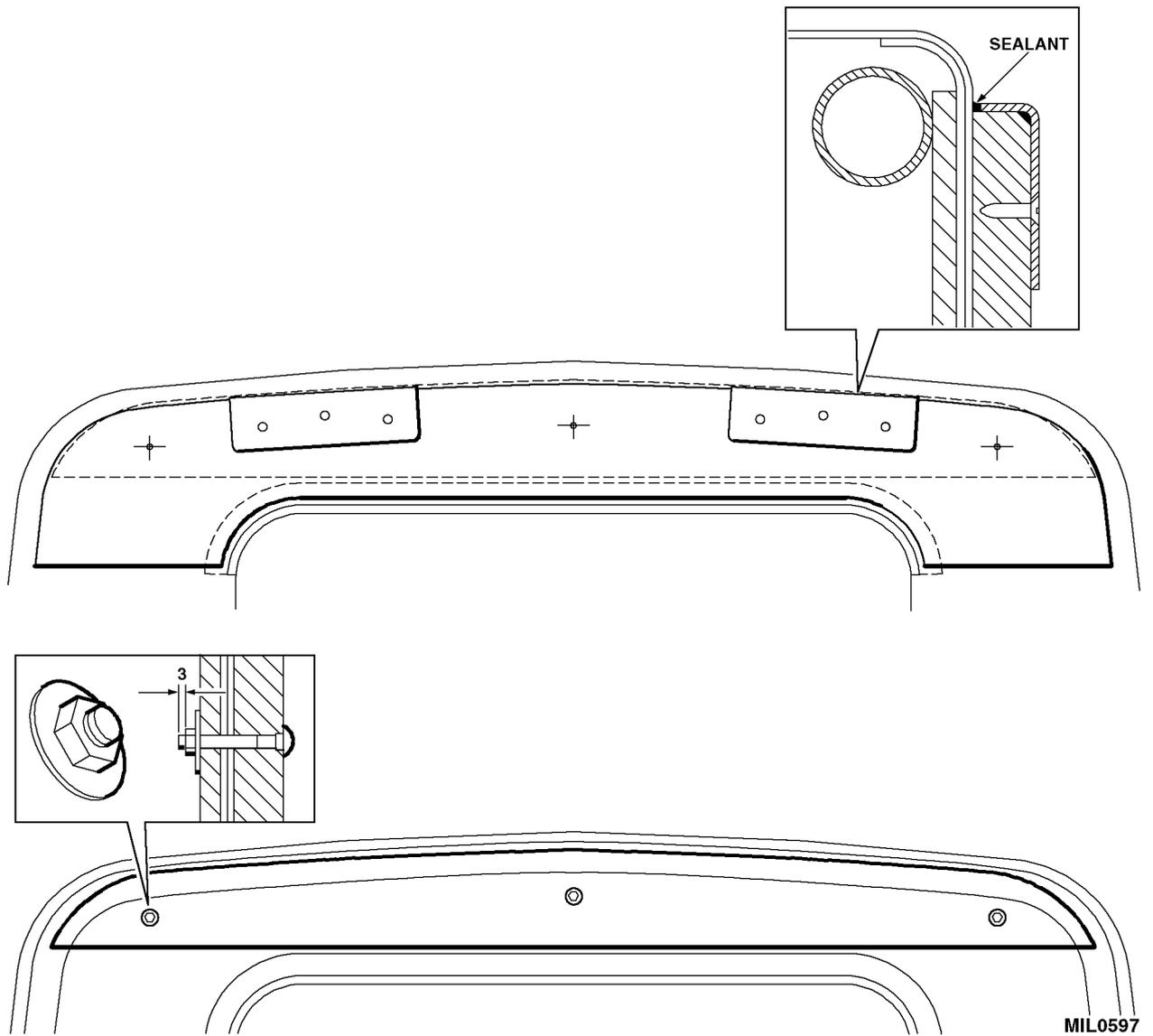


Fig 3 Securing and sealing

**TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION No 4**

Sponsor:

DGES(A) ES52
File ref: D/DGES(A) 548/3/4

Publication Agency:

ATSA Chertsey
Project No:ES52c/4356
File ref: DE/CH/4118/LVG

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
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SUBJECT: Fitting Emergency lights, siren and harness.
(Approval No LSTP 12-6661)

INTRODUCTION

- 1 This instruction details the fitting of emergency lights, siren, harness and associated fittings.
 - 1.1 Limitations on use of equipment. Nil

APPLICABILITY

- 2 Truck Utility Light (TUL) HS and Truck Utility Medium (TUM) HS vehicles all variants.
 - 2.1 Fitted to subject vehicles held by user units.
 - 2.2 Unmodified stock, held at all levels of technical storage.

REASON FOR MODIFICATION

- 3 Code 2 - to improve operational performance

PRIORITY

- 4 Army: Routine
RAF: Class 3

ESTIMATED TIME REQUIRED

- 5 Embodiment: 8 man-hours

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

Units authorised to install emergency blue lights and sirens, i.e. RMP EOD RAF Police by.

ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.

RAF - Units not later than the next routine maintenance and Vehicles Depots before next issue of vehicle.

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action: NA

Action required by

7

7.1 Units and establishments holding equipment.

7.1.1 Examine vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary Units with level 2 REME Support demand the stores required.

7.1.3 ARMY - On receipt of stores, request REME to modify equipment.

7.1.4 ARMY - Record the modification subject and AESP number in equipment documents.

7.1.5 RAF - Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADP MTMS job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

7.2 Army units authorised to carry out levels 2,3 and 4 maintenance and RAF units.

7.2.1 ARMY - When requested by users or during overhaul of equipments on charge without REME level 2 Support, obtain the items listed in Para 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.2.3 Complete AF G1084A when reporting completion of the modification to FORWARD (RAF) using the following code:

RAF: MODIFICATION CODE AFN 150

NOTE

RAF units operating STAMA are also to complete ADP MTMS Job Certification Sheet and to follow the procedures laid down in 100C-08A.

7.3 All recipients of this instruction. Add particulars to AESP 2320-D-128-811 Mod instr index.

Stores tools and equipment

8

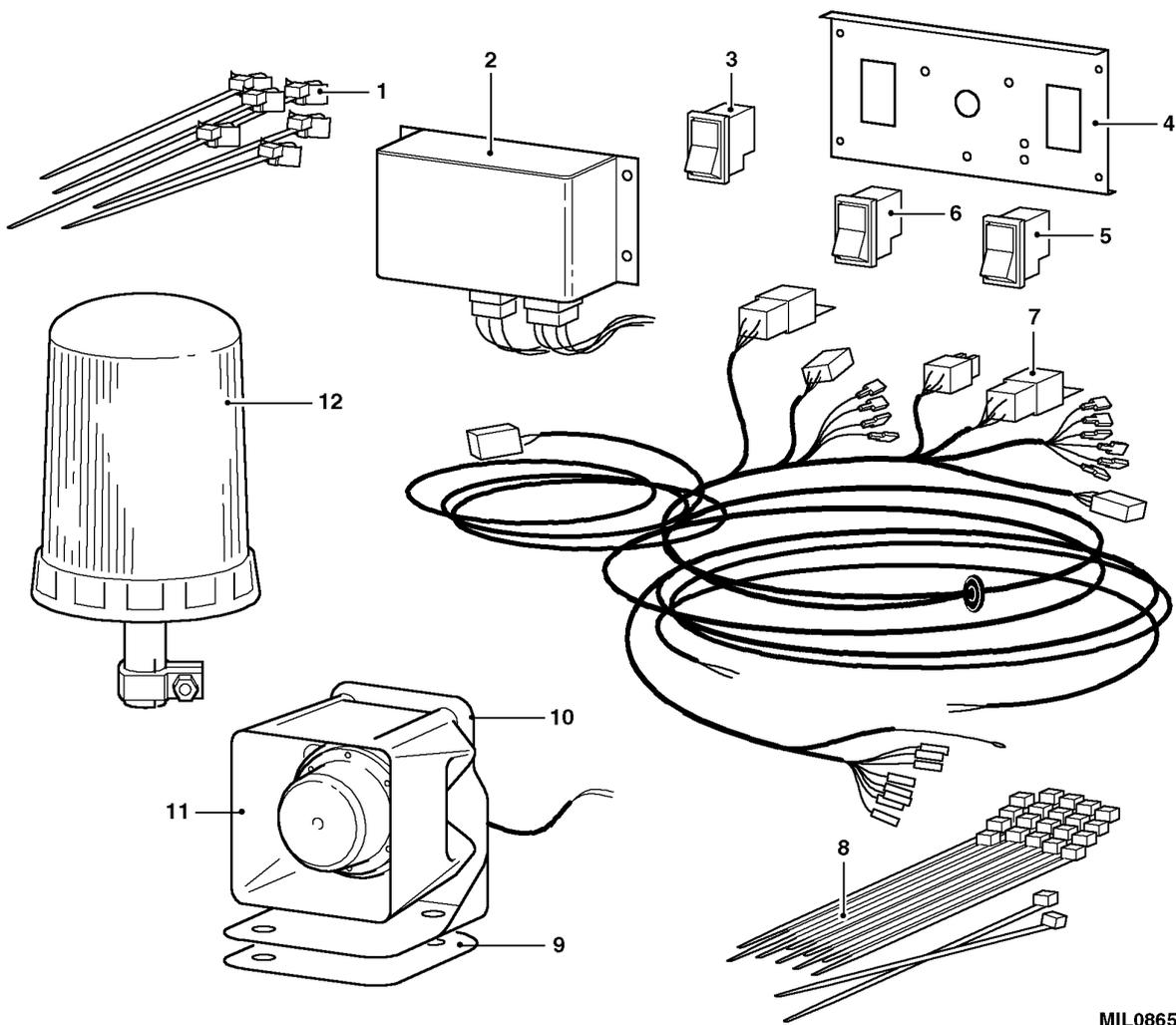
8.1 Stores to be demanded.

8.1.1 The following modification set is to be demanded quoting this instruction authority for demand.

Item No	DMC	NSN/Part No	Designation	Qty Per eqpt
	7XD	2540-99-830-1219	Mod set: comprising:	1
1	7XDW	5340-99-573-6114	Insert cable tie	(5)
2	7XD	5963-99-663-6041	Amplifier c/w fixings	(1)
3	7XD	2510-99-705-6006	6 way switch plate	(1)
4	7XD	5930-99-301-8338	Switch, siren	(1)
5	6MT4	5930-99-125-8823	Switch, beacon	(1)
6	7XD	6150-99-471-4918	Siren/beacon harness	(1)
7	6MT1	5340-99-195-5122	Flat cable tie	(50)
8	7XD	5930-99-815-8072	Switch, isolation	(1)
9	7XD	6350-01-450-5252	Siren	(1)
10	7XD	5340-99-841-4004	Mounting bracket	(1)
11	7XD	5310-99-212-1593	Nut plate	(1)
12	G1	5305-99-122-5367	Screws, M8 x 25	(2)
13	7XD	6220-99-732-0786	Beacon assy	(2)
14	6MT1	5340-99-655-2993	'P' clips	(2)
15	7XD	5340-99-730-8021	Mounting plate	(2)
16	7XD	5330-99-108-5074	Neoprene seal	(2)
17	G1	5305-99-122-5361	Screw, M6 x20	(12)
18	G1	5310-99-139-5313	Nut, M6	(12)
19	G1	5310-99-122-6474	Washer	(12)
20	7XDW	5305-99-864-4835	Screw, M6 x 16	(4)
21	7XD	5310-99-601-8073	Nut, flanged	(4)
22		STC4435	Mounting plate (Soft top only - alternative to item 15)	(2)
23		STC4436	Clamp c/w washer (Soft top only)	(4)

Sequence of operations**NOTES**

- (1) The main numbers of Para 8 are used as references throughout this instruction.
- (2) The harness fits both LH and RH drive vehicles. There will be a need to gather up and hide spare cable at suitable points within the vehicle and inside the engine compartment.
- (3) Various plugs, fittings and accessories to complete this task are supplied in a plastic bag attached to the harness.
- (4) For an illustration of the principal components (refer to Fig 1).



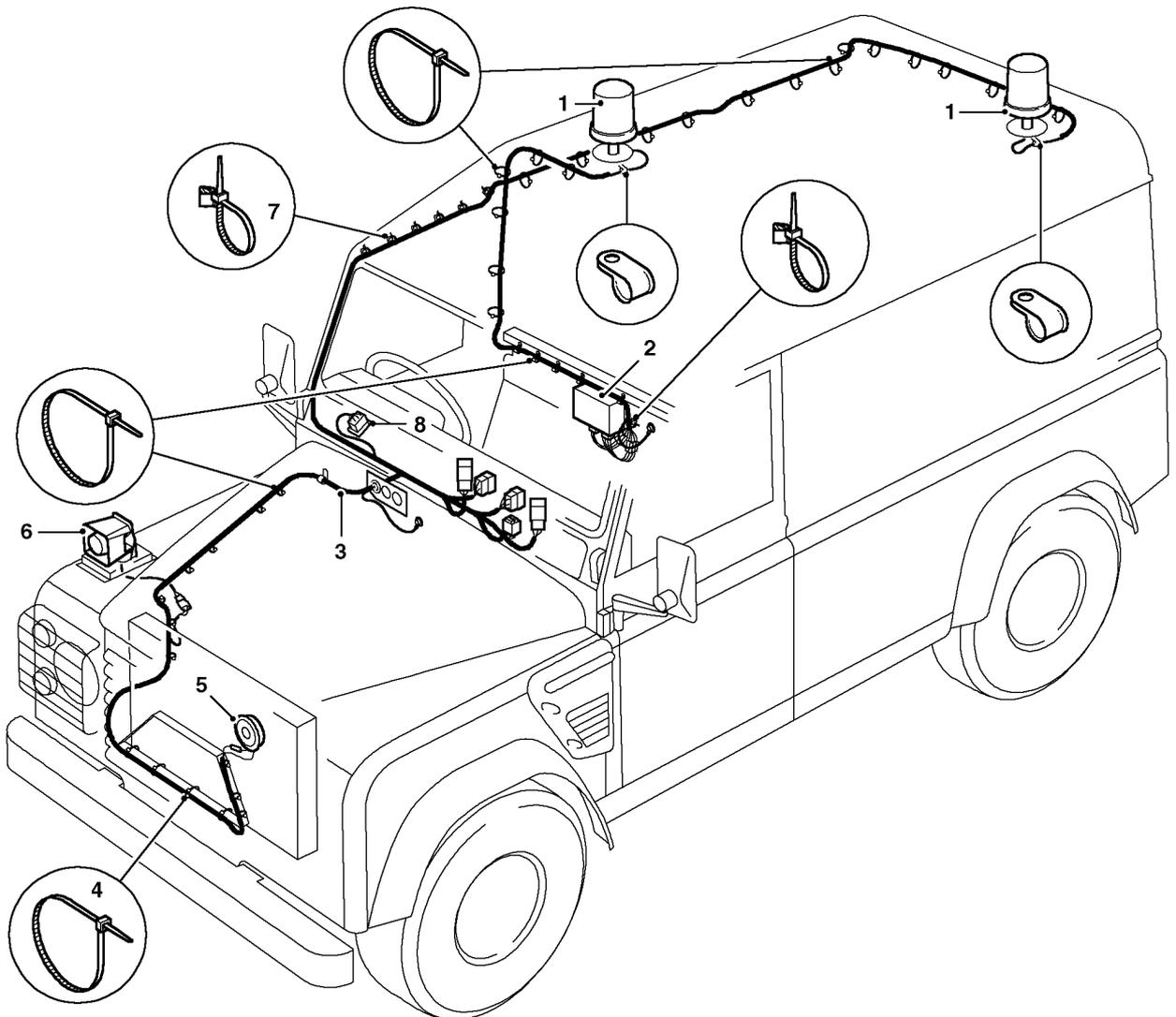
MIL0865

- | | | | |
|---|-------------------|----|-----------------|
| 1 | Insert cable ties | 7 | Harness |
| 2 | Amplifier | 8 | Flat cable ties |
| 3 | Switch - isolator | 9 | Nut plate |
| 4 | Switch plate | 10 | Bracket |
| 5 | Switch - siren | 11 | Siren |
| 6 | Switch - beacon | 12 | Beacon |

Fig 1 Principal components

9 Carry out the modification as follows:

9.1 The beacon/siren harness is integrated with the existing vehicle harness. A layout of the harness run, fixings and equipment is shown in Fig 2.



MIL0866

- | | | | |
|---|----------------------|---|------------------|
| 1 | Beacon | 5 | Horn |
| 2 | Amplifier | 6 | Siren |
| 3 | Beacon/siren harness | 7 | Cable tie |
| 4 | Cable tie | 8 | Isolation switch |

Fig 2 Vehicle layout

9.2 Carry out the following preliminary tasks.

9.2.1 Disconnect the vehicle batteries (refer to Cat 522, Chap 13-1) and on Fitted For Radio (FFR) vehicles the radio batteries (refer to Chap 13-2).

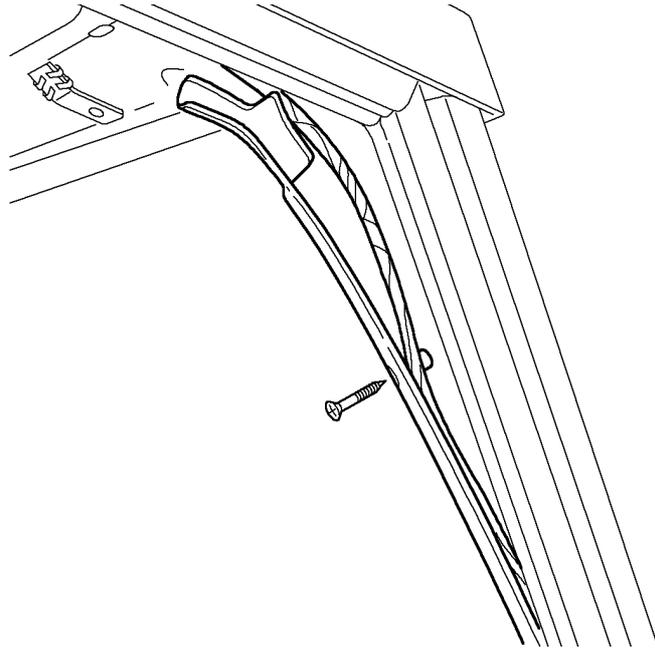
9.2.2 Remove binnacle (refer to cat 522 Chap 13-1).

9.2.3 Disconnect speedometer and hang binnacle to the right of the steering column.

- 9.2.4 Remove 6-way lighting switch and side panels (refer to cat 522 Chap 13-1).
- 9.2.5 Remove all items from 6-way switch panel and discard panel.
- 9.2.6 Remove front grill (refer to cat 522 Chap 16).
- 9.2.7 Undo screws and remove doorpost finisher as shown at Fig 3 (driver's side only).

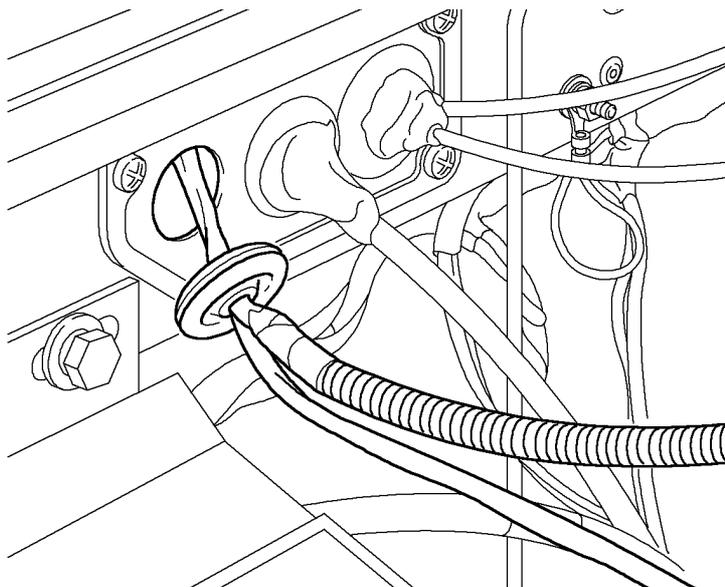
9.3 Fitting the harness.

- 9.3.1 Remove grommet blank as shown at Fig 4 (drivers side only), pass the vehicle horn, siren and earth wires into the engine bay area from inside vehicle and fit grommet.



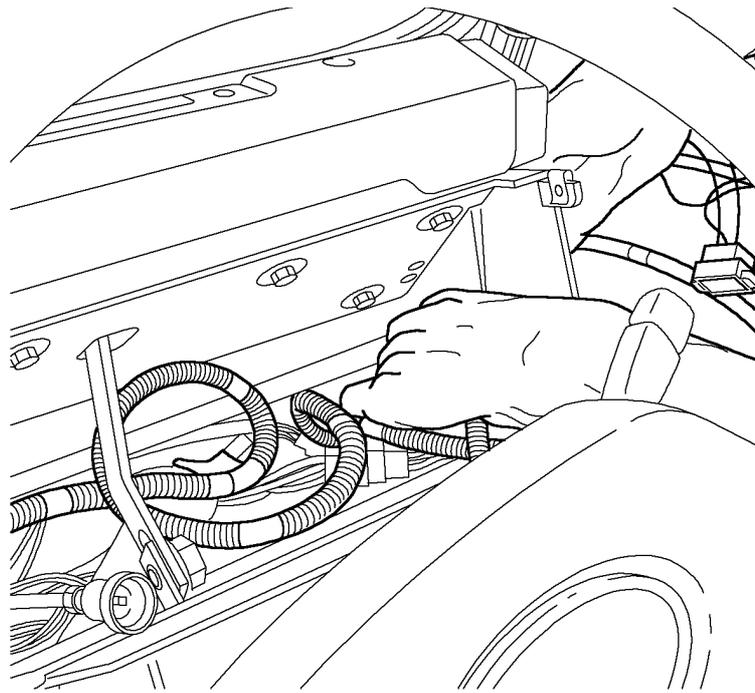
MIL0867

Fig 3 Removal of door post finisher



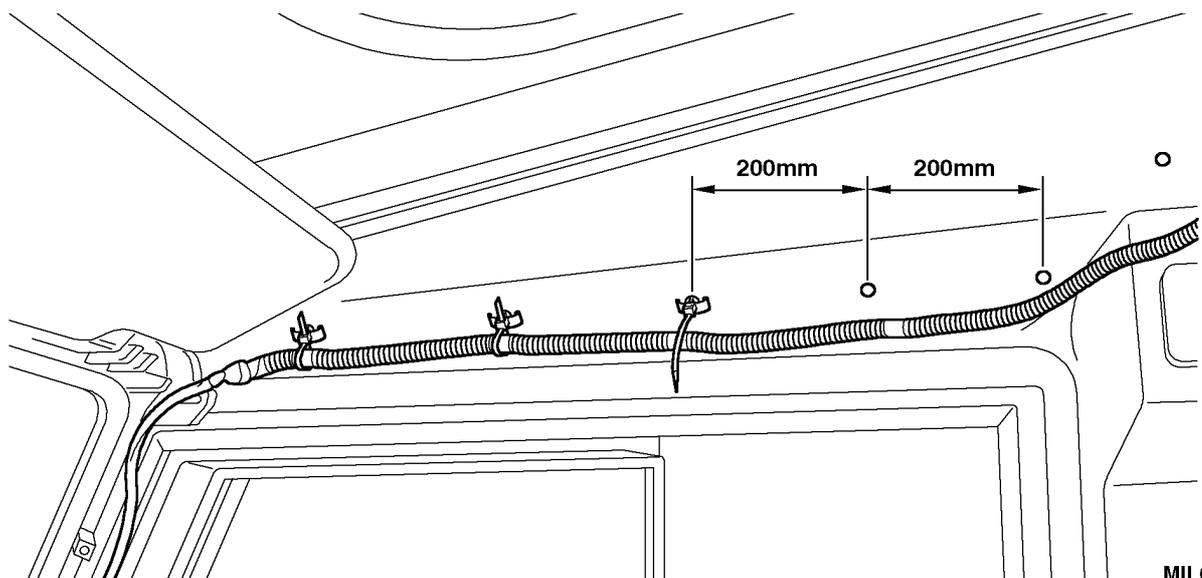
MIL0868

Fig 4 Fitting harness and grommet



MIL0869

Fig 5 Routing of harness



MIL0870

Fig 6 Door top alignment

9.3.2 Place the switch/relay wires in the switch panel area, route rest of harness across to base of binnacle area and up the side of the windscreen as shown at Fig 5.

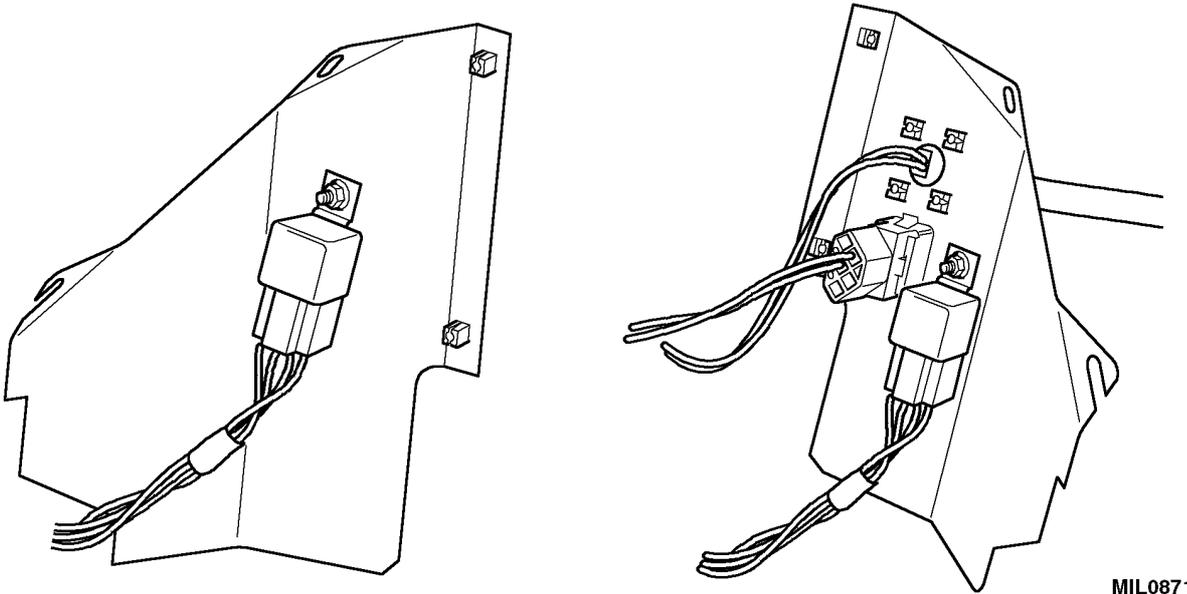
9.3.3 Secure harness to the top of the door finisher by drilling 5 mm holes as shown at Fig 6, then clip harness to the top of the door finisher using insert cable ties (Item 1).

9.4 Fitting the relays.

9.4.1 Locate relays on beacon/siren harness, position relays in switch side panels as shown at Fig 7 local to appropriate switch. Drill 7 mm holes and fit relays with fixings (Items 20 and 21).

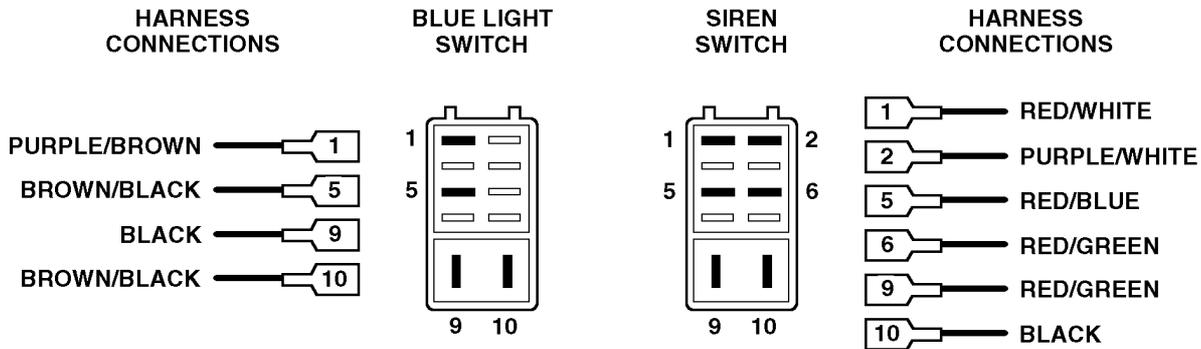
NOTE

Relays must be fitted in vertical position as shown.



MIL0871

Fig 7 Fitting relays



MIL0872

Fig 8 Switch configuration

9.4.2 Fit siren and beacon switches (Items 4 and 5) into new 6-way front switch panel (Item 3).

9.4.3 Connect siren/beacon harness to switches as shown at Fig 8.

9.4.4 Fit white 4-way light switch connector (male) on main harness to white 4-way connector (female) on beacon/siren harness.

9.4.5 Fit black light switch connector (female) on main harness to black connector (male) on beacon/siren harness.

9.4.6 Fit remaining white connector on main harness to white connector on beacon/siren harness.

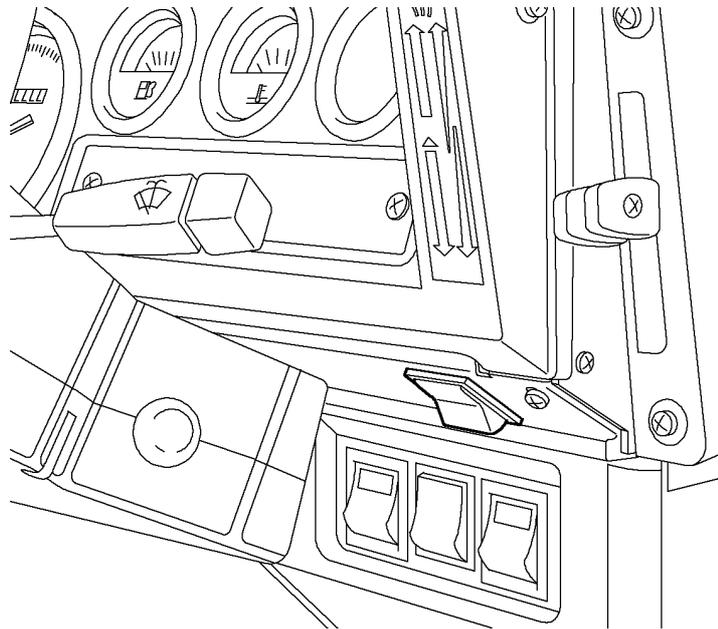
9.4.7 Assemble and fit 6-way switch and side panels (refer to Cat 522 Chap 13-1).

9.5 Fitting the isolation switch.

9.5.1 Remove blank from underside of binnacle area.

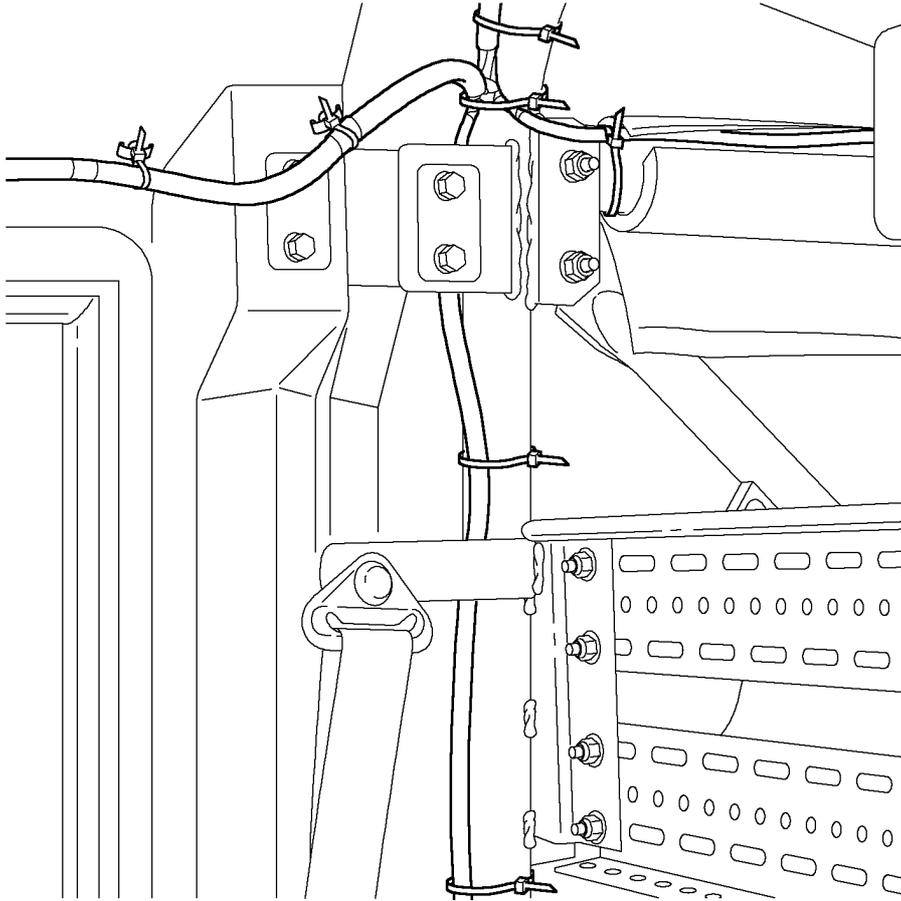
9.5.2 Locate isolation connector on harness and connect to isolation switch.

9.5.3 Fit switch in aperture, push to lock in position as shown at Fig 9.



MIL0873

Fig 9 Isolation switch



MIL0874

Fig 10 Cable breakout

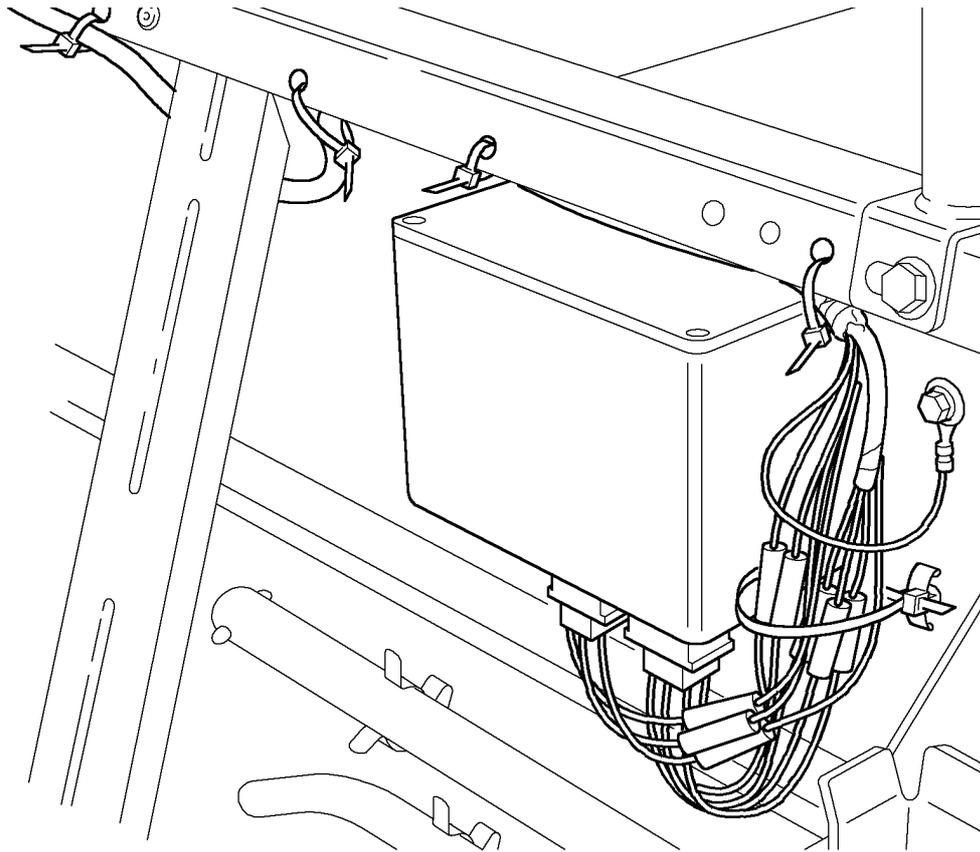
9.6 Fitting the amplifier.

- 9.6.1 Fix harness to front rollover bar upright at harness breakout (amplifier, front/rear beacon cable), using cable tie (Item 7) as shown at Fig 10.
- 9.6.2 Route amplifier cable down the front upright; fix every 200 mm.
- 9.6.3 Continue amplifier cable across rear bulkhead and fix under the top lip as shown at Fig 11.
- 9.6.4 Position amplifier unit and spot drill fixing holes,

NOTE

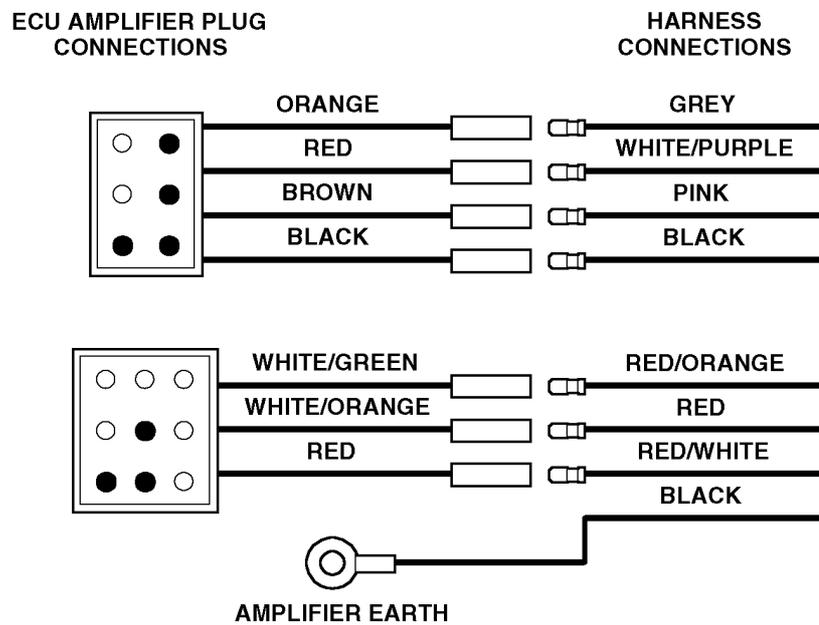
Unit should be positioned as high as possible on rear bulkhead, on the passenger side approx. 300 mm from the centre line of the vehicle.

- 9.6.5 Drill 6 mm diameter holes to, fasten unit to front face of rear bulkhead using fixings supplied.
- 9.6.6 Drill 7 mm hole, clean area around hole to ensure sound earth connection and secure amplifier earth wire to bulkhead using fixings (Items 20 and 21).



MIL0875

Fig 11 Amplifier



MIL0876

Fig 12 Amplifier connections

- 9.6.7 Connect harness to amplifier unit as shown at Fig 12.
- 9.6.8 Tidy amplifier harness using cable ties provided to the lip.

9.7 Fitting the beacons.

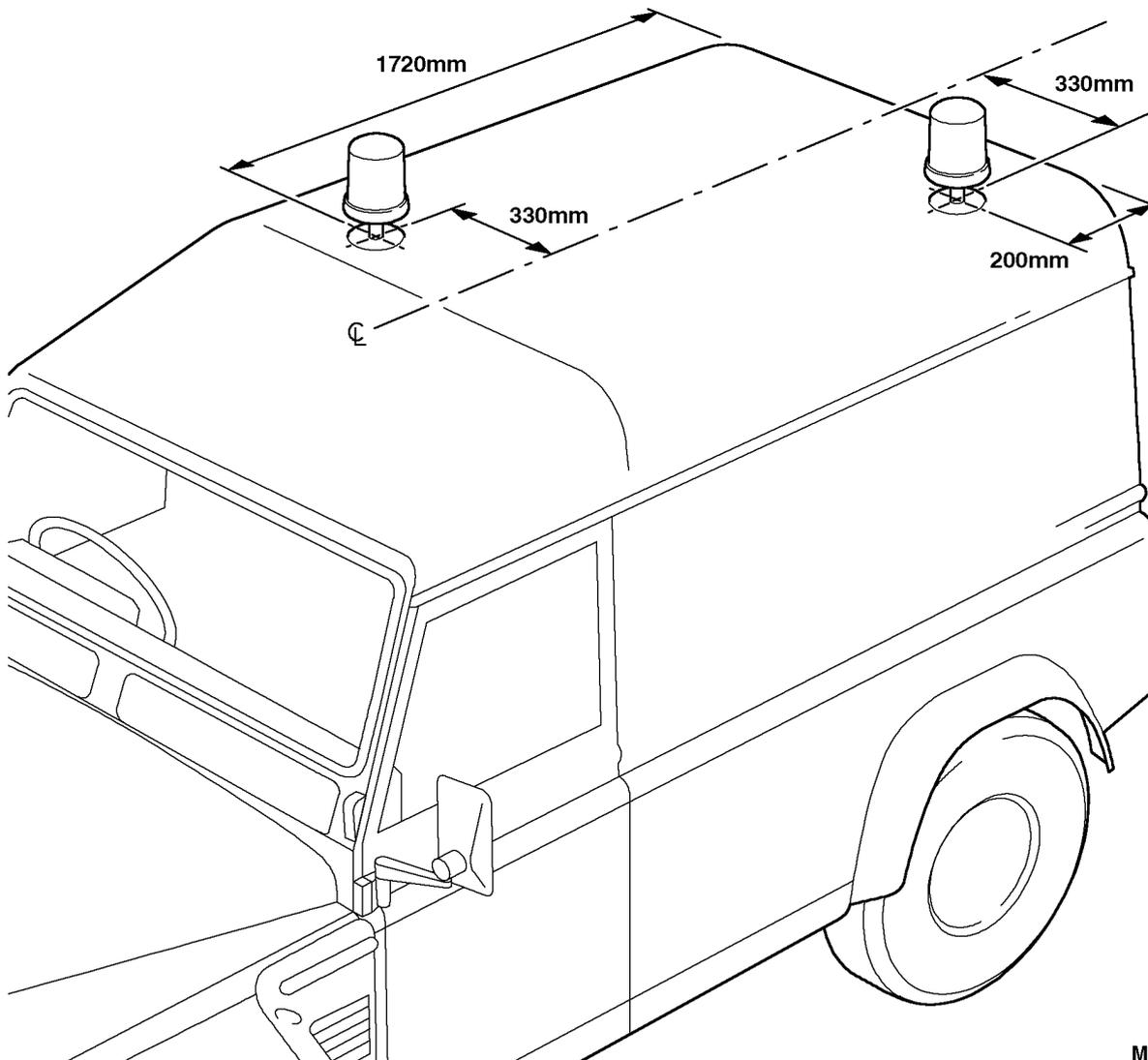
9.7.1 Route front beacon harness along rollover bar to approximately line up with where the front beacon hole driver's side will be, cable tie loosely.

9.7.2 Mark fixing point for front beacon as shown at Fig 13.

9.7.3 Using the mounting plate (item15) as a template, drill six 7 mm diameter holes and one 26 mm diameter hole to suit.

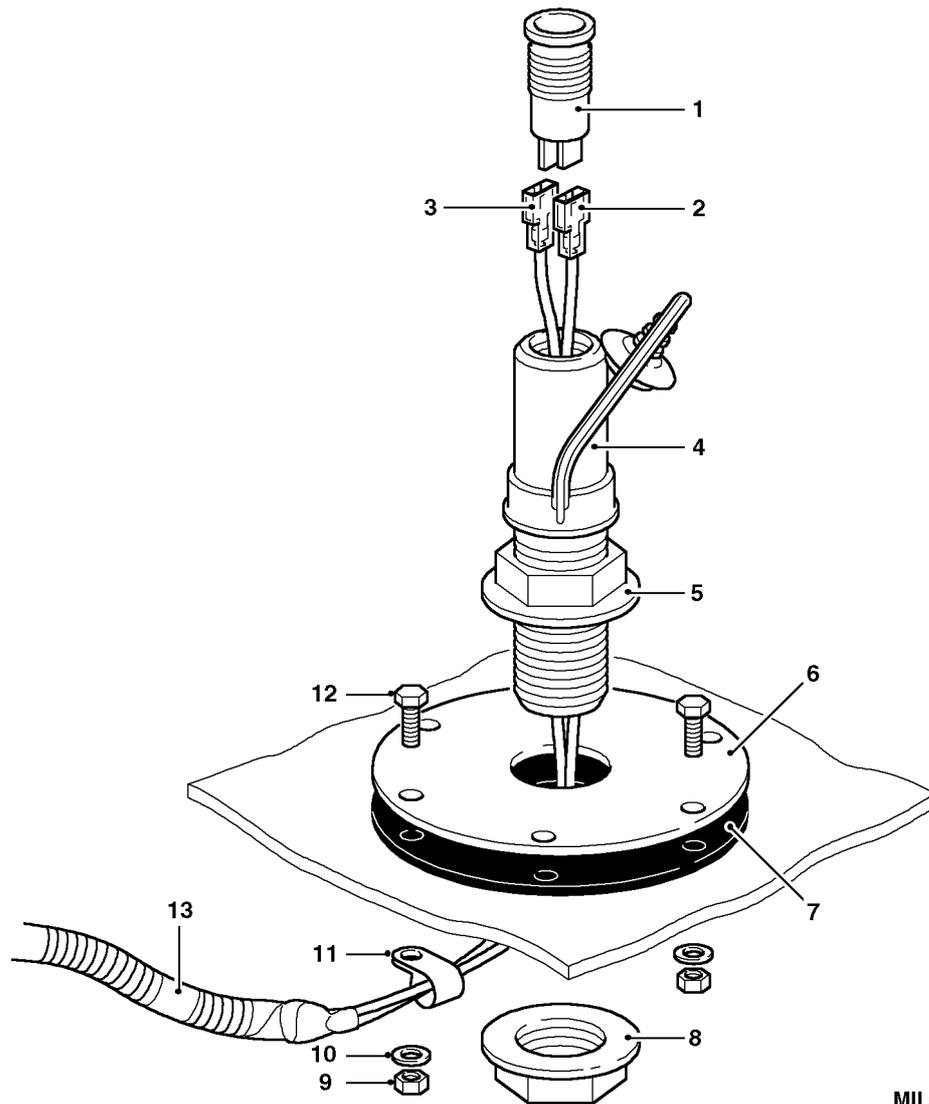
NOTE

When the siren is fitted to a soft top vehicle an alternative to (Item 15) is fitted under the canopy (Item 22) and clamped (Item 23) directly to the roll bar.



MIL0897

Fig 13 Positioning front and rear beacons



MIL0877

- | | | | |
|---|------------------|----|--------------|
| 1 | Terminal adapter | 8 | Securing nut |
| 2 | Harness wire | 9 | Nut |
| 3 | Harness wire | 10 | Washer |
| 4 | Socket unit | 11 | 'P' clip |
| 5 | Upper nut | 12 | Screw |
| 6 | Mounting plate | 13 | Harness |
| 7 | Neoprene seal | | |

Fig 14 Beacon assembly

9.7.4 Fit mounting plate (item 15) with neoprene seal (item 16) and secure with M6 fixings (items 17, 18 and 19).

Refer to Fig 14.

9.7.5 Displace beacon socket seal, if fitted, remove terminal adapter and securing nut.

9.7.6 Pass the two beacon harness wires through nut, roof and socket.

9.7.7 Connect the black wire to the short terminal blade and the yellow wire to long terminal blade.

9.7.8 Spin the terminal adapter into the socket unit.

NOTE

Take care not to twist the harness wires when securing the terminal adapter to socket.

9.7.9 Tighten the lower and upper nuts to secure unit.

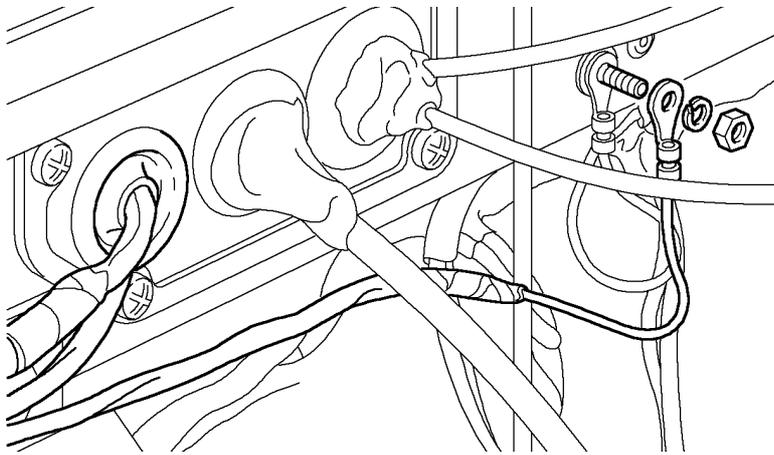
9.7.10 Secure harness to mounting plate using a 'P' clip.

9.7.11 Fit beacon in to terminal adapter and tighten pinch bolt to secure.

9.7.12 Mark position of rear beacon (refer to Fig 13).

9.7.13 Route harness for rear beacon along the horizontal bars and over top of rear rollover bar to rear beacon location on the passenger side, cable tie loosely at 200 mm centres) to horizontal and rollover bars.

9.7.14 Fit rear beacon and connect harness as described in Paras 9.7.3 to 9.7.11).



MIL0878

Fig 15 Engine bay earth stud

9.8 Connecting the siren.

9.8.1 In the engine bay connect harness earth eyelet to existing earth stud and secure as shown at Fig 15.

9.8.2 Route siren harness with existing wing harness, across top lip of the wing edge, cable tie loosely as shown at Fig 16.

Refer to Fig 17

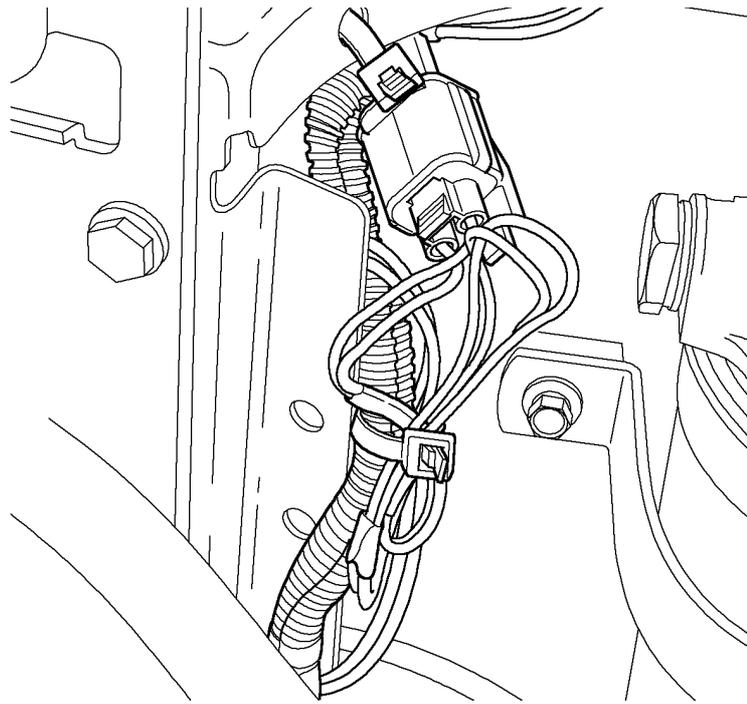
9.8.3 Locate siren plug housing on harness adjacent to siren mount.

9.8.4 Cut the 2 siren leads to 360 mm length slide seals over wires, cut insulation back to expose 4 mm bare ends and crimp the two terminals on to wires.

NOTE

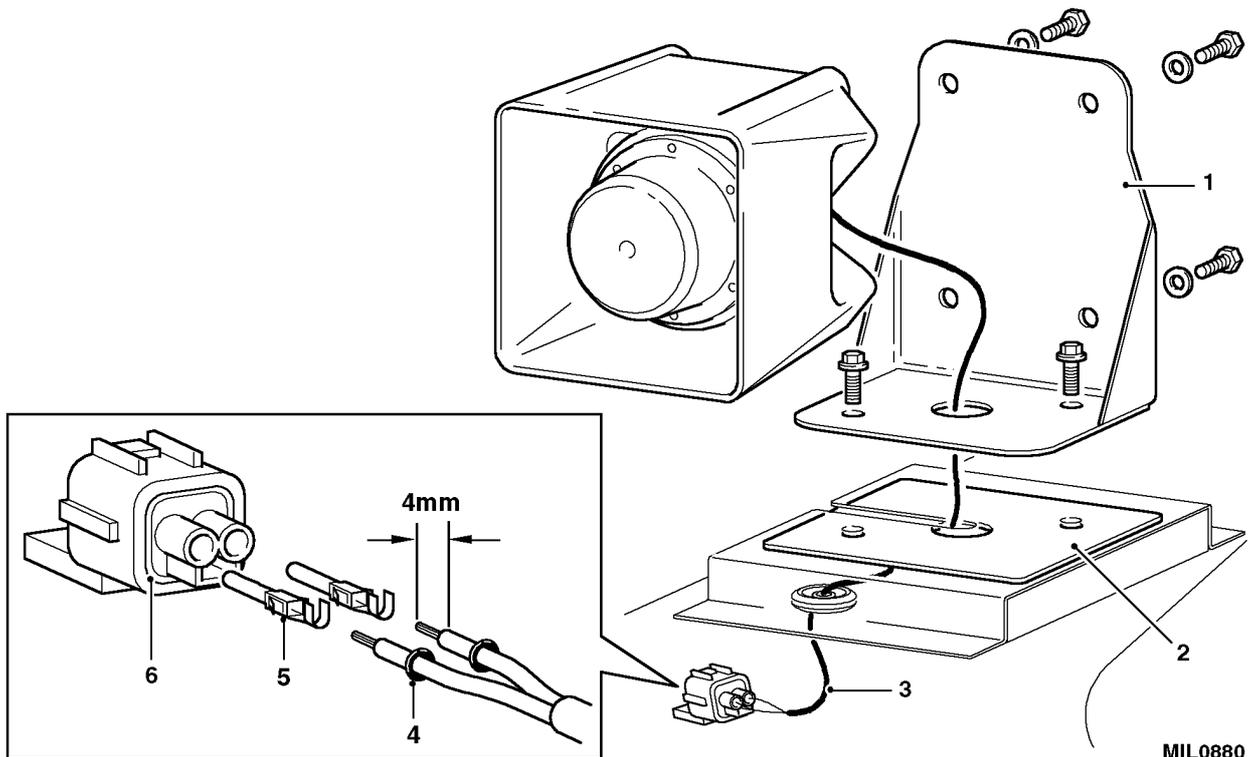
Do not allow wire to obstruct locking cavity on terminal.

9.8.5 Open antenna mount door and insert nut plate into cavity above antenna cables.



MIL0879

Fig 16 Siren connector



MIL0880

- | | | | |
|---|------------------|---|--------------|
| 1 | Mounting bracket | 4 | Seals |
| 2 | Nut plate | 5 | Terminals |
| 3 | Wires | 6 | Plug housing |

Fig 17 Siren assembly

- 9.8.6 Pass trailing leads on siren through hole in mounting bracket, slot in mount and hole in nut plate and in to engine compartment via existing grommet used for antenna cable access.
- 9.8.7 Attach siren mounting bracket to antenna mounting and secure with M8 fixings (Item 12).
- 9.8.8 Secure siren to mounting bracket using the fixings supplied.
- 9.8.9 Carefully stow antenna cables in cavity and close door.
- 9.8.10 Locate plug housing in accessories bag, establish connection profile with socket on siren harness.

white wire on siren	→	slate wire on harness
black wire on siren	→	pink wire on harness

- 9.8.11 Insert terminals in to housing ensuring anti-back up clips.
- 9.8.12 Push seals firmly in to housing orifices.
- 9.8.13 Connect siren to harness.

9.9 Connecting to the horn.

- 9.9.1 Route vehicle horn harness down the side of the radiator, underneath the radiator drivers side along the radiator 'A' frame (front of radiator) and connect to the horn as shown at Fig 18. Clip at convenient points at approximately 200 mm centres.
- 9.9.2 Reconnect the vehicle batteries (refer to Cat 522, Chap 13-1) and on Fitted For Radio (FFR) vehicles the radio batteries (refer to Chap 13-2).
- 9.9.3 Tidy and secure all wiring as necessary.
- 9.9.4 Refit all panels where necessary.

NOTE

Ensure that when re-fitting the door post finisher that the fixing screws do not pinch the harness cable as shown at Fig 19.

- 9.9.5 Fit binnacle (refer to cat 522 Chap 13-1).

Testing after embodiment

10 Nil

EFFECT ON WEIGHT

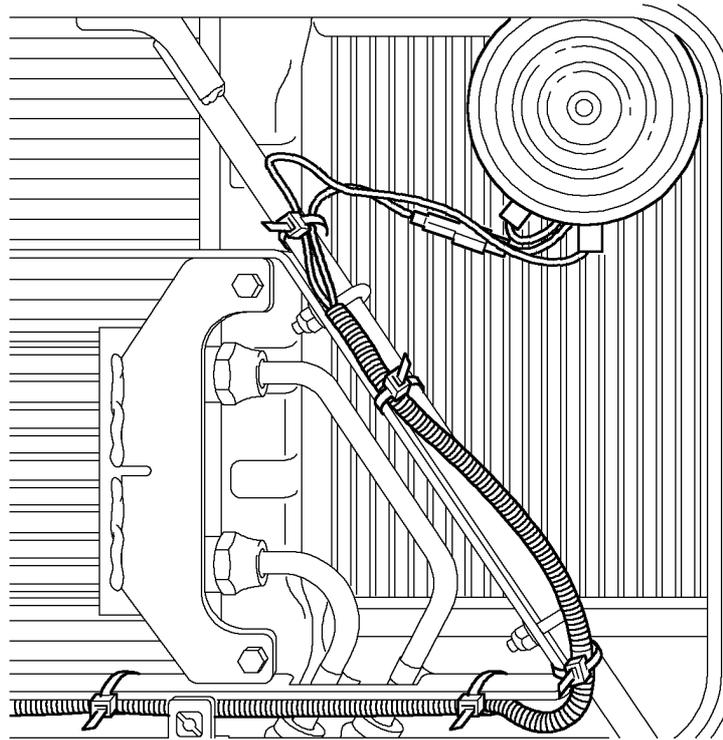
11 Negligible

PUBLICATION AMENDMENTS

NOTE

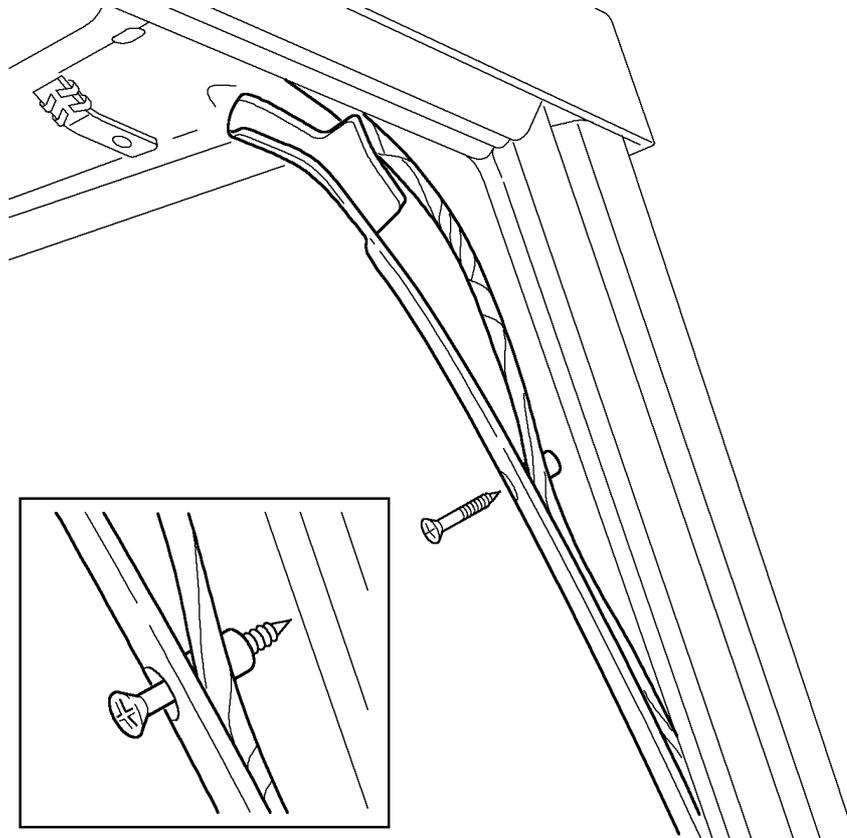
Necessary amendments will be issued separately.

12 Nil



MIL0881

Fig 18 Horn



MIL0882

Fig 19 Refitting door post finisher

TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION No 6

Sponsor:

DGES(A) ES52
File ref: D/DGES(A) 548/3/4

Publication Agency:

ATSA Chertsey
Project No:ES52c/4356
File ref: DE/CH/4118/LVG

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Fitting spare wheel tyre inflation valve extension.
(Approval No LSTP 12-6663)

INTRODUCTION

- 1 This instruction details the fitting of a tyre inflation valve to the spare wheel.
 - 1.1 Limitations on use of equipment. Nil

APPLICABILITY

- 2 Truck Utility Light (TUL) HS and Truck Utility Medium (TUM) HS all variants.
 - 2.1 Fitted to subject equipment held by user units.
 - 2.2 Unmodified stock, held at all levels of technical storage.

REASON FOR MODIFICATION

- 3 Code 4 - to improve maintainability

PRIORITY

- 4 Army: Routine
RAF: Class 3

ESTIMATED TIME REQUIRED

- 5 Embodiment: 1.0 man-hours

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

- ARMY - Units authorised to carry out levels 2, 3 or 4 maintenance.
- RAF - Units not later than the next routine maintenance and Vehicles depots before the next issue of vehicle.

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action: NA

Action required by

7

7.1 Units and establishments holding equipment.

- 7.1.1 Examine vehicle documents to see if modification is applicable.
- 7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary Units with level 2 REME Support demand the stores required.
- 7.1.3 ARMY - On receipt of stores, request REME to modify equipment.
- 7.1.4 ARMY - Record the modification subject and AESP number in equipment documents.
- 7.1.5 RAF - Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADP MTMS job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

7.2 Army units authorised to carry out levels 2,3 or 4 maintenance and RAF units.

- 7.2.1 ARMY - When requested by users or during overhaul of equipments on charge without REME level 2 Support, obtain the items listed in Para 8 and carry out this modification.
- 7.2.2 RAF – On receipt of stores, embody modification.
- 7.2.3 Record completion details of modification against appropriate entry in equipment documents.
- 7.2.4 Complete AF G1084A when reporting completion of the modification to FORWARD (RAF) using the following code:

RAF: MODIFICATION CODE AFN 152

NOTE

RAF units operating STAMA are also to complete ADP MTMS Job Certification Sheet and to follow the procedures laid down in 100C-08A.

7.3 All recipients of this instruction. Add particulars to AESP 2320-D-128-811 Mod instr index.

Stores tools and equipment

8

8.1 Stores to be demanded.

8.1.1 The following modification set is to be demanded quoting this instruction authority for demand.

Item No	DMC	NSN/Part No	Designation	Qty Per eqpt
		N/P	Mod set: comprising:	1
1	8RVO	2640-99-553-2865	Valve extension	(1)
2	6MT14	2640-99-450-0084	Bracket	(1)

Sequence of operations

NOTES

- (1) The item numbers of Para 8 are used as references throughout this instruction.
- (2) For an illustration of principle components as shown at Fig 1.

CAUTION

WHEEL CHANGING. The valve extension and clamp must be removed from the spare wheel before the wheel is fitted to an axle.

9 Carry out the modification as follows:

9.1 Fitting the spare wheel tyre inflation extension.

NOTE

The clip of the clamp should be fitted on the inside of the wheel.

- 9.1.1 Remove spare wheel from side mount carrier.
- 9.1.2 Remove the dust cap from air valve and retain.
- 9.1.3 Fit the clamp (item 2) as shown at Fig 2.
- 9.1.4 Leave the clamp bolt loose at this stage.
- 9.1.5 Attach the valve extension (item 1) to the air valve and tighten as shown at Fig 2.
- 9.1.6 Feed the extension valve through the wheel vent hole and secure in the clamp clip as shown at Fig 2.
- 9.1.7 Tighten the clamp into position ensuring the valve extension flex is not snagged against the inside of the wheel vent hole.

9.1.8 Fit the dust cap to the valve extension

9.1.9 Fit the spare wheel to the side mounted carrier.

Testing after embodiment

10 Nil

EFFECT ON WEIGHT

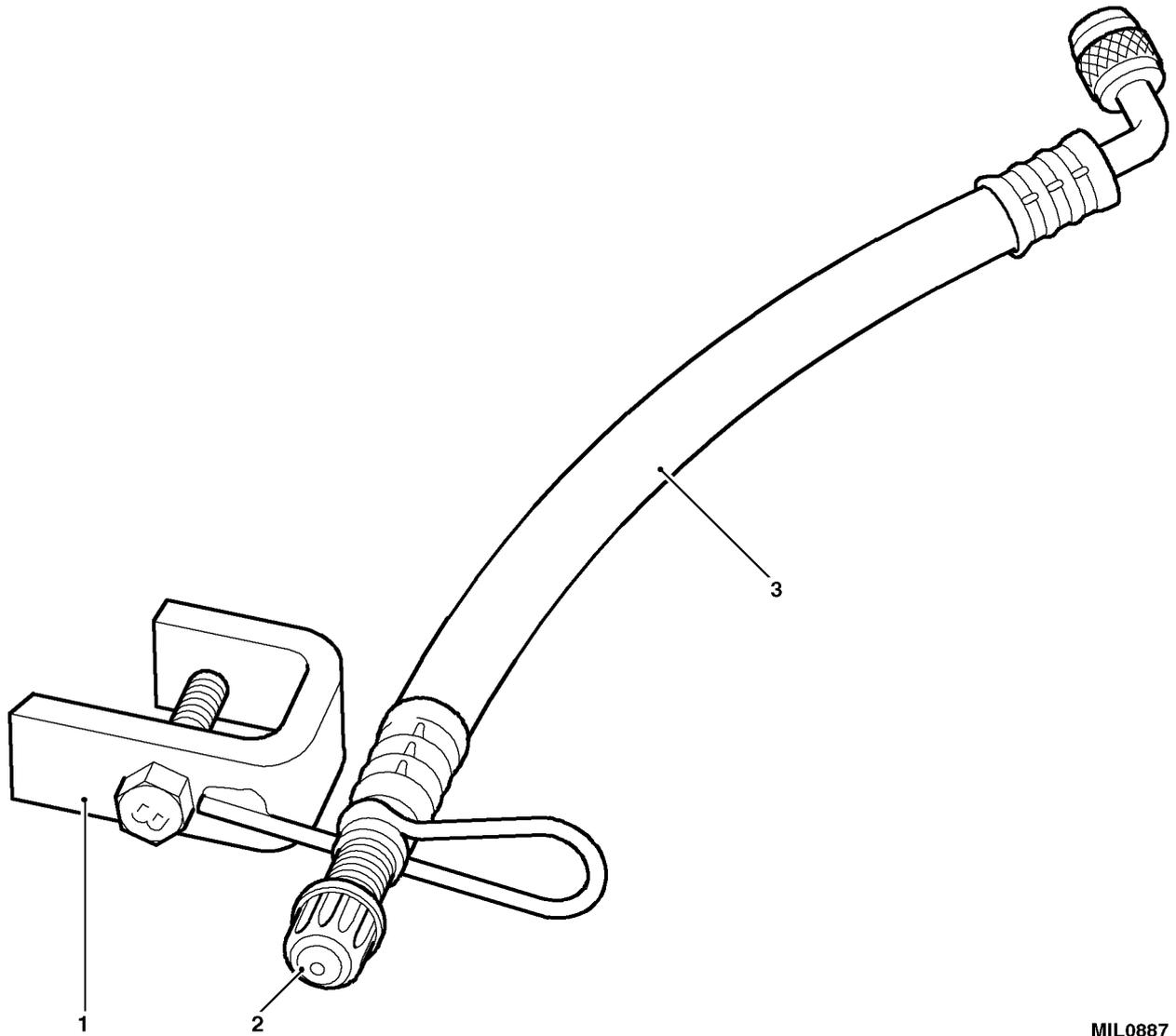
11 Negligible

PUBLICATION AMENDMENTS

NOTE

Necessary amendment(s) will be issued separately.

12 Nil



MIL0887

- | | | | |
|---|-----------------|---|----------|
| 1 | Clamp | 2 | Dust cap |
| 3 | Valve extension | | |

Fig 1 Principal components

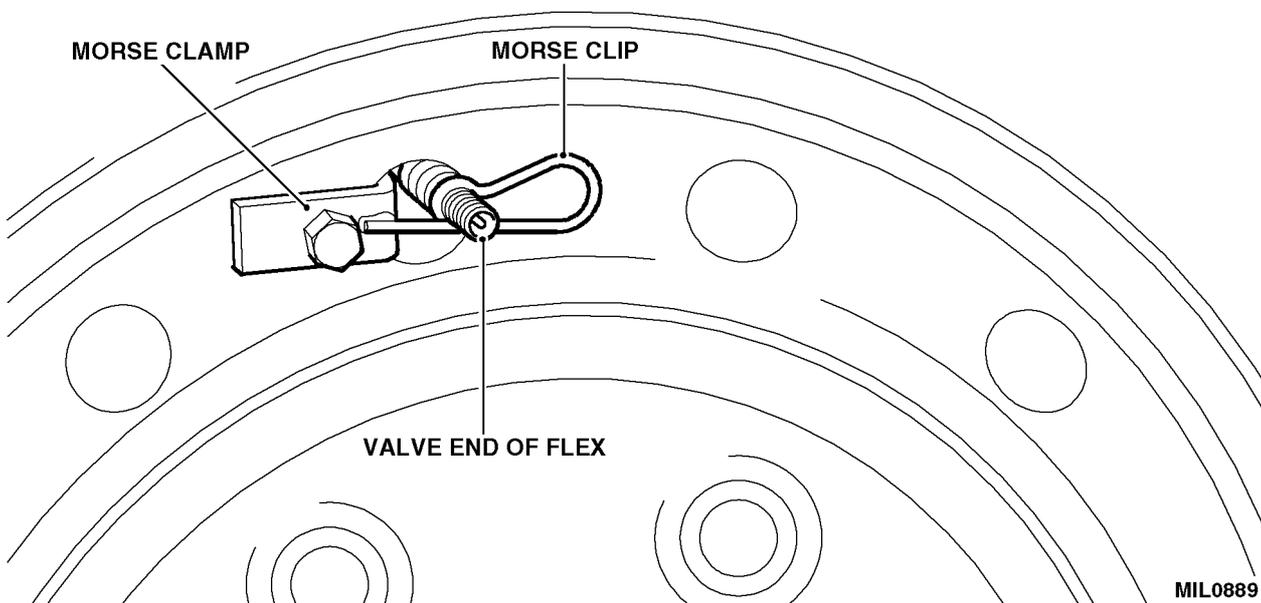
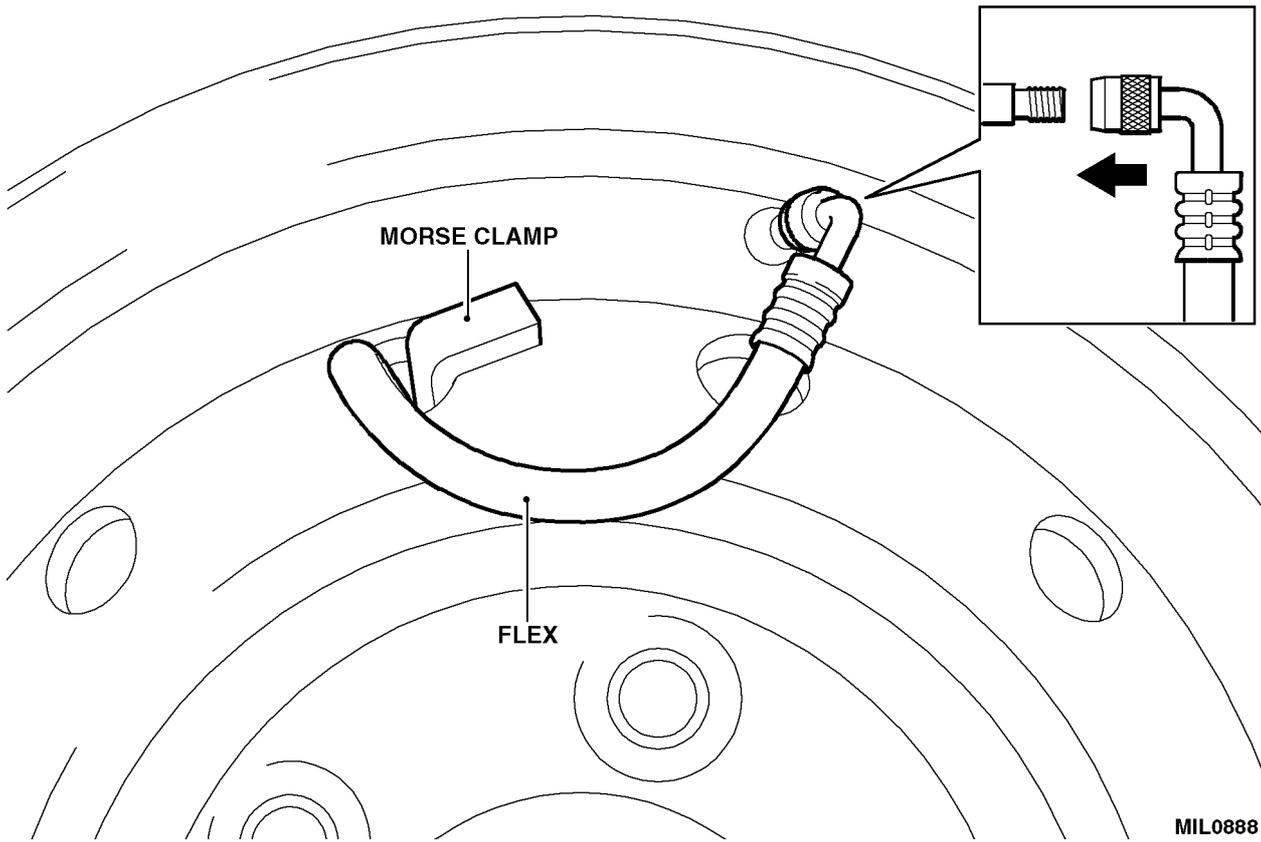


Fig 2 Securing the valve extension to the wheel

**TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION No 7**

Sponsor:

CSV(Sp) IPT

Publication Agency:

Defence Logistics Organisation
Project No:LLVUty-15

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: TUAAM Earth Bonding Improvements.

(Approval No LSTP 12-6664)

INTRODUCTION

1 This instruction details the improvement of earth bonding to the dash to front wing top and wing top to TUAAM box.

1.1 Limitations on use of equipment. Nil

APPLICABILITY

2 Truck Utility Light (TUL) HS (FFR), Truck Utility Medium (TUM) HS (FFR) vehicles all variants.

2.1 Fitted to subject equipment held by user units.

2.2 Unmodified stock, held at all levels of technical storage.

REASON FOR MODIFICATION

3 Code 2 - to improve operational performance

PRIORITY

4 Army: Routine
RAF: Class 3

ESTIMATED TIME REQUIRED

5 Embodiment: 1.5 man-hours

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.
RAF - Units not later than the next routine maintenance and Vehicles Depots before next issue of vehicle.

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action. NA

Action required by

7

7.1 Units and establishments holding equipment.

7.1.1 Examine vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary Units with level 2 REME Support demand the stores required.

7.1.3 ARMY - On receipt of stores, request REME to modify equipment.

7.1.4 ARMY - Record the modification subject and AESP number in equipment documents.

7.1.5 RAF - Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADP MTMS job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

7.2 Army units authorised to carry out levels 2,3 and 4 maintenance and RAF units.

7.2.1 ARMY - When requested by users or during overhaul of equipments on charge without REME level 2 Support, obtain the items listed in Para 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.2.3 Complete AF G1084A when reporting completion of the modification to FORWARD (RAF) using the following code:

RAF: MODIFICATION CODE AFN 153

NOTE

RAF units operating STAMA are also to complete ADP MTMS Job Certification Sheet and to follow the procedures laid down in 100C-08A.

7.3 All recipients of this instruction. Add particulars to AESP 2320-D-128-811 Mod Instr. index.

Stores tools and equipment

8

8.1 Stores to be demanded.

8.1.1 The following items are to be demanded quoting this instruction authority for demand.

Item No	DMC	NSN/Part No	Designation	Qty Per eqpt
			Mod set: comprising:	
1	7XD	6150-99-573-6349	Bonding lead 250 mm long	4
2	6MT4	2590-99-820-7565	Bonding lead 45 mm long	2

8.2 Stores or suitable equivalent to be obtained locally.

	NSN/Part No	Designation	Qty per eqpt
3	SH105161	Screw M5 x 16 mm	2
4	G1/5310-99-122-3032	Washer m5	2
5	7XD/5310-99-702-1808	Insert, threaded M5	2
6	SH106201	Screw M6 x 20 mm	2
7	NH106041	Nut M6	2
8	G1/5310-99-122-6474	Washer M6	2
9	G1/5305-99-122-5368	Screw M8 x 30 mm	2
10	WF108001	Star washer M8	2
11	G1/5310-99-219-1814	Washer M8	2
12	G1/5310-99-122-5296	Nut M8	2

Sequence of operations

NOTES

(1) The main numbers of Para 8 are used as references throughout this instruction.

(2) The following procedure covers the right-hand side of the vehicle. The procedure for the left-hand side is identical.

9 Carry out the modification as follows:

Carry out the preliminary tasks as follows.

9.1.1 Park the vehicle on a level surface and apply the handbrake.

9.1.2 Switch off the engine and remove the ignition key.

9.2 Carry out the following modification to both sides of the vehicle.

Refer to Fig 2

NOTE

It may be necessary to remove expansion tank fixings and pull tank away to clean off paint on right hand wing.

9.2.1 Remove and retain M6 fixings (2), including plastic 'P' clip, securing wing top bracket to dash.

9.2.2 Using a wire brush clean off paint from wing top bracket and for about 30 mm above bracket on dash.

9.2.3 Fit bonding lead (Item 2) to bracket also 'P' clip using existing fixings.

Refer to Fig 1

9.2.4 Drill a 7,8 mm dia hole in dash through upper hole in bonding lead and fit M5 threaded insert (item 5).

Refer to Fig 2

9.2.5 Using M5 fixings (Items 3, 4) secure both bonding leads (items 1 and 2) to dash through top hole.

9.2.6 Remove outer fixing from bonnet hinge and using a wire brush clean off paint from around the hole.

9.2.7 Secure other end of bonding lead to bonnet hinge using existing fixings

9.2.8 Remove M6 fixings in wing flange and discard.

9.2.9 Using a wire brush clean off paint around hole.

9.2.10 Secure bonding lead (Item 1) to wing flange using M6 fixings (items 6, 7 and 8).

9.2.11 Remove centre M8 fixings securing the TUAAM bracket to wing top and discard.

9.2.12 Pass loose end of bonding lead under wing top and secure with M8 fixings (item 9, 10, 11 and 12) as shown.

9.2.13 Brush petroleum jelly over bonding lead joints and where paint has been removed.

Testing after embodiment

10 For earth bond testing and earth bond fastenings in military vehicles refer to Army Equipment Support Publication 5800-A-200-821.

EFFECT ON WEIGHT

11 Negligible

PUBLICATION AMENDMENTS

NOTE

Necessary amendment(s) will be issued separately.

12 Nil

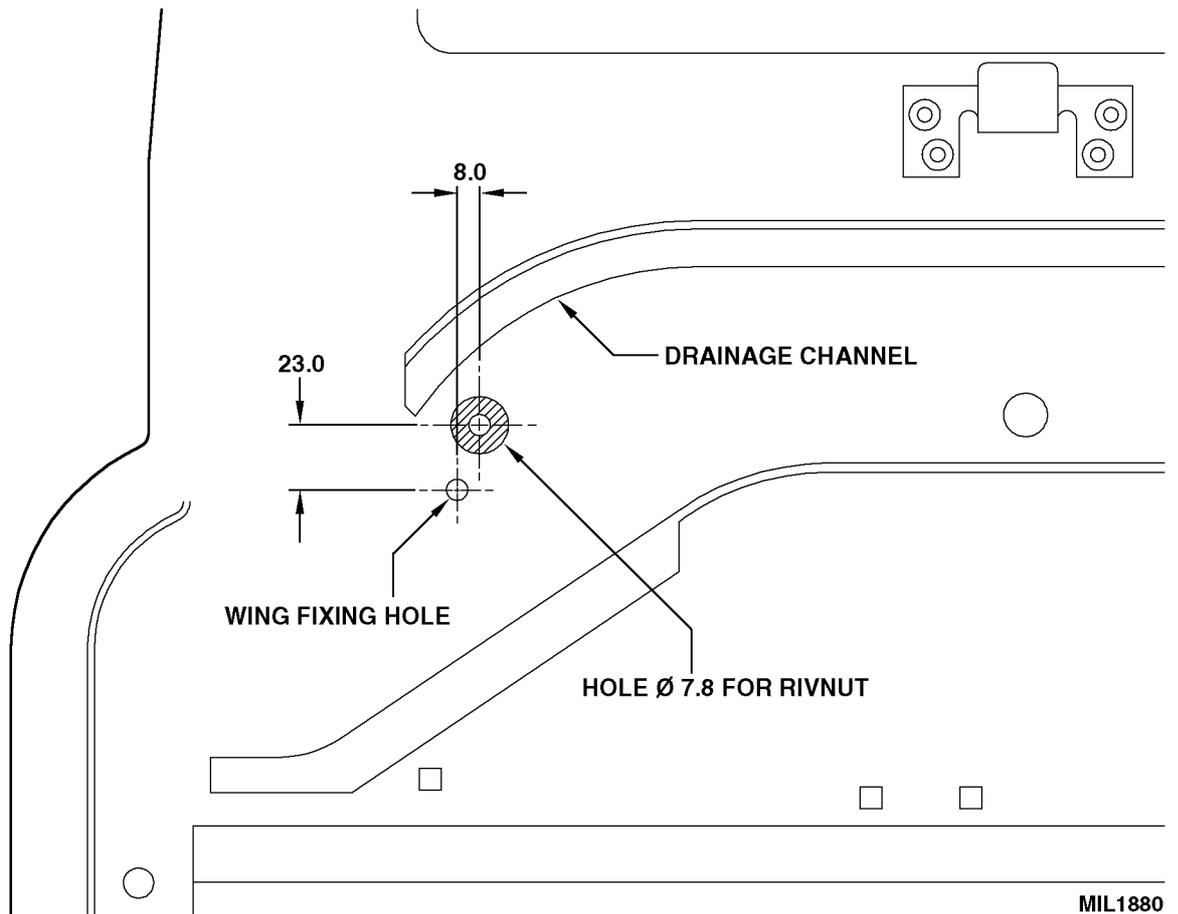
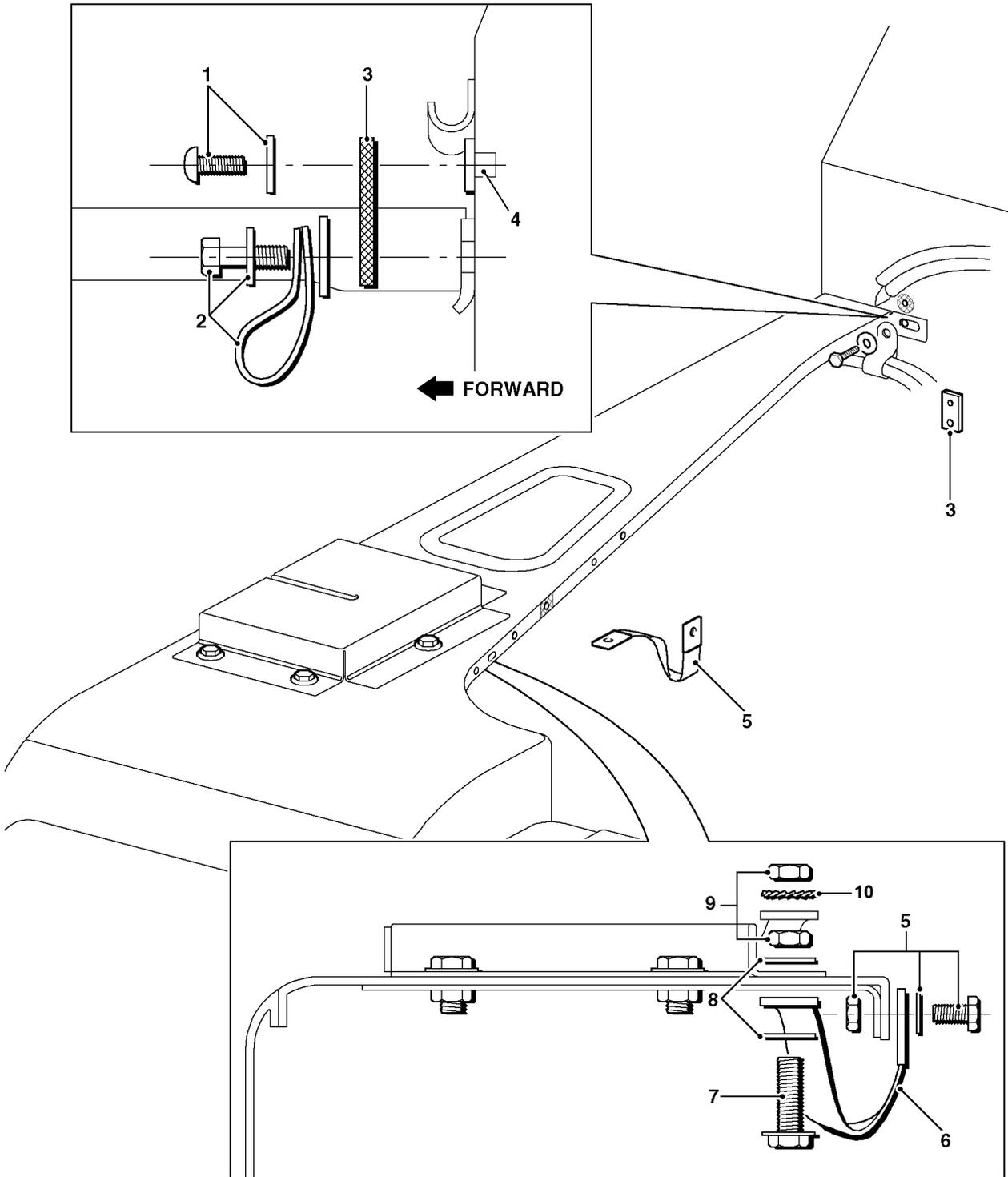


Fig 1 Drilling instruction



MIL0896

- | | | | |
|---|---------------------|----|--------------|
| 1 | M5 screw and washer | 6 | Bonding lead |
| 2 | M6 fixings | 7 | M8 Screw |
| 3 | Bonding lead | 8 | Plain washer |
| 4 | M5 threaded insert | 9 | Nuts |
| 5 | M6 fixings | 10 | Star washer |

Fig 2 Fitting Earth bonding leads

**TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION No 8**

Sponsor:

CSV(Sp) IPT

Publication Agency:

Defence Logistics Organisation
Project No:LLVUty-16

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Input/output Porthole for communications/power cables installation.
(Approval No LSTP 12-6665)

INTRODUCTION

- 1 This instruction details the fitting of an input/output facility for communications/power cables.
 - 1.1 Limitations on use of equipment. Nil

APPLICABILITY

- 2 Truck Utility Light (TUL) HS FFR, Truck Utility Medium (TUM) HS FFR vehicles only.
 - 2.1 Fitted to all equipment held by user units.
 - 2.2 Unmodified stock, held at all levels of technical storage.

REASON FOR MODIFICATION

- 3 Code 2 - to improve operational performance

PRIORITY

- 4 Army: Routine
RAF: Class 3

ESTIMATED TIME REQUIRED

- 5 Embodiment: 2 man-hours

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.
RAF - Units not later than the next routine maintenance and Vehicles depots before the next issue of vehicle.

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action: NA

Action required by

7

7.1 Units and establishments holding equipment.

7.1.1 Examine vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary Units with level 2 REME Support demand the stores required.

7.1.3 ARMY - On receipt of stores, request REME to modify equipment.

7.1.4 ARMY - Record the modification subject and AESP number in equipment documents.

7.1.5 RAF - Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADP MTMS job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

7.2 Army units authorised to carry out levels 2,3 and 4 maintenance and RAF units.

7.2.1 ARMY - When requested by users or during overhaul of equipments on charge without REME level 2 Support, obtain the items listed in Para 8 and carry out this modification.

7.2.2 RAF – On receipt of stores, embody modification.

7.2.3 Record completion details of modification against appropriate entry in equipment documents.

7.2.4 Complete AF G1084A when reporting completion of the modification to FORWARD (RAF) using the following code:

RAF: MODIFICATION CODE AFN 154

NOTE

RAF units operating STAMA are also to complete ADP MTMS Job Certification Sheet and to follow the procedures laid down in 100C-08A.

7.3 All recipients of this instruction. Add particulars to AESP 2320-D-128-811 Mod instr index.

Stores tools and equipment

8

8.1 Stores to be demanded.

8.1.1 The following modification set is to be demanded quoting this instruction authority for demand.

Item No	DMC	NSN/Part No	Designation	Qty Per eqpt
	7XD	2510-99-148-1296	Input/Output Facility Mod set: comprising:	2
1			Sleeve	(2)
2			Cover, sleeve	(2)
3			Washer, foam	(8)
4			Ring retaining (Soft top only)	(2)
5			Coupling, sleeve assembly	(2)
6			Strap, support	(2)

8.2 Stores or suitable equipment to be obtained locally.

Item No	NSN/Part No	Designation	Qty Per eqpt
7	7510-99-220-1153	Water resistant fabric tape	As reqd

8.3 Special tools and test equipment required.

Item No	NSN/Part No	Designation	Qty Per eqpt
8	F1/3460-99-137-4928	Arbour, hole saw	1
9	F1/3455-99-137-5656	Blade, hole saw	1

Sequence of operations

NOTE

The item numbers of Para 8 are used as references throughout this instruction.

9 Carry out the modification as follows:

WARNING

HEALTH AND SAFETY. WHEN CUTTING HOLES IN THE HOOD, GOGGLES AND MASK MUST BE WORN TO PREVENT INHALATION OF HARMFUL DUST AND TO PROTECT EYES.

Soft top only

Refer to Fig 1

9.1 Place tape, to aid marking out, on the rear of the vehicles in the area where the holes are to be cut.

9.2 Mark out the centres for the holes.

9.3 Mark out two 98 mm (3,86 in.) diameter circles on hood on either side of the flap.

9.4 Using a suitable cutting tool i.e. a sharp knife and a piece of hard board, cut out two holes in the hood.

Refer to Fig 2

9.5 Slide the sleeve (item 1) through the coupling (item 5) folding the end of the sleeve over the coupling as shown in inset.

9.6 Ensure that the stitched edge of the sleeve is aligned with the recess on the coupling.

NOTE

When fitting the coupling ensure that the pivot pin is at the top.

9.7 Fit a foam washer (item 3) to the coupling and slide through hood.

9.8 Fit two foam washers and the retaining ring (items 3 and 4).

9.9 Fit the sleeve cover (item 2) lining up the slots with the tags and applying pressure to the top until it clips into place then repeat at the bottom

9.10 Loop support strap through sleeve cover and over the rear roll bar ensuring that the strap is inboard of the outer radiated hazard strap and tension to suit.

9.11 Cut a piece of 2 in. x 1.5 in wide waterproof tape (item 7) and fit over the lower clip inside the coupling sleeve assembly (item 5) to seal.

Hard top only

Refer to Fig 1

9.12 Place tape on the rear of the vehicle in the area where the holes are to be cut.

9.13 Mark out the centres for the holes

9.14 Drill two 6,0 mm pilot holes through (hard top only).

9.15 Using a suitable cutting tool (items 8 and 9) cut two holes one on either side of the rear door.

9.16 Remove sharp edges and clear up debris.

Refer to Fig 2

9.17 Slide sleeve (item 1) through coupling (item 5) folding the end of the sleeve over the coupling as shown in inset.

9.18 Ensure that the stitched edge of the sleeve is aligned with the recess on the coupling.

NOTE

When fitting the coupling ensure that the pivot pin is at the top.

9.19 Fit a foam washer (item 3) to the coupling and slide through hardtop.

9.20 Fit two foam washers (item 3).

9.21 Finally fit the sleeve cover (item 2) lining up the slots with the tags and applying pressure to the top until it clips into place then repeat at the bottom.

9.22 Loop support strap through sleeve cover and over the rear roll bar ensuring that the strap is inboard of the outer radiated hazard strap and tension to suit.

9.23 Check to ensure the coupling does not rotate, if it does dismantle and add additional foam washer between the hardtop and the cover.

9.24 Cut a piece of 2 in. x 1.5 in wide waterproof tape (refer to item 7) and fit over the lower clip inside the coupling sleeve assembly (item 5) to seal.

Testing after embodiment

10 Nil

EFFECT ON WEIGHT

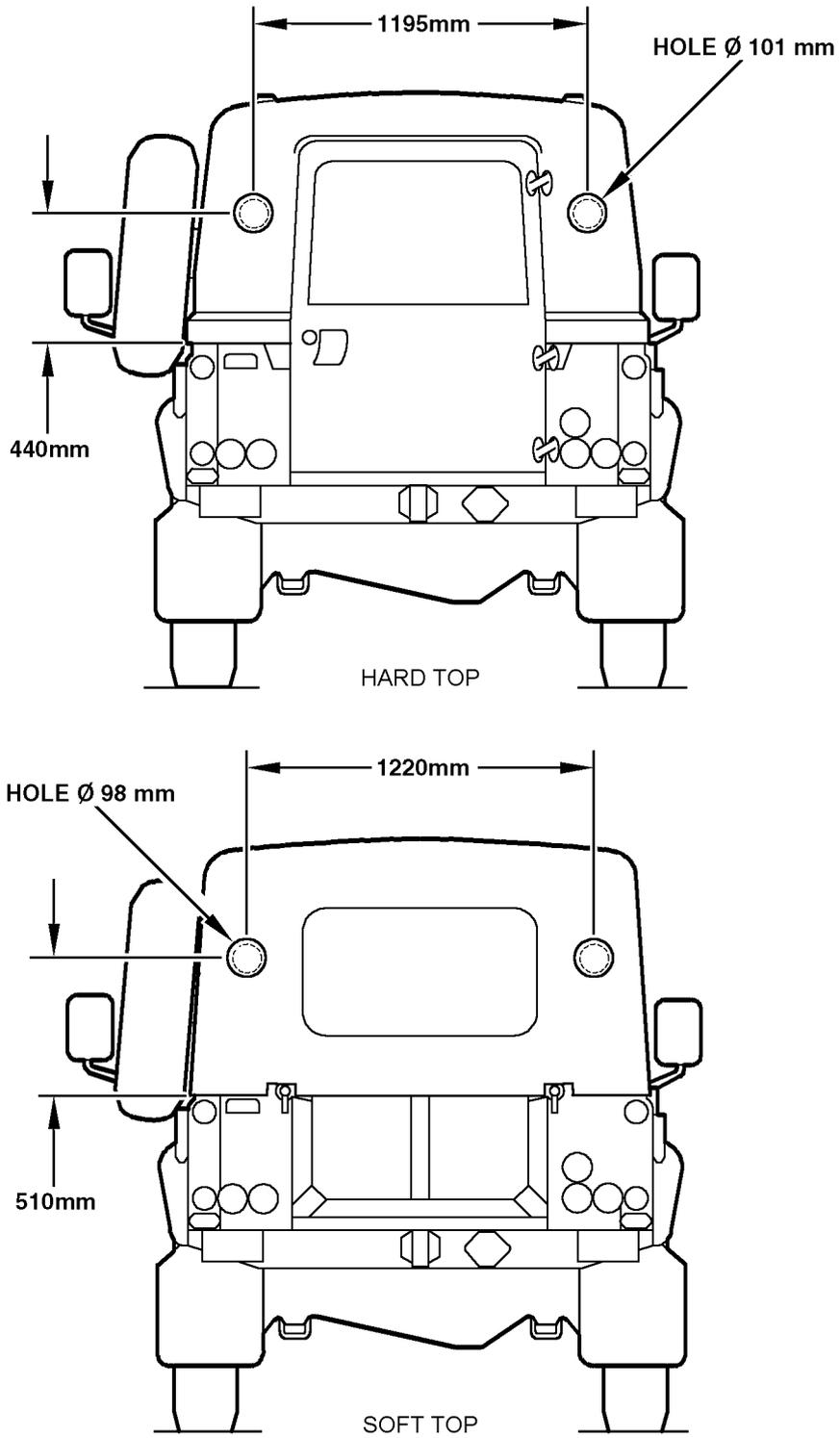
11 Negligible

PUBLICATION AMENDMENTS

NOTE

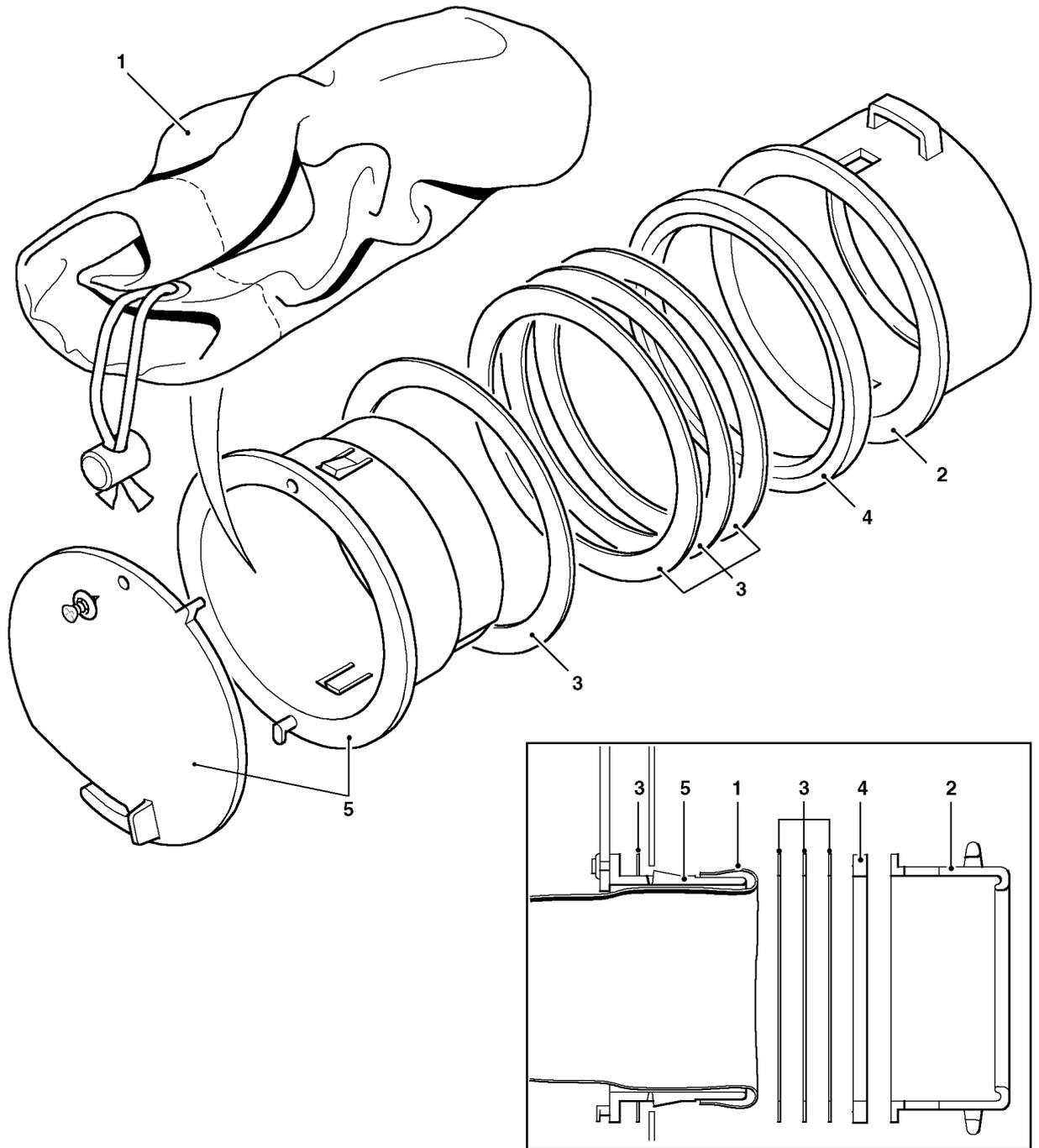
Necessary amendment will be issued separately.

12 Nil



MIL1755

Fig 1 Position of the input/output sleeve holes



MIL1754

- | | |
|--|--|
| <ul style="list-style-type: none"> 1 Sleeve 2 Sleeve cover 3 Neoprene washers | <ul style="list-style-type: none"> 4 Retaining ring (Soft top only) 5 Sleeve coupling 6 Support strap (Not shown) |
|--|--|

Fig 2 Input/output sock assembly

**TRUCK UTILITY LIGHT (TUL) HS TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS**

MODIFICATION INSTRUCTION No 9

SUBJECT: Fitting of stretcher retention straps. (Approval No LSTP 12-6666)

CANCELLATION

INTRODUCTION

1 Modification Instruction No 9 dated Dec 99 is hereby cancelled. The fitting of the stretcher retention straps is now no longer required.

ACTION

2 File this Page 1/2 in place of Modification Instr No 9 dated Dec 99, all pages of which are to be destroyed.

TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS

MODIFICATION INSTRUCTION No 10
(Completely Revised)

Sponsor:

DGES(A) ES52
File ref: D/DGES(A) 548/3/4

Publication Agency:

ATSA Chertsey
Project No:ES52c/4356
File ref: DE/CH/4118/LVG

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Winterised/waterproofed radio bag

(Approval No LSTP 12-6667)

INTRODUCTION

1 This instruction details the fitting of the winterised/waterproofed protective radio bag.

1.1 Limitations on use of equipment. Nil

APPLICABILITY

2 Truck Utility Light (TUL) HS and Truck Utility Medium (TUM) HS Fitted For Radio winterised/waterproofed vehicles with the following asset codes: NB 4226 3100, TB 4226 3100, NB 5021 3100, TB 5021 3100, NB 4226 8100, NB 4229 3100 and NB 5021 8100.

2.1 Unmodified stock, held at all levels of technical storage.

REASON FOR MODIFICATION

3 Code 2 - to improve operational performance.

PRIORITY

4 Army: Routine
RAF: Class 3

ESTIMATED TIME REQUIRED

5 Embodiment: 4 man-hours.

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

- ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.
- RAF - When required

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action: NA

Action required by

7

7.1 Units and establishments holding equipment.

7.1.1 Examine vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary Units with level 2 REME Support demand the stores required.

7.1.3 ARMY - On receipt of stores, request REME to modify equipment.

7.1.4 ARMY - Record the modification subject and AESP number in equipment documents.

7.1.5 RAF - Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADP MTMS job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

7.2 Army units authorised to carry out levels 2,3 and 4 maintenance and RAF units.

7.2.1 ARMY - When requested by users or during overhaul of equipments on charge without REME level 2 Support, obtain the items listed in Para 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.2.3 Complete AF G1084A when reporting completion of the modification to FORWARD (RAF) using the following code:

RAF: MODIFICATION CODE AFN 159

NOTE

RAF units operating STAMA are also to complete ADP MTMS Job Certification Sheet and to follow the procedures laid down in 100C-08A.

7.3 All recipients of this instruction. Add particulars to AESP 2320-D-128-811 Mod Instr index.

Stores tools and equipment

8

8.1 Stores to be demanded.

8.1.1 The following items are to be demanded quoting this instruction authority for demand.

Item No	DMC	NSN/Part No	Designation	Qty Per eqpt
	7XD	2590-99-245-1086	Mod set: comprising:	1
1		RG2474003A	Left hand frame	(1)
2		RG2474002A	Right hand frame	(1)
3		RG2474004A	Upper front strut	(1)
4		RG2474005A	Upper rear strut	(1)
5		RG2474006A	Lower front strut	(1)
6		RG2474007A	Centre support	(1)
7		RG2474009A	Left hand bracket	(1)
8		RG2474008A	Right hand bracket	(1)
9		RG2474001A	Radio rack	(2)
10	6WPG	2540-99-9217014	Radio bag	1
11		34166-106	Clamp hood stay	2
12		IPU100160	Support bracket	2
13			Screw , hex hd, M6 x 16	2
14			Nutsert, M6	2
15			Washer, spring, M6	2
16			Nut, M6	2

8.2 Stores or suitable equivalent to be obtained locally.

17	G1 / 5305-99-122-5254	Bolt, hex hd, M8 x 40 long	8
18	NH108051	Nut, M8	8
19	7RU / 5310-99-250-8186	Washer, flat, M8	16
20	G1 / 5310-99-137-9231	Washer, spring, M8	8
21	G1 / 5305-99-122-5360	Bolt, hex hd, M6 x 16 long	20
22	G1 / 5310-99-122-6474	Washer, flat, M6	14
23	G1 / 5310-99-208-6458	Washer, spring, M6	20
24	G1 / 5319-99-948-0345	Washer, flat, M6 (oversize 25 mm OD)	6
25		Screw, hex hd, M5 x 40	2
26		Washer, plain, M5	2
27		Nylock nut M5	2
28		Screw, cheese hd, M4 x 20	4
29		Washer, plain, M4	4
30		Nylock nut M4	4

NOTE

Items 11-16 above were originally supplied loose when Modification Instruction 16 was incorporated onto the vehicle. If no longer available they should be demanded.

Sequence of operations

NOTES

- (1) The item numbers of Para 8 are used as references throughout this instruction.
- (2) Assistance will be required to locate and fit some of the items in this kit.

9 Carry out the modification as follows

Refer to Fig 1.

- 9.1 Disconnect battery bonding leads - five off.
- 9.2 Remove battery cover.
- 9.3 Open trays and remove radio batteries and retain.
- 9.4 Remove radio battery trays and retain.
- 9.5 Remove existing radio rack and discard.
- 9.6 Remove 12 off - M5 screws, nuts, plain and spring washers securing wooden radio tabletop to frame. Retain top and fixings.

NOTE

The four screws, which hold the table and frame to the battery box brackets, are longer.

- 9.7 Remove six off - M6 screws, nuts, plain and spring washers securing metal frame to radio table. Retain frame and fixings.

NOTE

The following step is to be completed to allow access during the fitting of the bag to the 6 fastenings which secure the table frame to the battery box.

- 9.8 Drill 6 new pilot holes in the wooden radio tabletop using existing holes in metal frame as guides. Open the holes up to 18 mm diameter. (refer to Fig 5).
- 9.9 Locate radio bag (Item 10) on tabletop.

NOTE

The longitudinal centre line of the reinforced strips on the base of the bag must line up with the fixing holes on the radio table and the holes in the battery box (refer to Fig 6).

- 9.10 Replace metal tabletop frame inside bag and position. Do not fix at this stage.
- 9.11 Assemble radio bag frame inside bag.
 - 9.11.1 Insert LH frame end section (Item 1) and RH frame end section (Item 2) in bag.
 - 9.11.2 Locate lower front strut (Item 5), upper front strut (Item 3) and upper rear strut (Item 4) on end frame stubs and secure with M6 bolts, flat and spring washers (Items 21, 22 and 23).
 - 9.11.3 Locate centre support (Item 6) and secure at the upper and lower fixing points on the front struts using M6 bolts, flat and spring washers (Items 21, 22 and 23).

9.11.4 Locate both radio racks (Item 9) and loosely fasten at the central upright support (Item 6) three positions each rack using M6 bolts, oversize flat washer and spring washers (Items 21, 24 and 23).

NOTE

Adjust bag for optimum fit ensuring all zips fasten, push bag back so bag sits right up against bulkhead/roll cage.

9.12 Line up fixing holes on roll cage brackets with end frame/radio rack; spike through from inside bag, four places on each roll cage bracket. Loosely fasten using M8 bolts, nuts, flat and spring washers (Items 17, 18, 19 and 20).

NOTE

Prior to refitting the radio tabletop and frame refer to AESP 5800-C-146-421, Chapter 2.54 for details of drilling and fitting the Clansman mounting kit.

9.13 Refit the wooden tabletop into the table frame and secure with 8 fasteners (refer to Fig 5). Ensure the bolts are fitted from underneath with the nuts on the top to prevent the bolts piercing the bag.

NOTE

The four longer fasteners are used at the cantilever table support brackets fixing point.

9.14 Position the tabletop assembly over table fixing points and spike through bag in ten places.

NOTE

When spiking use a 6 mm maximum diameter spike to ensure the bag seals around the fixing bolts.

9.15 Using the newly drilled holes in the tabletop, refit the six fasteners (refer to Fig 5) securing the tabletop frame to radio box through the radio bag.

9.16 Locate the angle brackets (items 7 and 8), fix to end frame and tabletop frame using M6 bolts, flat and spring washers (items 21, 22 and 23) and the four longer M5 fasteners through the tabletop and bag.

9.17 Make final check that the bag zips up correctly.

9.18 Secure all fixings.

9.19 Replace battery drawers, fit batteries, fit cover and reconnect the battery bonding leads.

NOTE

Ensure that all earth and battery leads are coat using suitable silicon grease as at Fig 2.

9.20 Relocate relay box assembly.

- 9.20.1 Remove the screw and washer securing the 'P' clip to the bulkhead next to the relay box.
- 9.20.2 Remove the relay box cover and remove the four screws, washers and spacers securing the relay box to the bulkhead.
- 9.20.3 Slacken cable gland on relay box to allow spare cable to be withdrawn from inside the box.
- 9.20.4 Reposition the relay box on the bulkhead as shown in Fig 3 and drill two 7mm holes through the bulkhead using the support brackets as a guide, open up to 10mm.
- 9.20.5 Deburr and fit nutserts (item 14) using a suitable tool.
- 9.20.6 Secure the relay box to the bulkhead using the two support brackets and two screws (item 13) and spring washers (item 15).
- 9.20.7 Drill two 7mm holes through the bulkhead using the lower fixing holes as a guide.
- 9.20.8 Remove the two screws and spring washers securing the relay box to the bulkhead.
- 9.20.9 Open up lower fixing holes on the bulkhead to 10mm, deburr and fit nutserts (item 14) using a suitable tool.
- 9.20.10 Re-secure the relay box to the bulkhead using the two support brackets and two screws (item 13) and spring washers (item 15).
- 9.20.11 Secure the lower fixings to the bulkhead and refit the cover.
- 9.20.12 Tighten cable gland on relay box.
- 9.20.13 Drill a hole through the bulkhead between the gun clips as shown in Fig 3 open up to 10mm and fit nutserts (item 14) using a suitable tool.
- 9.20.14 Secure the 'P' clip to the bulkhead with washer and screw. Secure cables through 'P' clip.

9.21 Relocate battery isolation switch assembly.

- 9.21.1 Remove the cover from the isolation switch.
- 9.21.2 Remove the four screws, nylock nuts and washers securing the battery isolation switch to the mounting bracket.
- 9.21.3 Remove the nuts and washers from the two fixings securing the isolation switch mounting bracket to the roll protect hoop and tie bars. Remove mounting bracket.

NOTE

Note the position and orientation of the spacers securing the radiated hazard curtain to the tie bar bracket.

9.21.4 Refit nuts, washers and spacers securing roll protect hoop to tie bars.

9.21.5 Locate the four predrilled holes in the forward hood stay as shown in Fig 4.

9.21.6 Carefully cut the Radiated Hazard Curtain in four positions 'A' in Fig 4 .

9.21.7 Feed the clamps (item 11) through the Radiated Hazard Curtain and over the top of the forward hood stay and back through the curtain. Using the four screws (item 28), washers (item 29) and nylock nuts (item 30), secure the switch box to the forward hood stay.

9.21.8 Using the predrilled holes secure the clamps to the hood stay using the two screws (item 25), washer (item 26) and nylock nut (item 27).

9.21.9 Refit the cover to the isolation switch.

9.21.10 Secure the wiring harness to the forward hood stay with 3 releasable cable ties.

TESTING AFTER EMBODIMENT

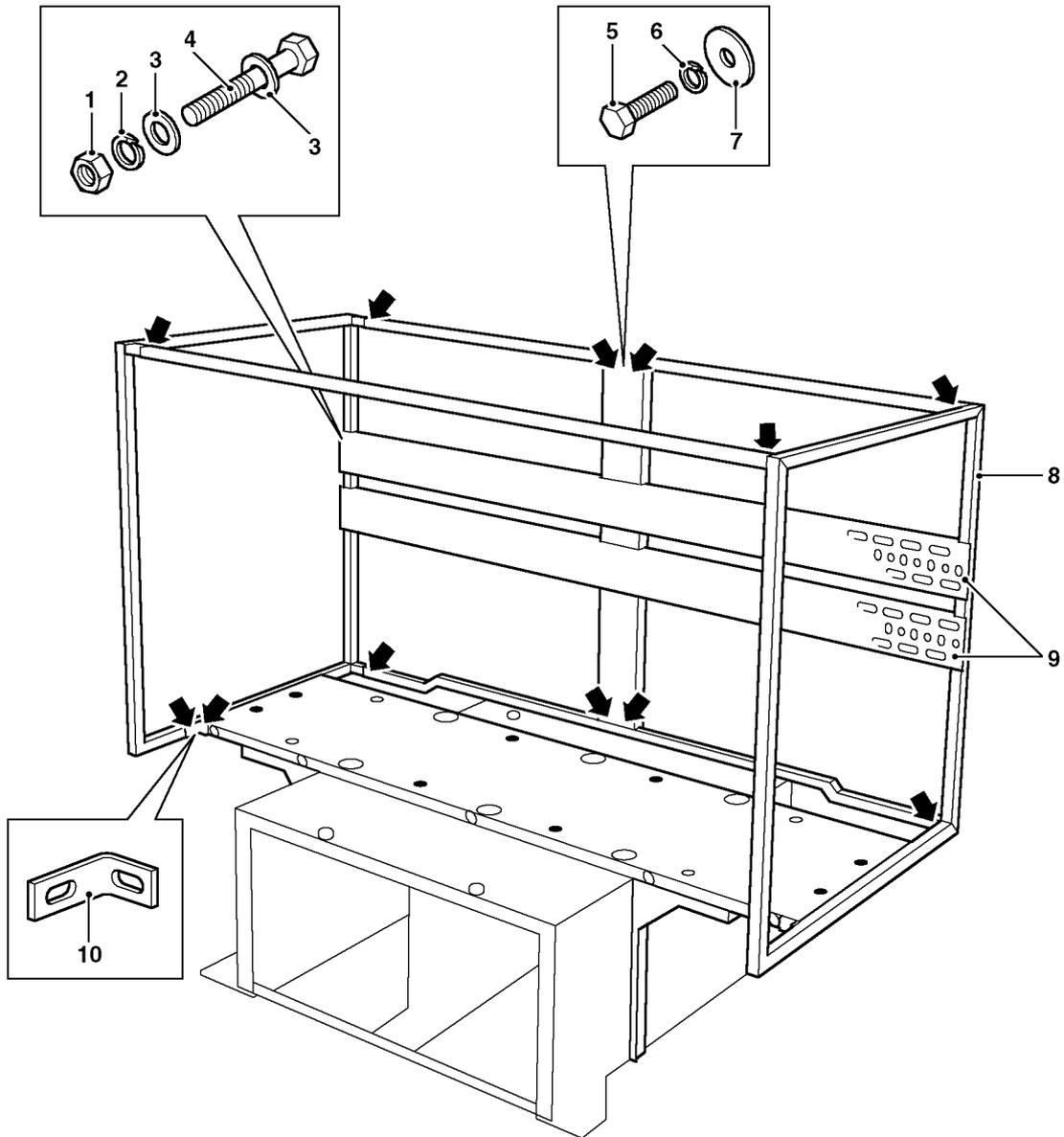
10 Nil.

EFFECT ON WEIGHT

11 Nil.

PUBLICATION AMENDMENTS

12 Nil.



MIL0907

- | | | | |
|---|---------------|----|----------------------|
| 1 | Nut | 6 | Spring washer |
| 2 | Spring washer | 7 | Flat washer |
| 3 | Flat washer | 8 | Radio frame assembly |
| 4 | Bolt | 9 | Radio racking |
| 5 | Bolt | 10 | Bracket |

Fig 1 Radio bag frame

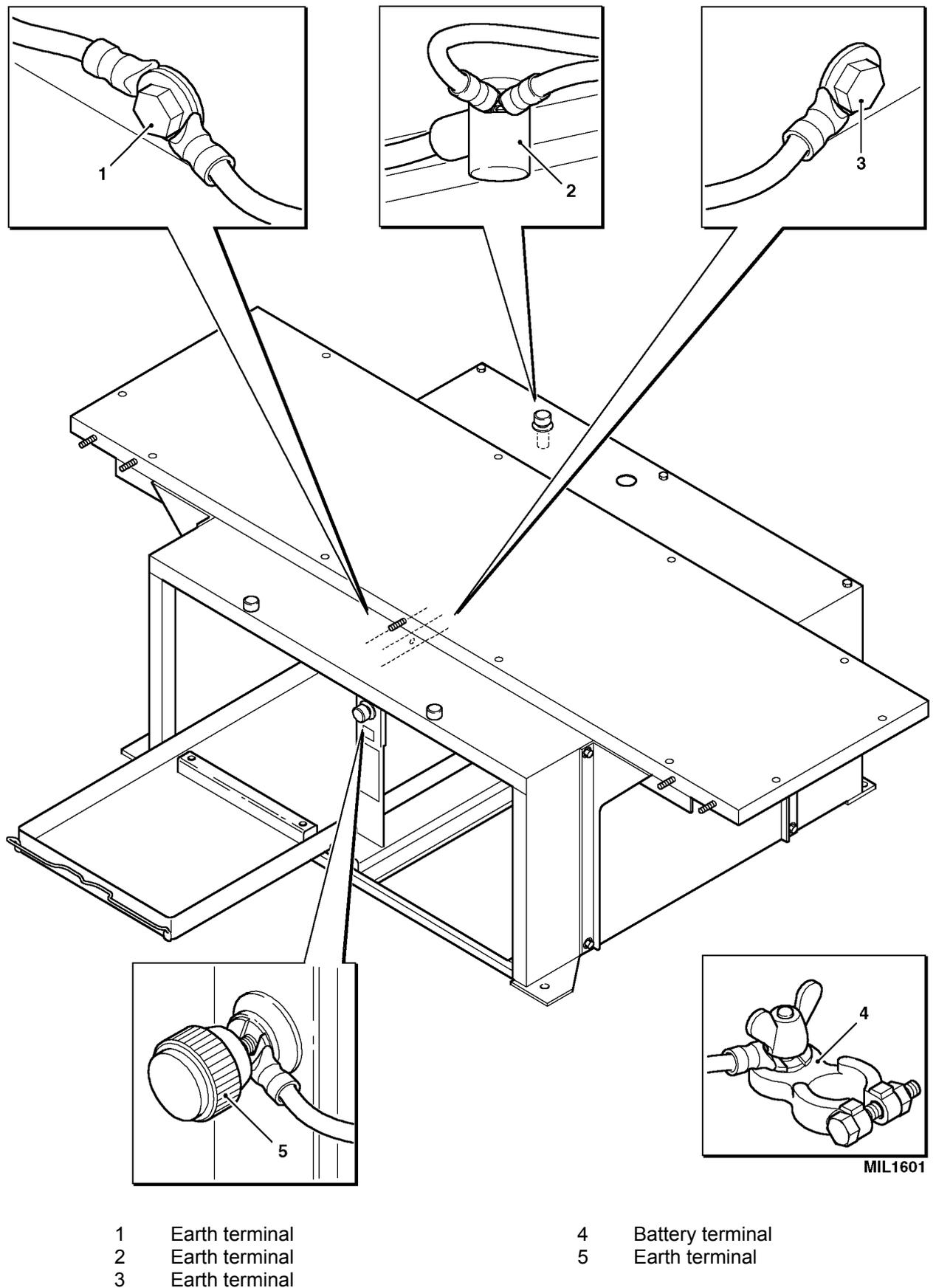


Fig 2 Earth connections

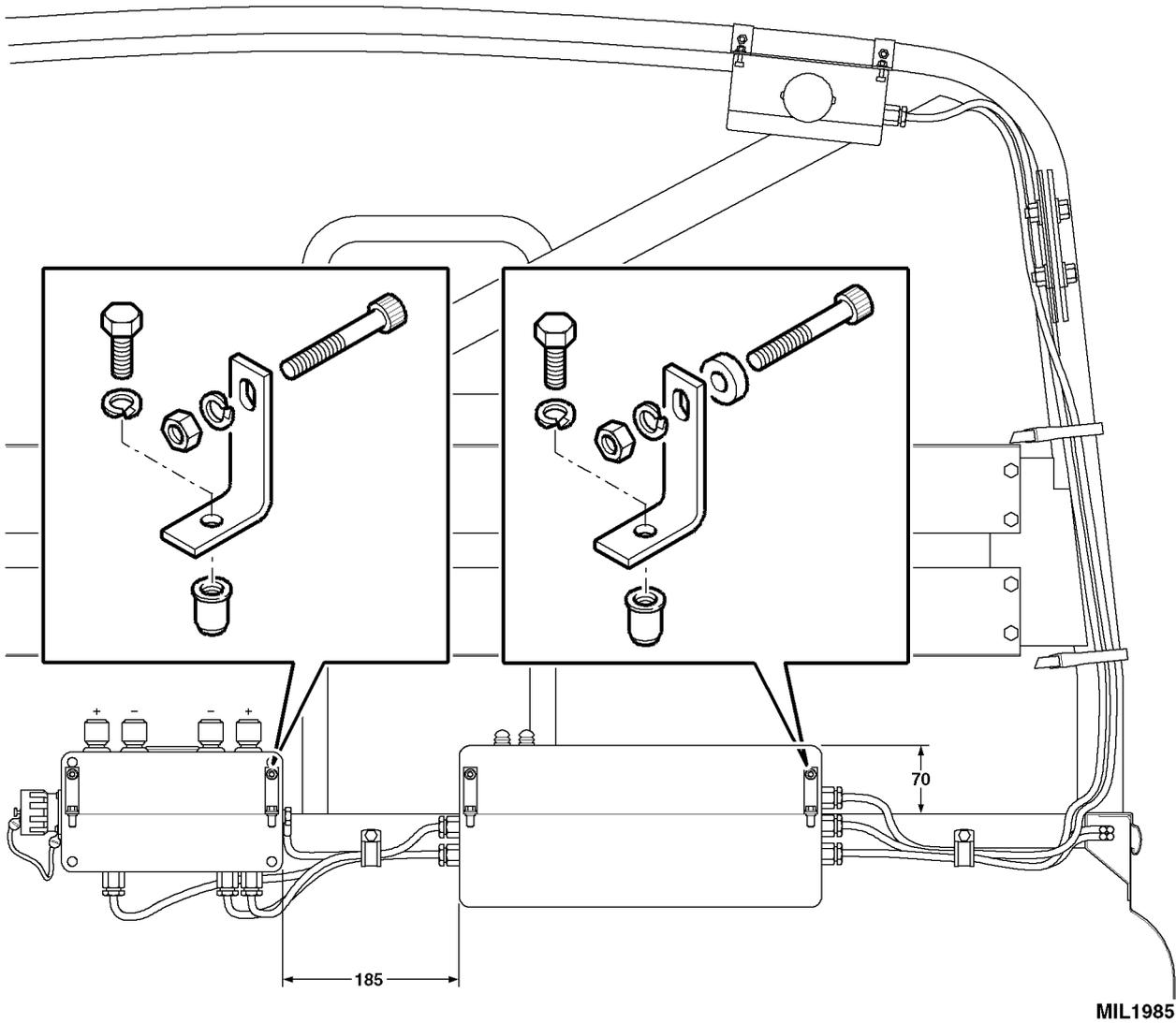
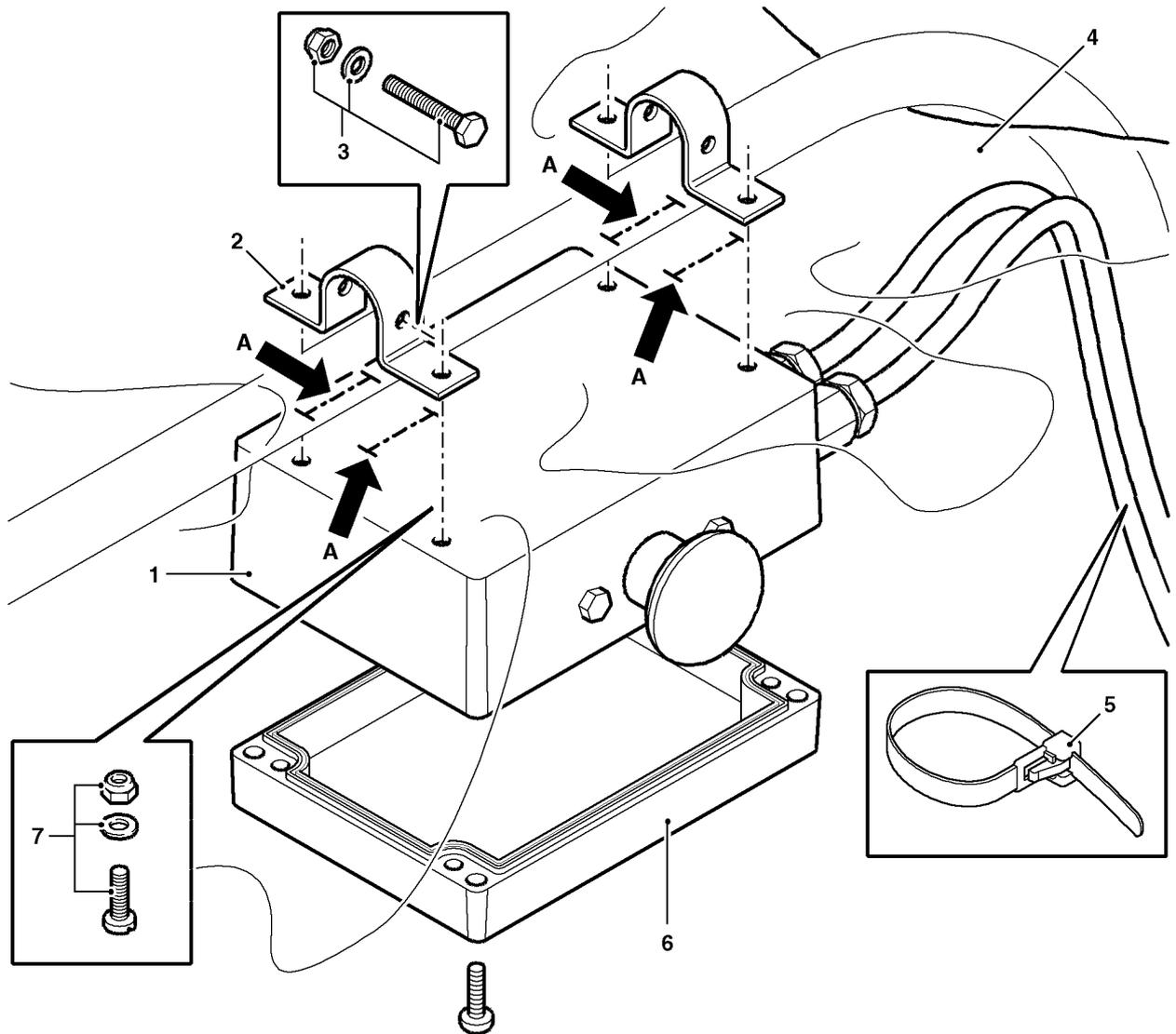


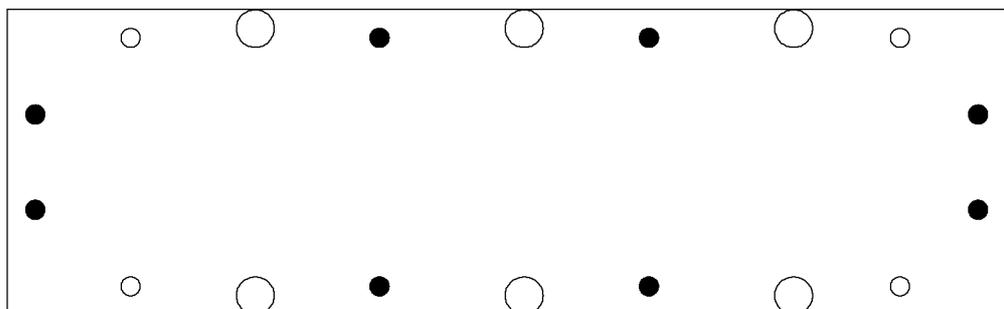
Fig 3 Fitting the relay box and terminal box assemblies



MIL1991

- | | | | |
|---|-------------------------|---|--------------------------|
| 1 | Isolation switch | 5 | Releasable cable ties |
| 2 | Clamp hood stay | 6 | Cover |
| 3 | Hood stay fixings | 7 | Isolation switch fixings |
| 4 | Radiated hazard curtain | | |

Fig 4 Fitting the battery box isolation switch assembly



MIL2043

Fig 5 Location of bolts

Key to Fig 5

- M5 bolts fixing Radio Table to Table frame. These bolts do not go through the bag and must be fixed before Radio Table Assembly is placed in bag. The bolts are inserted from underneath with the nuts on top.
- M5 bolts fixing the Radio Table to the Table Frame and the Battery Box Extension legs
- M6 bolts fixing the table to the battery box. These holes in the Radio Table (wood only) need to be opened out to 18 mm to allow access to the fixing holes in the table frame.

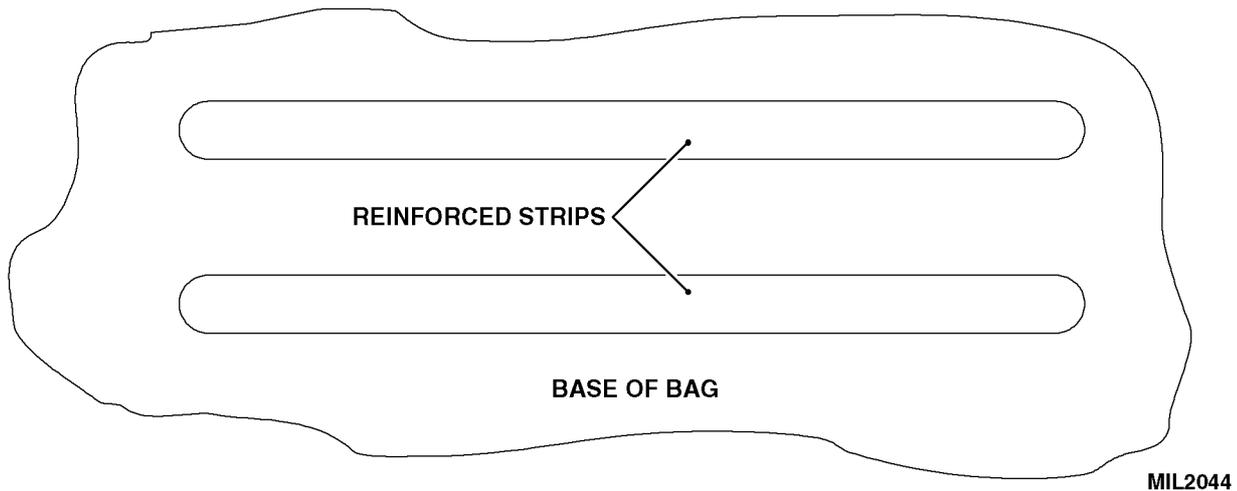


Fig 6 Reinforcement strips

TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION No 11

Sponsor:

DGES(A) ES52
File ref: D/DGES(A) 548/3/4

Publication Agency:

ATSA Chertsey
Project No:ES52c/4356
File ref: DE/CH/4118A/LVG

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Fitting of Clansman TUAAM mounting and wing reinforcement.
(Approval No LSTP 12-6668)

INTRODUCTION

1 This instruction details the fitting of the Clansman mounting and wing reinforcement.

1.1 Limitations on use of equipment. Nil

APPLICABILITY

2 (TUM) Ambulance HS.

2.1 Fitted to subject equipment held by user units.

2.2 Unmodified stock, held at all levels of technical storage.

REASON FOR MODIFICATION

3 Code 2 - to improve operational performance

PRIORITY

4 Army: Routine
RAF: Class 3

ESTIMATED TIME REQUIRED

5 Embodiment: 6 man-hours

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

ARMY	-	Units authorised to carry out levels 2, 3 and 4 maintenance.
RAF	-	Units when required.

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action. NA

Action required by

7

7.1 Units and establishments holding equipment.

7.1.1 Examine vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary Units with level 2 REME Support demand the stores required.

7.1.3 ARMY - On receipt of stores, request REME to modify equipment.

7.1.4 ARMY - Record the modification subject and AESP number in equipment documents.

7.1.5 RAF - Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADP MTMS job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

7.2 Army units authorised to carry out levels 2,3 and 4 maintenance and RAF units.

7.2.1 ARMY - When requested by users or during overhaul of equipments on charge without REME level 2 Support, obtain the items listed in Para 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.2.3 Complete AF G1084A when reporting completion of the modification to FORWARD (RAF) using the following code:

RAF: MODIFICATION CODE 156

NOTE

RAF units operating STAMA are also to complete ADP MTMS Job Certification Sheet and to follow the procedures laid down in 100C-08A.

7.3 All recipients of this instruction. Add particulars to AESP 2320-D-128-811 Mod instr index.

Stores tools and equipment

8

8.1 Stores to be demanded.

8.1.1 The following items are to be demanded quoting this instruction as authority for demand.

Item No	DMC	NSN/Part No	Designation	Qty Per eqpt
		N/P	Mod set: Comprising:	1
1	7XD	5340-99-735-0879	Bracket, mounting TUAAM - RH	(1)
2	7XD	5340-99-950-9243	Bracket, mounting TUAAM - LH	(1)
3	7XD	5340-99-851-1965	Catch, male	(2)
4	7XD	5340-99-887-3954	Catch, female	(2)
5	7RU	5325-99-535-4419	Clip double	(2)
6	6MT1	5325-99-808-3203	Grommet	(4)
7	7XD	2590-99-905-5048	Reinforcement A.T.U. RH	(1)
8	7RU	2590-99-244-6185	Reinforcement A.T.U. LH	(1)
9	7XD	2540-99-835-9260	Stowage box bulkhead	(2)
10	G1	5305-99-122-5366	Screw M8x20	(6)
11	G1	5310-99-137-9231	Spring washer M8	(6)
12	G1	5310-99-138-7965	Washer M8	(11)
13	G1	5310-99-122-5296	Nut M8	(6)
14	G1	5320-99-376-2529	Rivet	(14)
15	G1	5320-99-970-3518	Rivet	(8)
16	7RU	5340-99-301-5892	Spring clip	(5)
17	7XD	5310-99-720-4866	Nut plate assy	(2)
18	7RU	5340-99-562-3445	Support angle front A.T.U.	(2)
19	7XD	5340-99-832-3408	Gusset RH	(1)
20	7XD	5340-99-702-1810	Gusset LH	(1)
21	7RU	2540-99-179-9514	Support stay	(2)
22	7RU	2540-99-198-8651	Bracket - support stay	(2)
23	G1	5305-99-122-5360	Screw M6x16	(4)
24	G1	5305-99-122-5359	Screw M6x12	(4)
25	G1	5310-99-122-6474	Washer M6	(12)
26	G1	5310-99-208-6458	Spring washer M6	(8)
27	G1	5310-99-122-5295	Nut M6	(6)
28	7RU	2590-99-829-9881	Control lead	(2)
29	7RU	2590-99-829-9882	Aerial lead	(2)
30	7RU	5320-99-740-0798	Rivet	(As reqd)

Sequence of operations

NOTES

- (1) The item numbers of para 8 are used as references throughout this instruction.
- (2) Prior to fitting the reinforcement plate (item 7) and the ATU mounting bracket (item 1), spot face around all fixing holes (including vehicle mud-wings) and apply a light coating of grease (XG 279) to all mating faces.
- (3) The following procedure covers the right-hand side of the vehicle; procedure for left side is identical.

9 Carry out the modification as follows:

9.1 Dismantling.

9.1.1 Remove flexible wing extension by extracting 16 plastic rivets. Remove by pressing the rivet centre pin out through the rivet head, to enable the rivets to be re-used. This may not be possible at all locations; demand new rivets (item 30) where necessary.

9.1.2 Remove wing top vent grill (seven screws) and retain.

9.2 Embodiment.

Refer to Fig 1.

9.2.1 Bend vertical flange on galvanised inner wing leading edge forward until flat over a 25 mm length at the top. This is to clear the under wing reinforcement plate.

9.2.2 Cut a section from the reinforcement plate (item 7) to clear a vertical 'rib' on the galvanised inner wing.

9.2.3 Mark centres of under wing reinforcement plate/aerial mounting holes. Drill five off 10 mm dia holes.

9.2.4 Fit reinforcement plate to existing inner wing flange screws and nuts (two off), discarding the original plain washers. The upper holes in the plate must align with those drilled at Para 9.2.3.

9.2.5 Drill two 7 mm dia holes through the wing top inner flange to coincide with existing holes in the reinforcement plate. Secure plate to flange with fixings (items 23, 26 and 27) and four off plain washers (item 25).

9.2.6 Locate the elongated hole in the reinforcing plate (item 7). Cut two 25 mm dia holes in the vehicle wing to coincide with the forward and rear end of the elongated hole in the reinforcement plate.

9.2.7 Loosely fit aerial mounting adapter assembly (item 1) and angle bracket (item 18) using five fixings (items 10, 11 and 13) and 10 plain washers (item 12). Align gusset plate (item 19(RH)/20(LH)) with angle bracket and angled face of vertical inner wing stiffener.

9.2.8 Mark hole centres for gusset plate mountings and drill through 7 mm dia. Using nutplate (item 17) inserted through existing hole in wing stiffener, secure gusset using two fixings (items 24, 25 & 26).

9.2.9 Secure gusset plate to angle bracket with two fixings (items 24, 25, 26 & 27). Tighten all angle bracket and gusset plate fixings.

9.2.10 Removes rear innermost screw from aerial mounting adapter and attach to its underside the support stay (item 21). Loosely attach the support stay bracket (item 22) to the lower end of the support stay. Position the bracket on top of the wheel arch and mark centres of two holes through bracket. Drill down through the wheel arch using a small pilot drill.

9.2.11 From the underside, increase the pilot hole to 7 mm diameter. Loosely fix support stay bracket to wheel arch with two fixings (items 23, 26 and 27) and four off plain washers (item 25). Attach support stay to bracket using fixings (items 10 to 13). Tighten all support stay fixings and rearmost aerial mounting adapter fixings.

9.3 Control and aerial lead routing and internal stowage.

Refer to Fig 2.

NOTES

- (1) Refer to User Handbook AC 61590 Supp 2 and 4; parts referred to are listed in U/H).
- (2) It may be necessary to ease the clearance between outrigger and cab floor in order to pass the control/aerial lead ends through. The cable conduits must be a loose fit in this area.
- (3) To drill cable grommet and rivet holes it will be necessary to remove, and subsequently refit, the cab seats.

9.3.1 Feed control/aerial lead assemblies (items 28 & 29) up through holes in front wing top and grommets.

NOTE

Leave a 457 mm length of cable exposed within the stowage box.

9.3.2 Route leads rearwards following wheel arch curve down to first chassis outrigger. Pass cable assemblies over outrigger and feed all free cable through. Secure to two points (item 14) around wheel arch and at base of body front bulkhead.

9.3.3 Run cable assemblies inside sill channel section under cab floor and retain using cable ties inserted through existing holes in the channel.

9.3.4 Mark location of 25 mm dia holes for cable grommet on cargo/cab bulkhead. Cut 25 mm holes and fit grommets. Using rivet (item 15) fix cable stowage box (item 9) to bulkhead (refer to Fig 2 for details). Route cable assemblies through into cab from body stowage locker securing cable as necessary.

9.4 Reassembly.

9.4.1 Refit vent grill (refer to Para 9.1.2).

9.4.2 Refit flexible wing extension (refer to Para 9.1.1)

Testing after embodiment

10 Refer to User Handbook AC 61590 Supp 2 and 4.

EFFECT ON WEIGHT

11 Negligible

PUBLICATION AMENDMENTS

NOTE

Necessary amendment(s) will be issued separately.

12 Nil

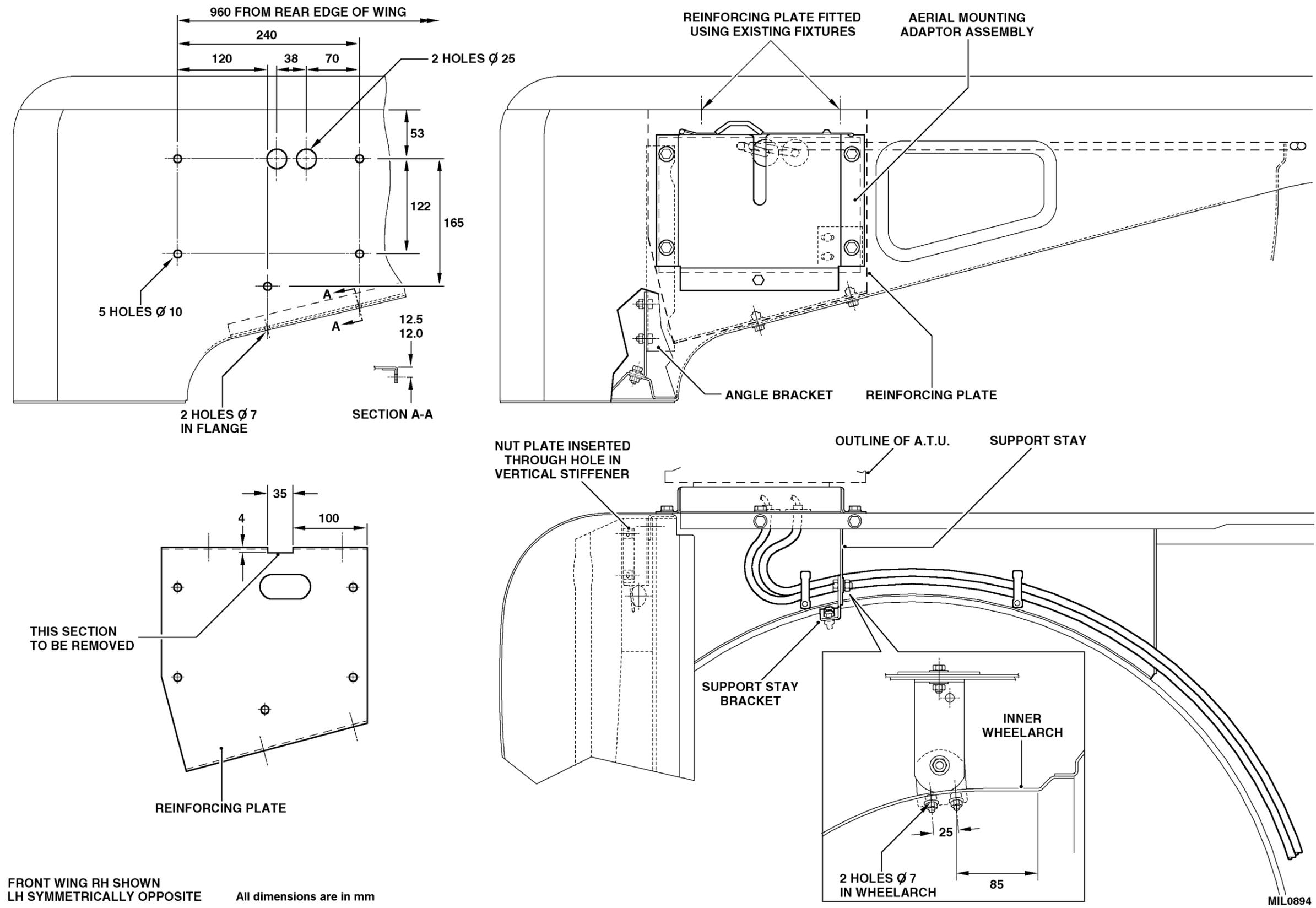
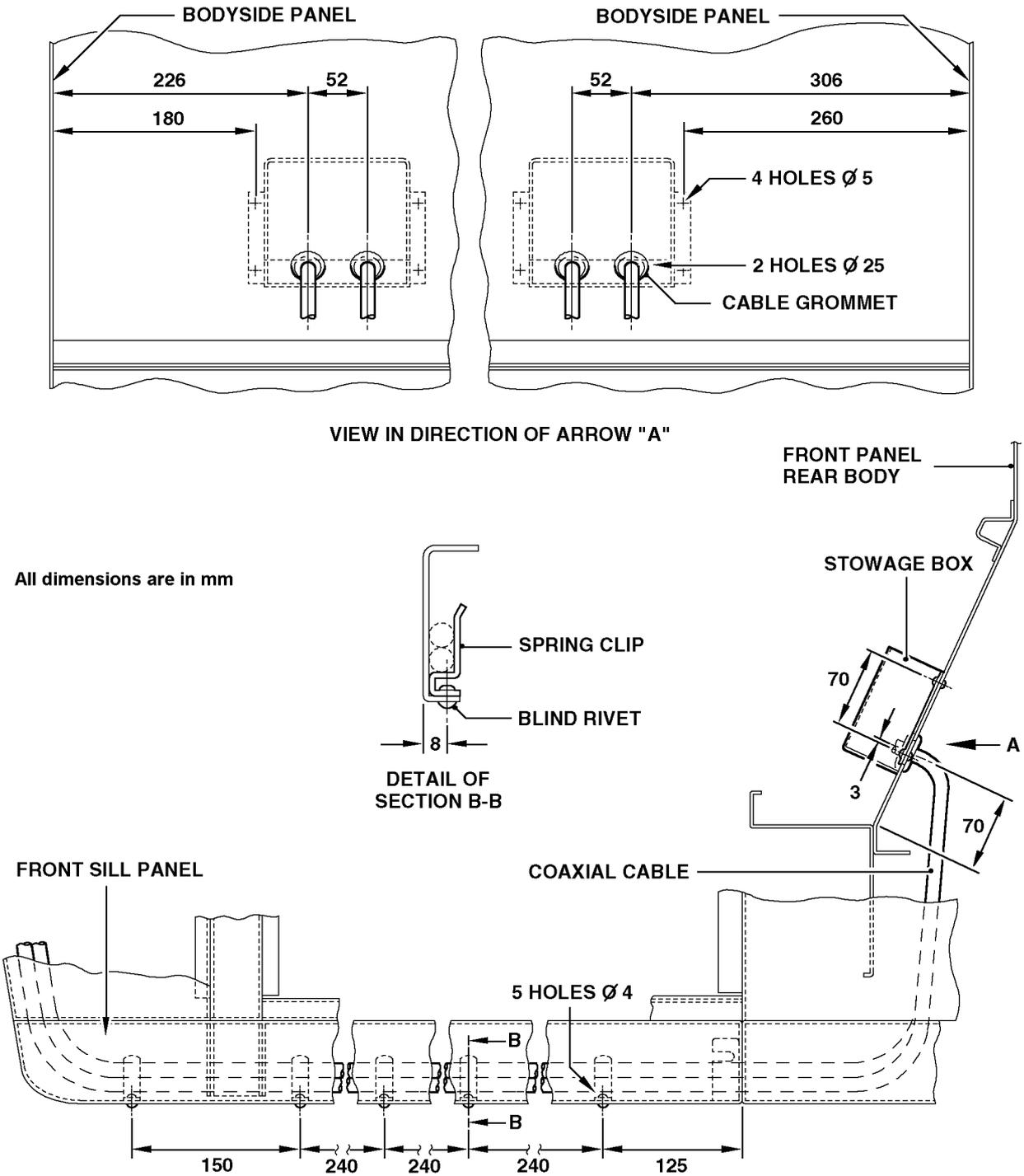


Fig 1 Fitting details of wing reinforcement/aerial mounting and stowage



MIL0895

Fig 2 Cable stowage in body

**TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION No 12**

Sponsor:

CSV(Sp) IPT

Publication Agency:

Defence Logistics Organisation
Project No:LLVUty-02

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Fitting Radio Frequency (RF) Radiated Hazard (RADHAZ) Protection Kit.
(Approval No LSTP 12-6669)

INTRODUCTION

1 This instruction details the fitting of the RF RADHAZ Protection Kit.

1.1 Limitations on use of equipment. Nil

APPLICABILITY

2 Truck Utility Light (TUL) HS FFR and Truck Utility Medium (TUM) HS FFR vehicles only

2.1 Fitted to equipment held by user units.

2.2 Unmodified stock, held at all levels of technical storage.

REASON FOR MODIFICATION

3 Code 1 - to improve safety

PRIORITY

4 Army: Routine

RAF: Class 3

ESTIMATED TIME REQUIRED

5 Embodiment: 2 man-hours

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.

RAF - Units not later than the routine maintenance and Vehicles depots before issue of vehicle.

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action: NA

Action required by

7

7.1 Units and establishments holding equipment.

7.1.1 Examine vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary Units with level 2 REME Support demand the stores required.

7.1.3 ARMY - On receipt of stores, request REME to modify equipment.

7.1.4 ARMY - Record the modification subject and AESP number in equipment documents.

7.1.5 RAF - Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADP MTMS job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

7.2 Army units authorised to carry out levels 2,3 and 4 maintenance and RAF units.

7.2.1 ARMY - When requested by users or during overhaul of equipments on charge without REME level 2 Support, obtain the items listed in Para 8 and carry out this modification.

7.2.2 RAF – On receipt of stores, embody modification..

7.2.3 Record completion details of modification against appropriate entry in equipment documents.

7.2.4 Complete AF G1084A when reporting completion of the modification to FORWARD (RAF) using the following code:

RAF: MODIFICATION CODE AFN 161

NOTE

RAF units operating STAMA are also to complete ADP MTMS Job Certification Sheet and to follow the procedures laid down in 100C-08A.

7.3 All recipients of this instruction. Add particulars to AESP 2320-D-128-811 Mod instr index.

Stores tools and equipment

8

8.1 Stores to be demanded.

8.1.1 The following modification set is to be demanded quoting this instruction as authority for demand.

Item No	DMC	NSN/Part No	Designation	Qty Per eqpt
	7XD	2510-99-512-1276	TUL (HS) Radiated Hazard Mod set: comprising:	1
1	7XD	2510-99-593-1742	Curtain, front	(1)
2	7XD	2510-99-976-6351	Curtain, rear	(1)
3	7XD	2510-99-132-3065	Eyelet, plastic	(2)
4	7XD	2510-99-212-2005	Spacer	(10)
5		WF115	Nut M10	(8)
6		WF 123	Rivets	(12)
7		F8671	Retaining strap, header	(4)
8		STC4039	Velcro, strip door upper and rear	(2,5 M)
	7XD	2510-99-182-2566	TUM (HS) Radiated Hazard Mod set: comprising:	1
9	7XD	2510-99-593-1742	Curtain, front	(1)
10	7XD	2510-99-705-6073	Curtain, intermediate	(1)
11	7XD	2510-99-973-7009	Curtain, rear	(1)
12	7XD	2510-99-132-3065	Eyelet, plastic	(2)
13	7XD	2510-99-212-2005	Spacer	(22)
14		WF115	Nut M10	(16)
15		WF123	Rivets	(12)
16		F8671	Retaining strap, header	(4)
17		STC4039	Velcro, strip door upper and rear	(2,5 M)

8.2 Special tools and test equipment required.

Item No	NSN/Part No	Designation	Qty Per eqpt
18	Z4/6625-99-786-5771	Dytecna DT109	

Sequence of operations

NOTE

The item numbers of Para 8 are used as references throughout this instruction.

9 Carry out the modification as follows:

NOTES

- (1) Para 9.1 to Para 9.24 refers to TUL (HS) FFR vehicles.
- (2) Para 9.25 to Para 9.47 refers to TUM (HS) FFR vehicles.

(3) When fitting the kit to the soft top vehicles, it will be necessary to cut away sufficient of the Velcro strips holding the canopy to the roll cage hoops to allow the support straps to be passed through as described in the following instructions.

(4) Ensure that all bonding points are covered with petroleum jelly after assembly.

Fitting the TUL (HS) FFR curtains

Refer to Fig 1

9.1 Remove the two rear radio operator's seats and seat retention rails, (one from each side of the vehicle).

9.2 Rear Curtain. Remove the four nyloc nuts and washers retaining the cantrail tie bar to the roll over bar hoops (two each side) and discard.

9.3 Ensure that the curtain (item2) is fitted up with the long straps to the rear; short straps to the front and the four strap guides to the inside.

9.4 Secure with spacers and nuts (items 4 and 5) and tighten to 40 Nm. This will retain the curtain in place while continuing with the rest of the installation.

9.5 Pass the longer straps over the rear roll cage and the short straps over the front roll bar and secure with Velcro straps (refer to inset A) - see note 3 above.

9.6 Pass the longer straps forward through the support strap guides in the curtain and over the front roll bar.

9.7 Wrap the cable support straps around cant rails and back out through the curtain and attach to the short Velcro strap to create a cable support loop for temporary installations (refer to inset C).

9.8 Locate inner panel fixing bolts, which line up with the earth bonding leads (two each side) and remove the bolts, remove paint to create an earth-bonding path (refer to inset B).

9.9 Attach the four earthing straps (two each side) to the vehicle using the existing bolts and tighten to 40 Nm (refer to inset B).

9.10 Attach the lower curtain to the vehicle using spacers (item 4) and the existing bolts, which align to the metal eyelets and tighten to 40 Nm.

Refer to Fig 2

9.11 Front curtain. Before fitting the front curtain, Velcro strips must be attached above and to the rear of the door.

9.12 Cut two strips of self-adhesive Velcro, 610 mm long and two 360 mm long.

9.13 Attach the longer strips above the door and the shorter strips to the rear (refer to inset C). The self adhesive Velcro strips are secured in place using three rivets (refer to items 6 and 8), one at each end and one in the middle of each velcro strip, use 3,2 mm dia drill for rivet hole.

9.14 Fit the four header retaining strap assemblies (item 7) at the front of the vehicle, above the windscreen in line with rear curtain support straps.

9.15 Remove the hood tension straps to facilitate the fitting of the front curtain (Soft top vehicles only).

9.16 Fit front curtain (item 1) ensuring that the shorter straps are towards the rear of the vehicle with the four strap guides to the inside.

- 9.17 Run the longer straps from the rear curtain through the strap guides and attach to the header retaining straps at the front of the vehicle (refer to inset B).
- 9.18 Wrap the short Velcro straps around the roll bar and attach to the Velcro on the curtain.
- 9.19 Refit the hood straps and tension (Soft top vehicles only).
- 9.20 Fix curtain to vehicle using the existing M8 bolts, washers and spacers (item 4), tighten to 20 Nm (refer to inset C).
- 9.21 Ensure that the curtain fits around the seat belt anchor point and it is fastened.

NOTE

When fitting the earth straps to the header rail, ensure that the straps are located on the upper surface of the rail to prevent twisting and chafing of the braid.

- 9.22 Fit four earth straps (one at each end of the header rail (M6) using existing fixings and suitable washers, tighten to 7 Nm. Fit one on either side of the radio racking (M8) using existing fixings and tighten to 20 Nm (refer to insets A and C).
- 9.23 Tension straps and feed excess through loops in curtain to prevent loose ends falling.
- 9.24 Ensure that the two side flaps of the curtain are firmly attached to the Velcro above and to rear of the doors (refer to inset C).

Refer to Fig 3

Fitting the TUM (HS) FFR curtains

- 9.25 Remove the two rear radio operator's seats and seat retention rails, (one from each side of the vehicle).
- 9.26 Rear Curtain. Remove the four nyloc nuts and washers retaining the cant rail tie bar to the roll over bar hoops (two each side) and discard.
- 9.27 Ensure that the curtain (item11) is fitted with the long straps to the rear; short straps to the front and the four strap guides to the inside fit the curtain.
- 9.28 Secure to cant rail bolts with spacers and nuts (items 13 and 14), tighten to 40 Nm, this will retain the curtain in place while continuing with the rest of the installation.
- 9.29 Pass the longer straps over the rear roll cage and the short straps over the centre roll bar and secure with Velcro straps (refer to inset D) - see note 3 above.
- 9.30 Pass the longer straps forward through the support strap guides in the curtain and over the centre roll bar.
- 9.31 Wrap four cable support straps around cant rails and back out through the curtain and attach to mating short Velcro strap to create a cable support loop for temporary installations (refer to inset C).
- 9.32 Locate inner panel fixing bolts, which line up with the earth bonding leads (two each side) and remove the bolts, remove paint to create an earth-bonding path (refer to inset B).
- 9.33 Attach the four (two each side) earthing straps to the vehicle using the existing bolts and tighten to 40 Nm.
- 9.34 Attach the lower curtain to the vehicle using spacers (item 13) and the existing bolts, which align to the metal eyelets and tighten to 40 Nm.

- 9.35 Intermediate curtain. Remove the four nyloc nuts retaining the cant rail tie bar to the roll over bar hoops (two each side) and discard.
- 9.36 Ensuring that the intermediate curtain (refer to item 13) is the correct way round, with four cable guides to inside and front, fit the curtain (refer to insets C).
- 9.37 Secure to cant rail bolts with spacers and nuts (refer to items 13 and 14) and tighten to 40 Nm This will retain the curtain while continuing with the rest of the installation (refer to inset D).
- 9.38 Pass the longer straps from the rear curtain through the strap guide loops and then over the front roll bar, pass the short straps over roll bar securing to Velcro straps (refer to inset D).
- 9.39 Wrap the cable support straps around cant rails and back out through the curtain and attach to the short Velcro strap to create a cable support loop for temporary installations (refer to inset C).
- 9.40 Locate inner panel fixing bolts, which line up with the earth bonding leads (two each side), remove the bolts, remove paint to create an earth bonding path (refer to inset E).
- 9.41 Attach the four earthing straps (two each side) to the vehicle using existing bolts and tighten to 40 Nm (refer to inset B).
- 9.42 Attach the lower curtain to the vehicle using spacers (item 4) and existing bolts, which align with the metal eyelets (four each side) and tighten to 40 Nm.

Refer to Fig 2

- 9.43 Front curtain. Before fitting the front curtain, Velcro strips must be attached above and to the rear of the door.
- 9.44 Cut two strips of self-adhesive Velcro strips, 610 mm long and two more 360 mm long.
- 9.45 Attach the longer strips above the door and the shorter strips to the rear (refer to inset C). The self adhesive Velcro strips are secured in place using three rivets (refer to items 15 and 17), one at each end and one in the middle of each velcro strip, use 3,2 mm dia drill for rivet hole..
- 9.46 Fit the four header retaining strap assemblies (item 16) at the front of the vehicle, above the windscreen in line with the rear curtain support strap.
- 9.47 Fit front curtain (item 9) ensuring that the shorter straps are towards the rear of the vehicle with the four strap guides to the inside.
- 9.48 Run the longer straps from the rear curtain through the strap guides and attach to the header retaining straps at the front of the vehicle (refer to inset B).
- 9.49 Wrap the short Velcro strap around the roll bar and attach to the Velcro on the curtain.
- 9.50 Refit the hood straps and tension (Soft top vehicles only).
- 9.51 Fix curtain to vehicle using the existing M8 bolts and spacers (item 4), tighten to 20 Nm (refer to inset C).
- 9.52 Ensure that the curtain fits around the seat belt anchor point and it is fastened.

NOTE

When fitting the earth straps to the header rail, ensure that the straps are located on the upper surface of the rail to prevent twisting and chafing of the braid.

9.53 Fit four earth straps (one at each end of the header rail (M6) using existing fixings and suitable washers, tighten to 7 Nm also one on either side of the radio racking (M8) using existing fixings (refer to insets A and C) and tighten to 20 Nm.

9.54 Tension straps and pass excess through loops in curtain to prevent loose ends falling.

9.55 Ensure that the two side flaps of the curtain are firmly attached to the Velcro around the doors (refer to inset C).

Fitting of eyelet

Refer to Fig 4

9.56 When hazard curtains (3) need to be cut, to allow aerial leads to be passed through, eyelets (items 3 and 12) are provided to ensure there is a neat finish and no degradation to the curtains capability after cutting.

9.57 Determine the position of the eyelet and mark its position.

NOTE

When cutting the hole, place a board or hard flat surface behind that will help you carrying out the operation.

9.58 Mark out a 47 mm hole and using a sharp knife remove the material.

9.59 Place the male part of the eyelet (2) on the inside of the curtain.

9.60 Place the female part (1) on the other side and feed onto one edge of the male part and follow round using thumb and forefinger.

Testing after embodiment

10 Carry out an earth bonding test using Test Set Bond Resistance (item 18) to ensure the following maximum resistances are not exceeded:

10.1 25 milliohms between any RADHAZ curtain earth strap and vehicle chassis.

10.2 2 milliohms across any individual earth bond connection.

NOTE

Although a maximum overall bonding resistance of 25 milliohms is quoted, in practice, typical values of 5 milliohms can be achieved and every effort should be made to attain this figure.

EFFECT ON WEIGHT

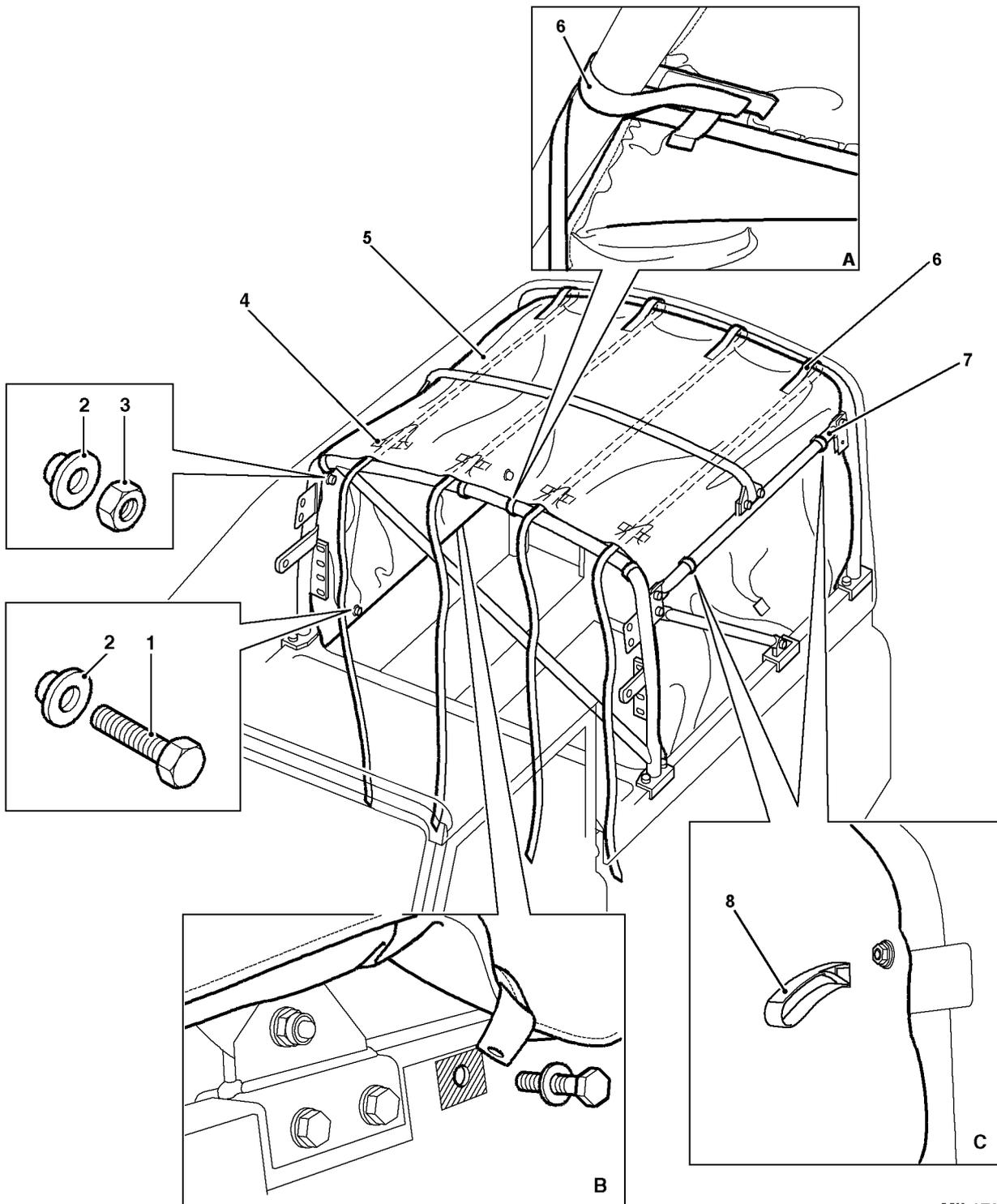
11 Negligible

PUBLICATION AMENDMENTS

NOTE

Necessary amendment(s) will be issued separately.

12 Nil

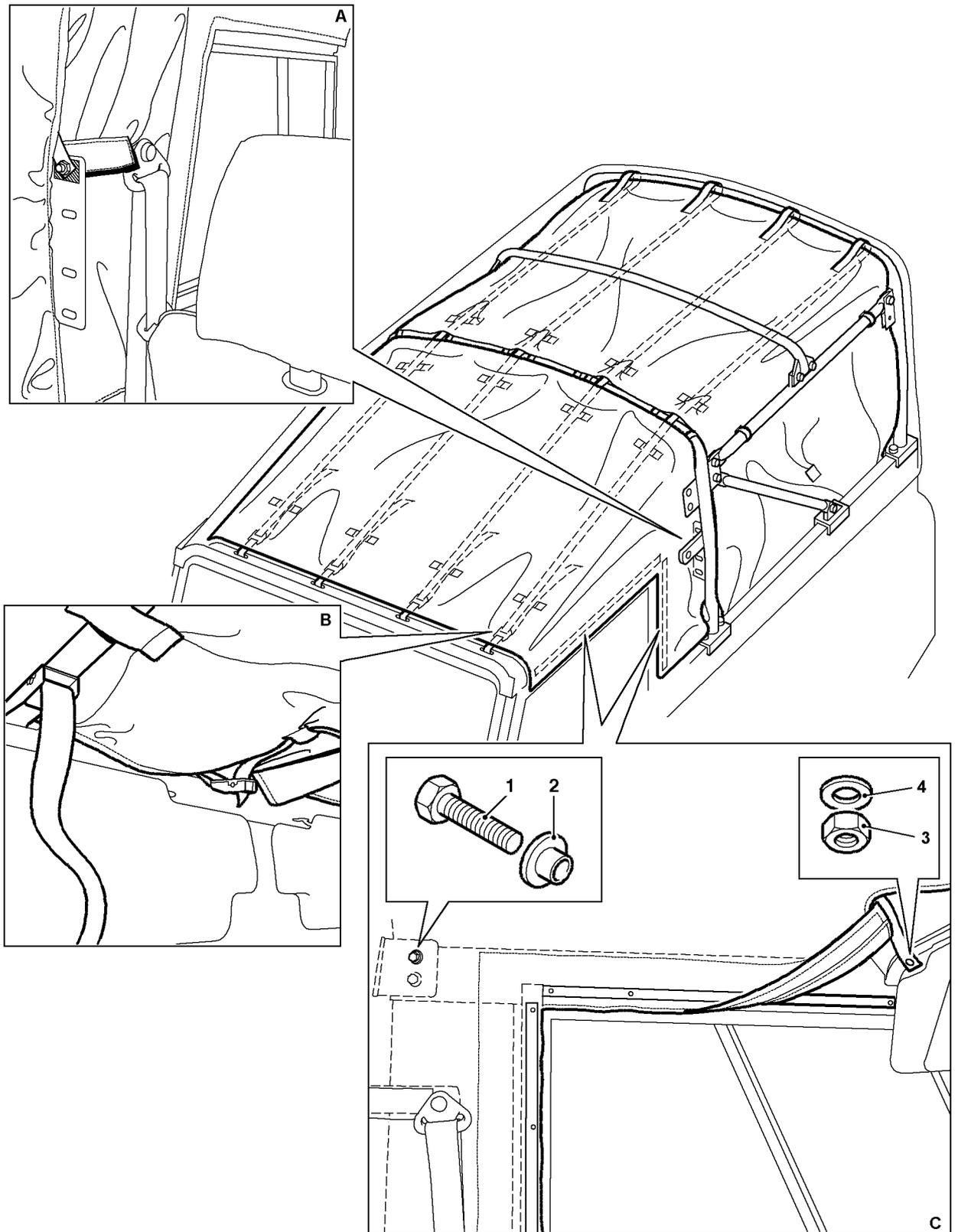


MIL1796

- 1 Bolt
- 2 Spacer
- 3 Nut
- 4 Support strap loop

- 5 Rear curtain
- 6 Support strap
- 7 Cantrail tie bar
- 8 Cable support straps

Fig 1 Rear curtain

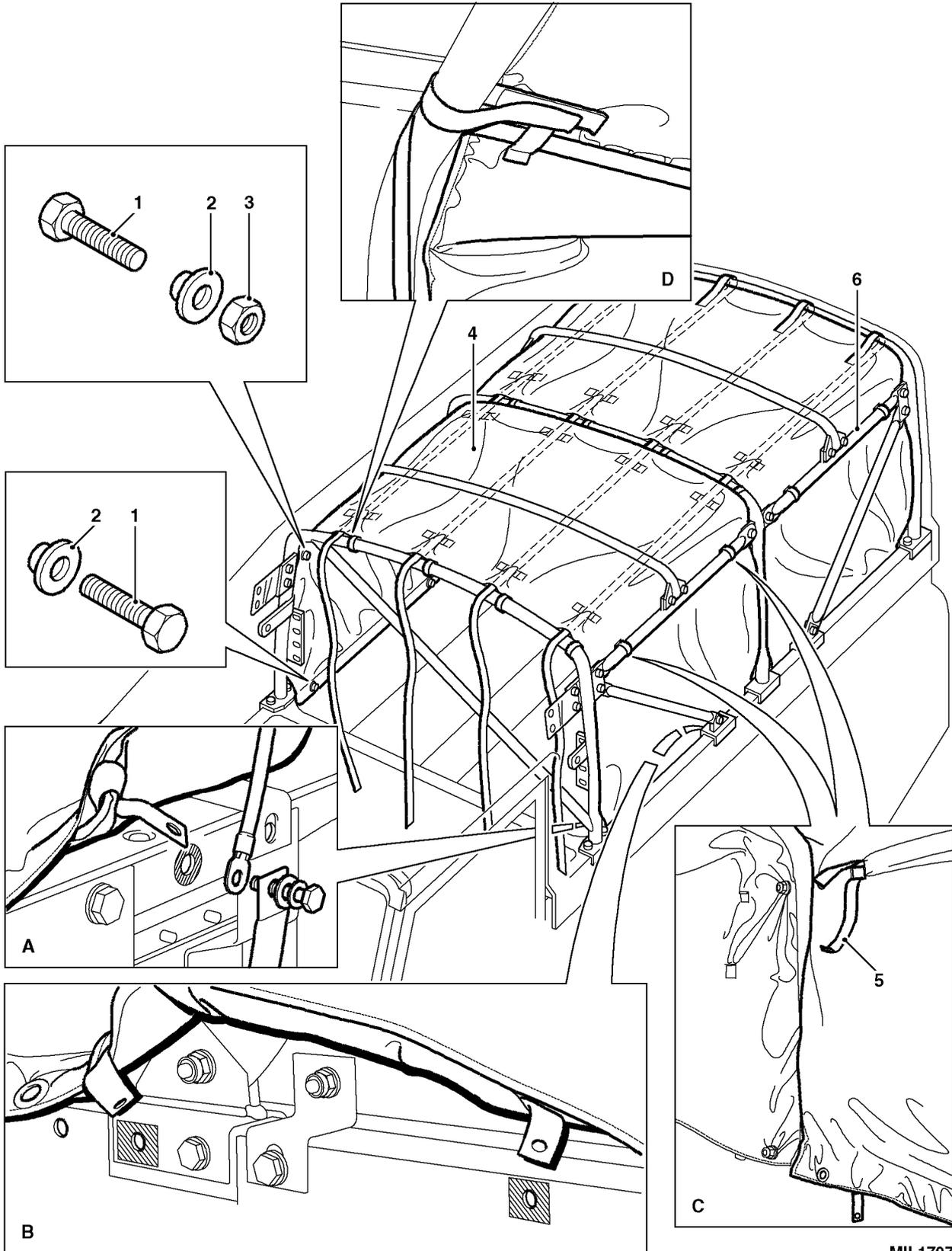


MIL1798

- 1 Bolt
- 2 Spacer

- 3 Nut
- 4 Washer

Fig 2 Front curtain

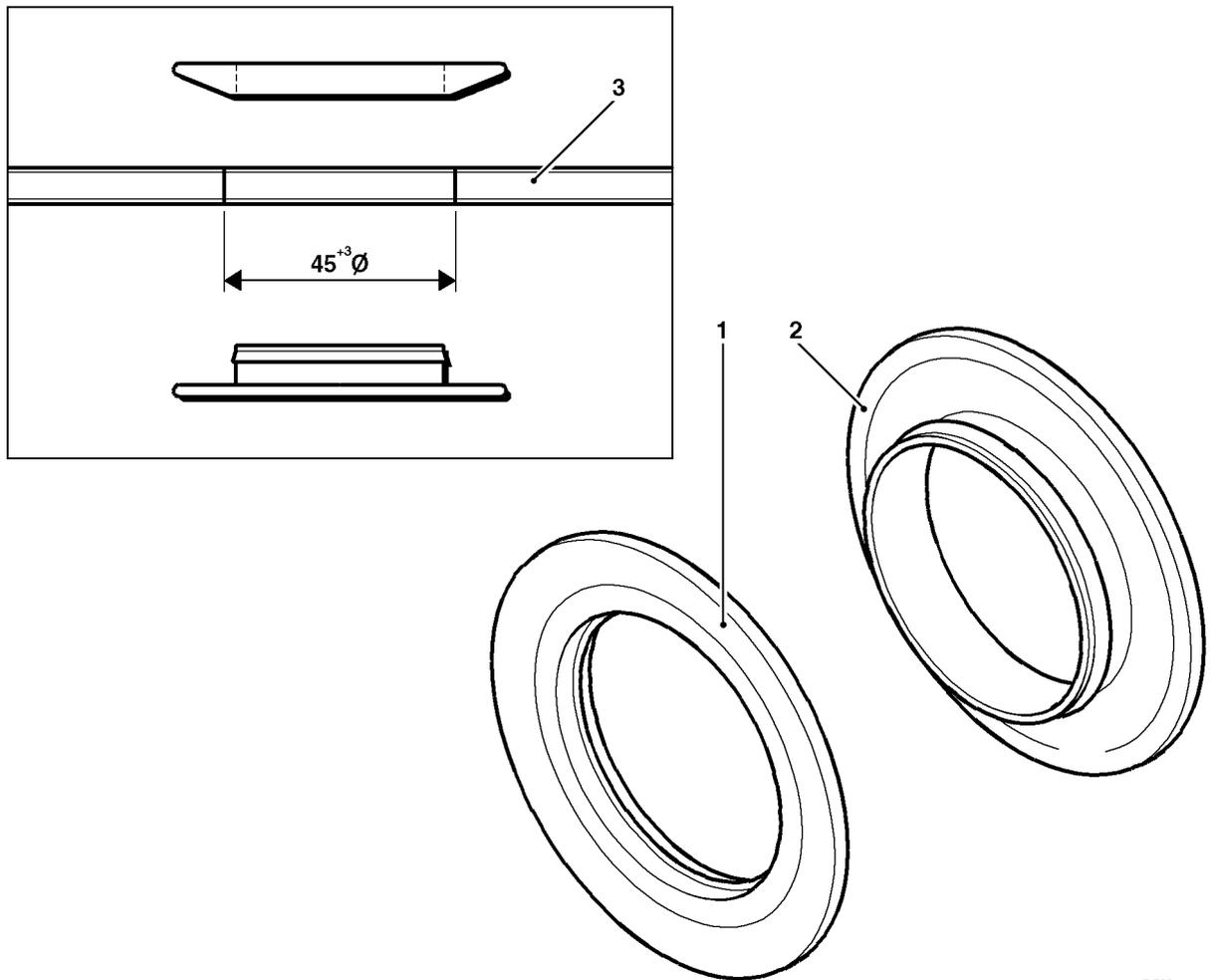


MIL1797

- 1 Bolt
- 2 Spacer
- 3 Nut

- 4 Intermediate curtain
- 5 Cable support strap
- 6 Cant rail

Fig 3 Intermediate curtain



MIL1799

- 1 Female eyelet
- 2 Male Eyelet
- 3 Hazard curtain

Fig 4 Eyelet assembly

**TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION No 13**

Sponsor:

CSV(Sp) IPT

Publication Agency:

Defence Logistics Organisation
Project No: LLVUty - 04

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Vehicle protection kit.

(Approval No LSTP 12-6670)

INTRODUCTION

1 This instruction details the fitting of the protective guards to windscreen, side windows, rear door window/escape hatches and light covers.

1.1 Limitations on use of equipment. Nil

APPLICABILITY

2 (TUM) Ambulance HS vehicles deployed in Northern Ireland or on approval of Equipment Support Manager.

2.1 Fitted to equipment held by user units.

REASON FOR MODIFICATION

3 Code 1 - to improve safety

PRIORITY

4 Army: Routine
RAF: Class 3

ESTIMATED TIME REQUIRED

5 Embodiment: 8 man-hours

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.
RAF - When required

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action: NA

Action required by

7

7.1 Units and establishments holding equipment.

7.1.1 Examine vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary Units authorised to carry out level 2, 3 and 4 maintenance.

7.1.3 ARMY - On receipt of stores, request REME to modify equipment.

7.1.4 ARMY - Record the modification subject and AESP number in equipment documents.

7.1.5 RAF - Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADP MTMS job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

7.2 Army units authorised to carry out levels 2,3 and 4 maintenance and RAF units.

7.2.1 ARMY - When requested by users or during overhaul of equipments on charge without REME level 2 Support, obtain the items listed in Para 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.2.3 Complete AF G1084A when reporting completion of the modification to FORWARD (RAF) using the following code:

RAF: MODIFICATION CODE AFN 157

NOTE

RAF units operating STAMA are also to complete ADP MTMS Job Certification Sheet and to follow the procedures laid down in 100C-08A.

7.3 All recipients of this instruction. Add particulars to AESP 2320-D-128-811 Mod Instr index.

Stores tools and equipment

8

NOTE

Items are not codified. If required, they should be demanded using manufacturers part numbers through the normal system.

8.1 Stores to be demanded.

8.1.1 The following items are to be demanded quoting this instruction authority for demand.

Item No	DMC	NSN/Part No	Designation	Qty Per eqpt
		N/P	Mod set: comprising:	1
1		MSP0117	Windscreen guard assy	1
2		MSP0118	Buffer 'Z' brackets	2
3	7RU	2510-99-796-6141	Buffer	5
4		MSP0119	Snap catch c/w backing plate	1
5		MSP0120	Cable handle	1
6		MSP0121	Upper screen guide tube assy	1
7		MSP0122	Rope (2m long) c/w 'U' clamps	1
8		MSP0124	Bonnet plate	1
9		MSP0114	Side door guard R/H	1
10		MSP0115	Side door guard L/H	1
11		MSP0116	Knurled knob	8
12		MSP0111	Side/rear window guard assy	3
13		MSP0112	Rear lamp formed guards	2
14		MSP0125	Bush bar front assy	1
15		MSP0113	Beacon guard	2

8.2 Stores or suitable equivalent to be obtained locally.

16	G1 / 5305-99-122-5261	Bolt, hex hd, M8 x 80 long	2
17	SH104401	Bolt, hex hd, M4 x 40 long	4
18	SH104251	Setscrew, hex hd, M4 x 25 long	4
19	G1 / 5305-99-122-5360	Setscrew, hex hd, M6 x 16 long	6
20	G1 / 5305-99-122-5361	Setscrew, hex hd, M6 x 20 long	8
21	G1 / 5305-99-122-8666	Setscrew, hex hd, M6 x 35 long	2
22	G1 / 5305-99-122-5367	Setscrew, hex hd, M8 x 25 long	2
23	G1 / 5306-99-122-4910	Setscrew, hex hd, M10 x 25 long	4
24	SB106300	Skt screw, button hd, M6 x 30 long	4
25	SB106400	Skt screw, button hd, M6 x 40 long	2
26	G1 / 5310-99-119-3324	Nut, nyloc, M4	8
27	G1 / 5310-99-138-8423	Nut, nyloc, M6	12
28	G1 / 5310-99-122-5496	Nut, nyloc, M8	4
29	G1 / 5310-99-122-5497	Nut, nyloc, M10	4
30	G1 / 5310-99-122-3031	Washers, flat, M4	12
31	G1 / 5310-99-122-6474	Washers, flat, M6	A/R
32	G1 / 5310-99-208-6458	Washers, spring, M6	8
33	7RU / 5310-99-250-8186	Washers, flat, M8	A/R
34	G1 / 5310-99-137-9231	Washers, spring, M8	3
35	G1 / 5310-99-122-6476	Washers, flat, M10	18
36	G1 / 5310-99-138-4838	Rivnuts, M6 (AVK type)	10
37	RU612373	Rivets, alloy, 4.8 x 9.5 long csk	18

Item No	DMC	NSN/Part No	Designation	Qty Per eqpt
38	G1 / 5310-99-122-5295		Nut, M6	2

Sequence of operations

NOTES

- (1) The item numbers of Para 8 are used as references throughout this instruction.
- (2) The kit components have a black nylon finish, use masking tape on surface when marking components for drilling.
- (3) Only flat washers must come into contact with the nylon coating. Always use a flat washer under a spring washer.
- (4) Assistance will be required to locate and fit some of the items in this kit.
- (5) Items that are not codified, if required should be demanded using manufacturers part numbers through the normal system

9 Carry out the modification as follows:

9.1 Bonnet mounting plate.

9.1.1 Remove bonnet spare wheel mounting and any other ancillary equipment if fitted and place to one side.

9.1.2 Drill through the 18 pop rivets holding the bonnet plate and discard.

NOTE

Take care when removing the rivets ensuring that the existing holes are not enlarged.

9.1.3 Locate new aluminium bonnet plate (item 7) and secure with 18 pop rivets (item 37) using existing holes.

9.2 Windscreen guard assembly.

Refer to Fig 1.

NOTE

Vertical struts (part of item 1) are fitted on each side of the vehicle. To ensure correct alignment the struts should be fitted progressively independent of the screen guard.

9.2.1 Remove existing middle M8 fixing from windscreen bracket and discard and drill 8,5 mm hole through windscreen mounting bracket (refer to inset A).

9.2.2 Offer up side support strut so that top bracket on strut locates flush with vehicle body.

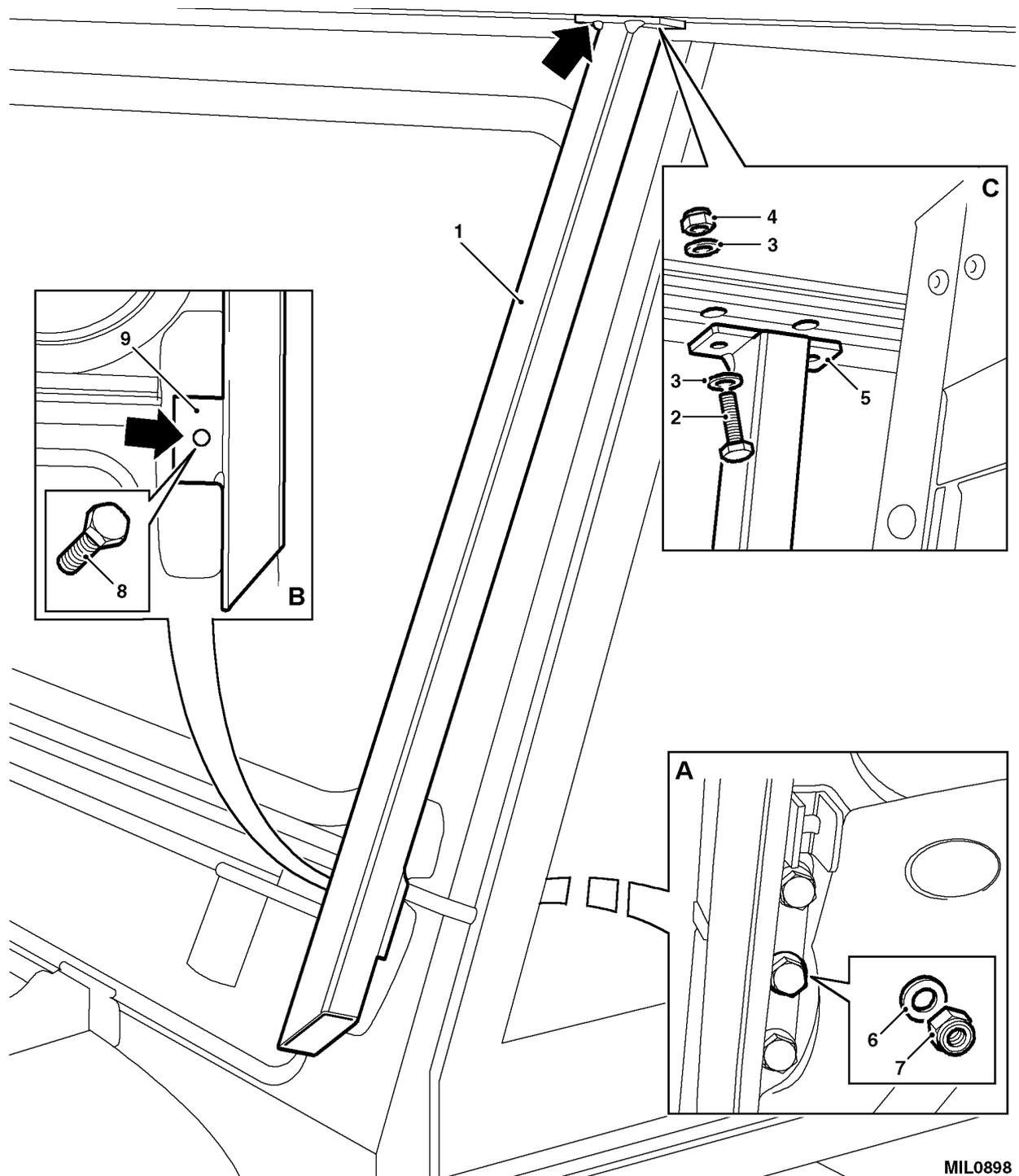
NOTE

Take care at this stage to ensure that the strut alignment is square and as neat as possible.

9.2.3 Mark position on lower strut bracket through fixing hole modified at Para 9.2.1 from inside of vehicle.

9.2.4 Drill 10 mm dia hole in lower mounting bracket on strut.

9.2.5 Fasten strut to windscreen bracket with bolt, washer and nyloc nut (items 16, 28 & 33) but do not tighten at this stage (refer to inset A & B).



MIL0898

- | | | | |
|---|---------------------|---|---------------------|
| 1 | Strut, handed LH/RH | 6 | M8 washer, flat |
| 2 | M6 setscrew | 7 | M8 nut, nyloc, |
| 3 | M6 Washer, flat | 8 | M8 Bolt |
| 4 | M6 nut, nyloc, | 9 | Lower strut bracket |
| 5 | Top bracket | | |

Fig 1 Support strut

- 9.2.6 Recheck strut for alignment or when fitting second strut, ensure that they are the same distance apart at top and bottom.
- 9.2.7 Spot drill upper bracket to vehicle - two places.
- 9.2.8 Move strut clear, drill holes, to suit M6 setscrews, in vehicle frame.
- 9.2.9 Secure struts at top with setscrew, flat washer and nyloc nut (items 20, 27 & 31) - (refer to inset C).
- 9.2.10 Tighten bottom bracket fixings.

Refer to Fig 2.

- 9.2.11 With assistance offer up screen guard assy (item 1) and locate in desired position.
- 9.2.12 Mark fixing position through screen guard bracket pivot point on to strut face - typical both struts.
- 9.2.13 Remove struts and drill 10 mm diameter hole at pivot point.
- 9.2.14 Re-fit struts to vehicle and secure. Offer up guard; locate setscrew, flat washer and nyloc nut (items 22, 28 and 33) – (refer to inset A).

NOTE

Pack between strut and guard with M8 flat washers (item 33) as necessary.

- 9.2.15 Close screen guard, mark seating position of buffers (item 3) relative to 'Z' brackets (item 2), mark suitable bracket fixing point (two fixings required per bracket) – refer to inset B & C.
- 9.2.16 Drill to suit M6 setscrews. Secure each bracket with setscrew, flat washer and nyloc nut (items 20, 31 and 27).

NOTE

It may be necessary to pack under bracket using flat washers (Item 31) if position clashes with body rivet. Ensure brackets fit square to vehicle.

- 9.2.17 Fit five rubber buffers (item 3) to guard (two on the outside and three on the inside of the frame).

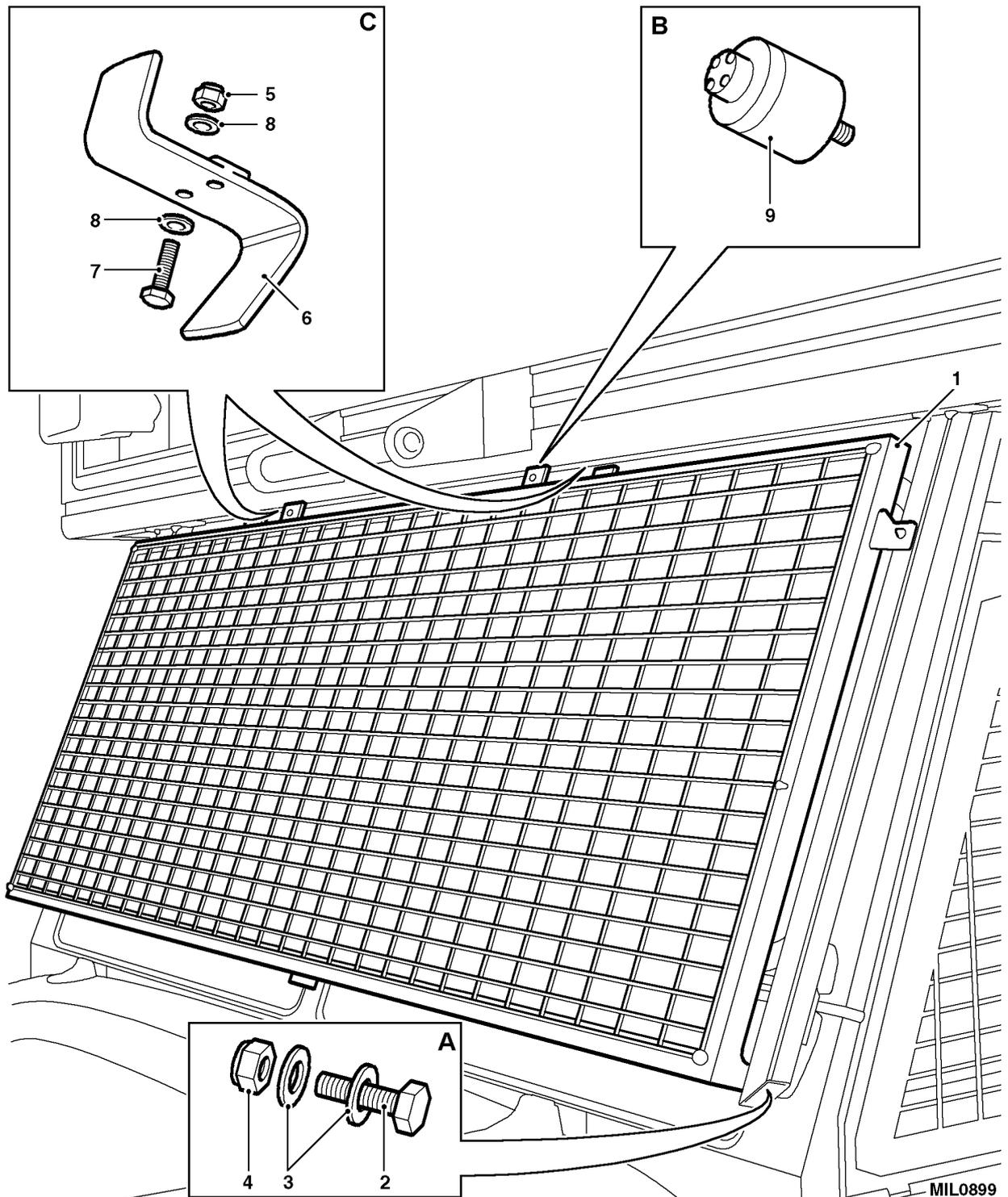
NOTE

Three M8 spring washers (item 34) are to be used on the inside of the frame only.

- 9.2.18 Check guard is seated correctly on buffers when in the closed position.

NOTE

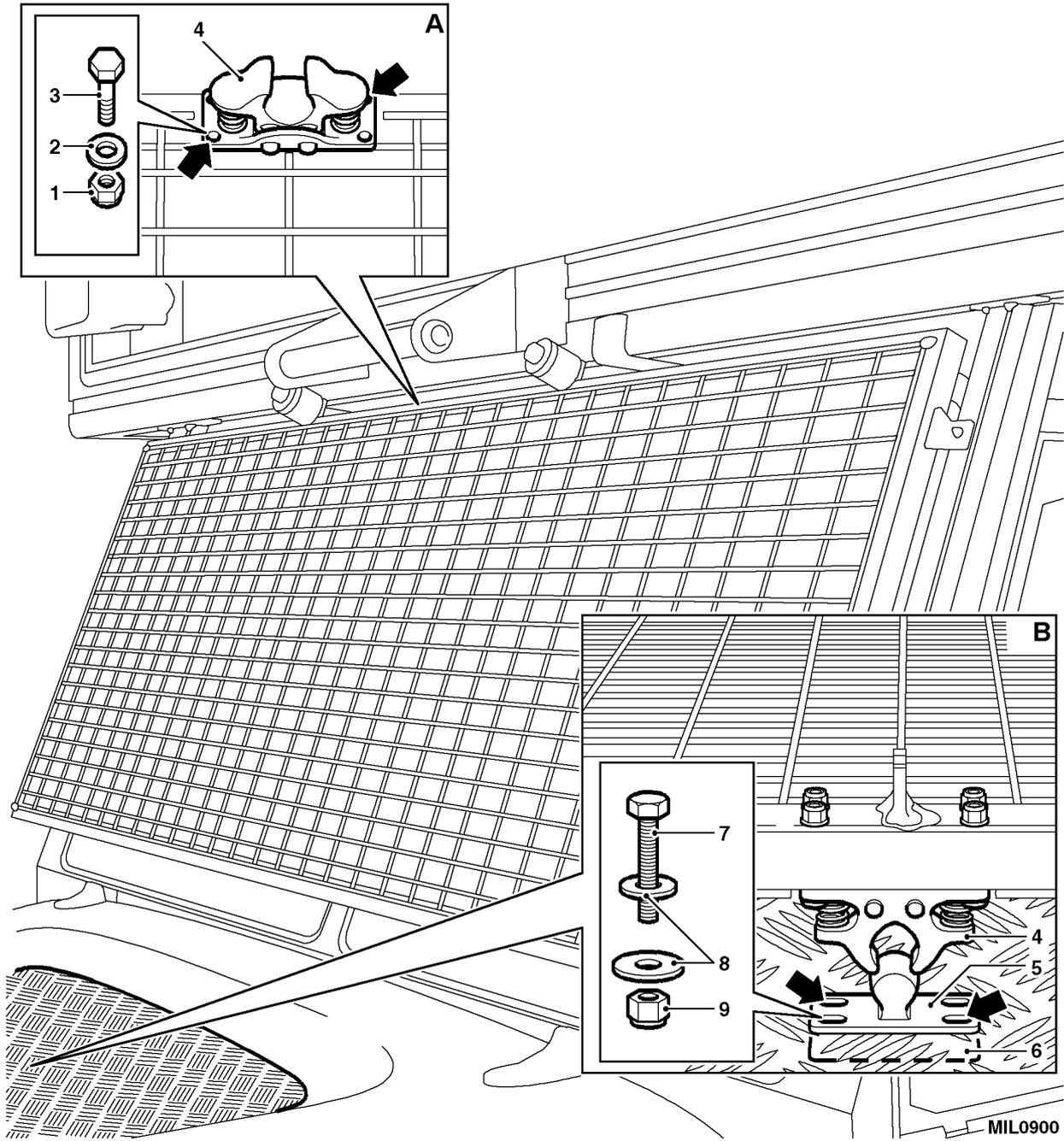
Trim rubber buffers if necessary with sharp knife if they meet with the roof when closing.



MIL0899

- | | | | |
|---|------------------|---|----------------|
| 1 | Windscreen guard | 6 | 'Z' bracket |
| 2 | M8 setscrew | 7 | M6 setscrew |
| 3 | M8 flat washer | 8 | M6 flat washer |
| 4 | M8 nyloc nut | 9 | Buffer |
| 5 | M6 nyloc nut | | |

Fig 2 Windscreen guard



- | | | | |
|---|----------------|---|----------------|
| 1 | M4 nyloc nut | 6 | Backing plate |
| 2 | M4 flat washer | 7 | M4 setscrew |
| 3 | M4 bolt | 8 | M4 flat washer |
| 4 | Catch, female | 9 | M4 nyloc nut |
| 5 | Catch, male | | |

Fig 3 Windscreen guard snap catch

Refer to Fig 3.

9.2.19 Locate snap catch (Item 3) female section on guard frame in central position. Fit catch with bolts, flat washers and nyloc nuts (Items 17, 30 and 26) (refer to inset A).

9.2.20 Lower guard with male section fitted in catch, mark position and drill four 5 mm dia holes through bonnet plate and bonnet (refer to inset B).

9.2.21 Locate backing plate on underside of bonnet and secure male section of catch with setscrews, flat washers and nyloc nut (Items 18, 30 and 26).

9.2.22 Check operation of catch. Make minor adjustments as necessary with the fixings in the slotted holes.

Refer to Fig 4.

9.2.23 With guard in closed position mark on vehicle body the optimum entry point for the rope relative to the fixing lug on the guard frame.

9.2.24 Drill through vehicle to suit tube diameter.

9.2.25 Locate guide tube assembly (Item 5) inside the vehicle. Mark position of fixing holes (refer to inset A).

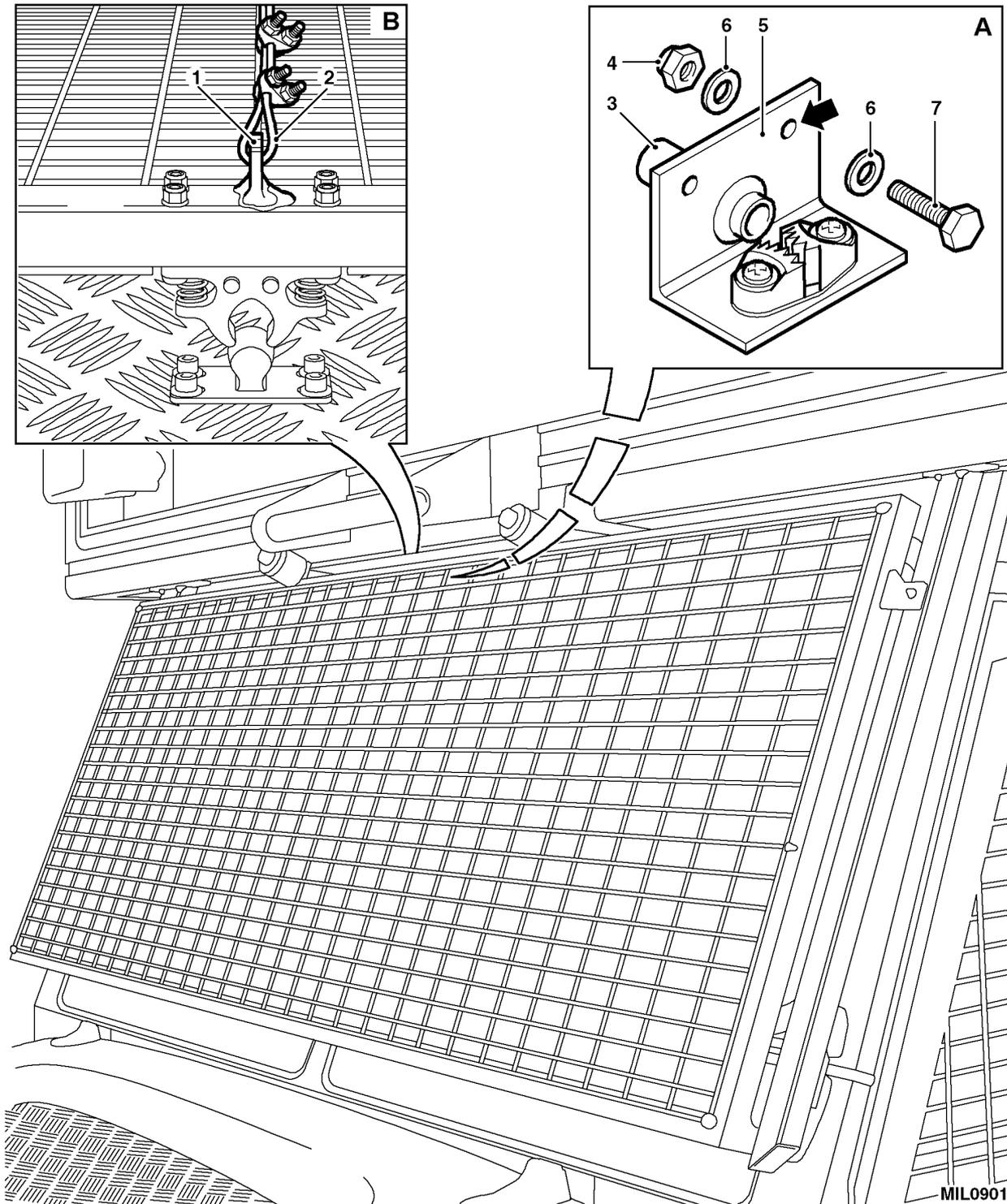
9.2.26 Drill holes to suit M6 setscrews. Secure guide tube assembly bracket with setscrew, flat washer and nyloc nut (Items 19, 31 and 27).

9.2.27 Pass rope (Item 6) through fixing lug on guard frame, allow 150 mm overlap and secure with two 'U' clamp assemblies (refer to inset B).

9.2.28 Feed other end of rope through guide tube and into vehicle, locate handle (Item 4) on rope and secure with a double knot.

NOTE

Check that the guard can be closed from inside the vehicle and when released returns to and is held in position on the bonnet by the quick release catch. Stow the loose cable in the roof void when the guard is in the closed position.



- | | | | |
|---|--------------------------|---|--------------------|
| 1 | Lug | 5 | Guide tube bracket |
| 2 | Prestretched 3.5 mm rope | 6 | Washer, flat |
| 3 | Guide tube | 7 | Setscrew |
| 4 | M6 nyloc nut | | |

Fig 4 Windscreen guard closing arrangement

9.3 Side door window guards.

Refer to Fig 5.

NOTE

The following procedure is typical for guards fitted to both the driver's and passenger door.

9.3.1 Offer up window guard (item 8 or 9), dependent on which side is being fitted, to optimum position on window. Mark the two top fixing points on the side screen frame.

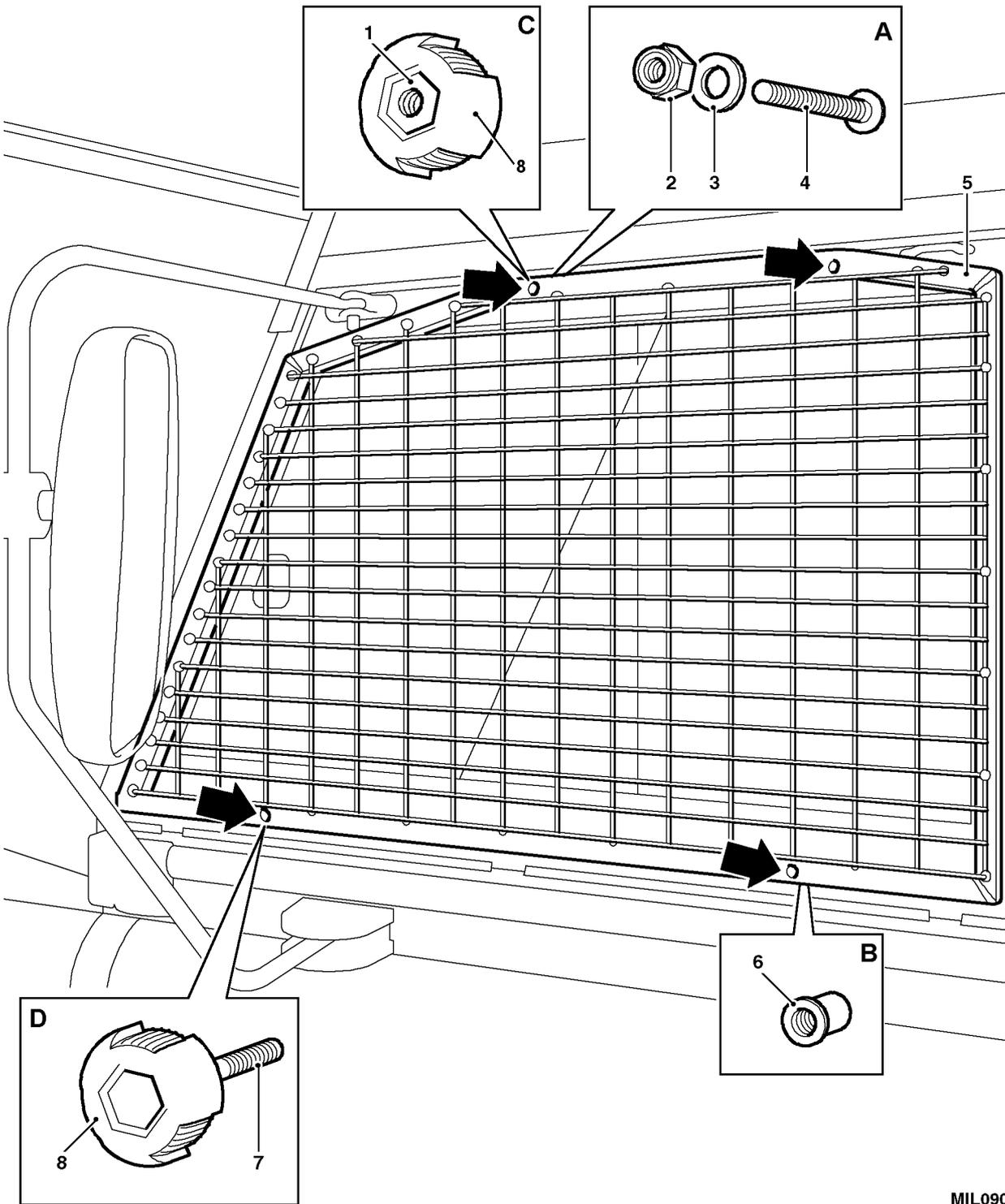
9.3.2 Drill two 7 mm dia holes in side screen, insert two button head socket screws from inside of door and secure with Skt screw, flat washer and nyloc nut (Items 25, 31 and 27) (refer to inset A).

9.3.3 Hang window guard on socket screws; mark lower fixing positions on side screen frame.

9.3.4 Remove guard, drill 10mm hole and fit M6 rivnuts (Item 36) at lower fixing points (refer to inset B).

9.3.5 Hang window guard on socket screws, insert hexagonal nut (Item 38) in knurled knob (Item 10) and fasten guard at top positions (refer to inset C).

9.3.6 Fit hexagonal set screw (Item 21) into knurled knob and secure directly to lower fixing point (refer to inset D).



MIL0902

- | | | | |
|---|----------------|---|--------------|
| 1 | M6 nut | 5 | Guard |
| 2 | M6 nyloc nut | 6 | M6 rivnut |
| 3 | M6 flat washer | 7 | M6 setscrew |
| 4 | M6 setscrew | 8 | Knurled knob |

Fig 5 Side window guard

9.4 Side/rear body window guard assembly.

Refer to Fig 6.

NOTES

(1) Guards are fitted to the bodyside window on each side and to the rear door window. This procedure is typical in three places. The guards are supplied as a unit and after displacing the window are designed to enable quick release from inside the vehicle.

(2) Hinges on the side windows must always be to the front of the vehicle.

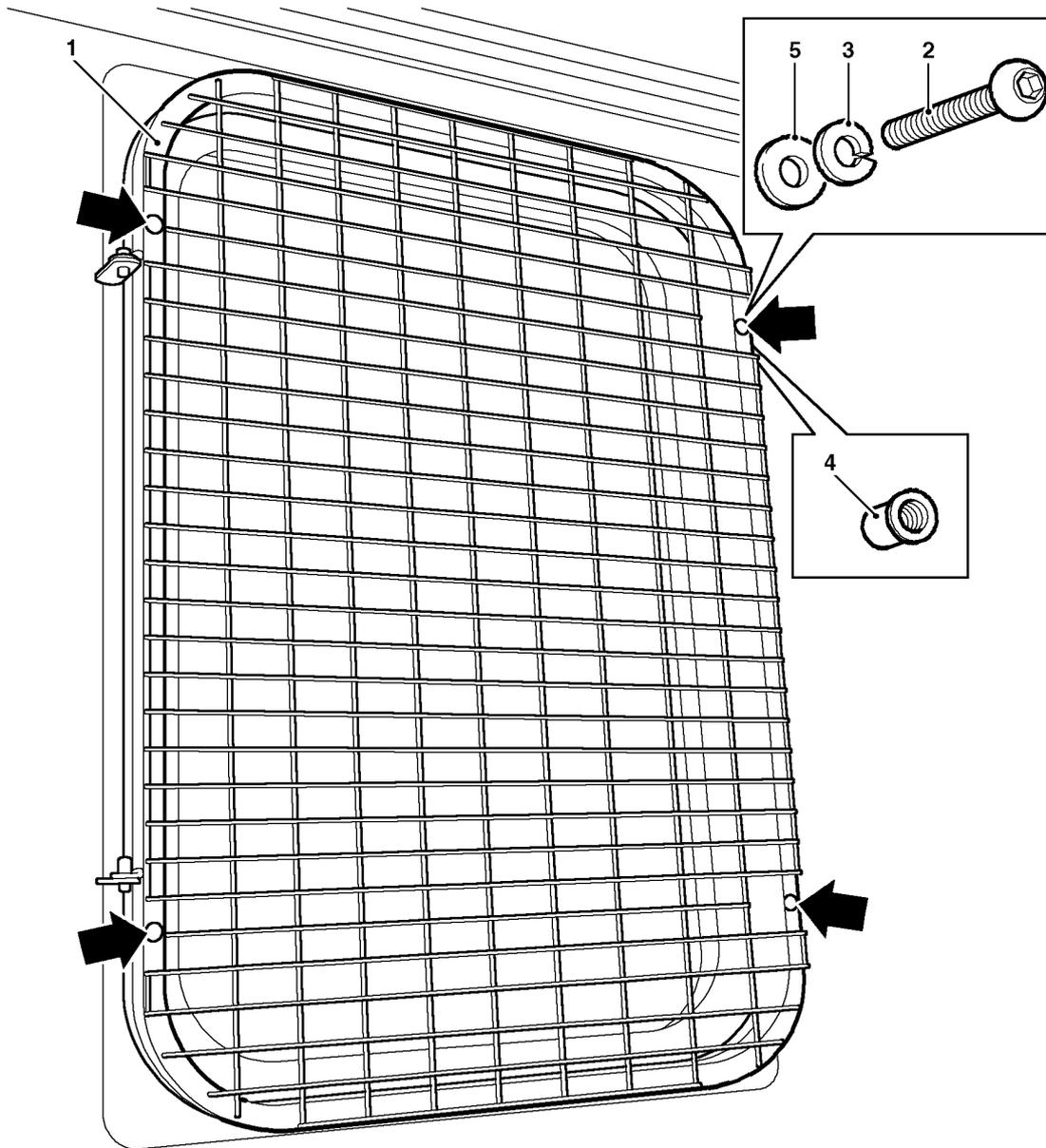
9.4.1 Offer up and locate guard square and central to window. Mark the upper two fixing points on the window panel.

9.4.2 Drill 10 mm hole and fit M6 rivnuts (item 36) at the upper fixing points.

9.4.3 Locate guard in position, temporarily secure with socket screws (item 24).

9.4.4 Mark the lower two fixing points on the window panel. Remove guard; drill 10 mm hole and fit M6 rivnuts (item 36) at the lower fixing points.

9.4.5 Fit guard with Skt screw, flat washer and spring washer (items 24, 31 and 32).



MIL0903

- | | | | |
|---|------------------|---|----------------|
| 1 | Guard | 4 | M6 rivnut |
| 2 | M6 socket screw | 5 | M6 flat washer |
| 3 | M6 Spring washer | | |

Fig 6 Side/rear window/escape hatch guard

9.5 Rear lights guard.

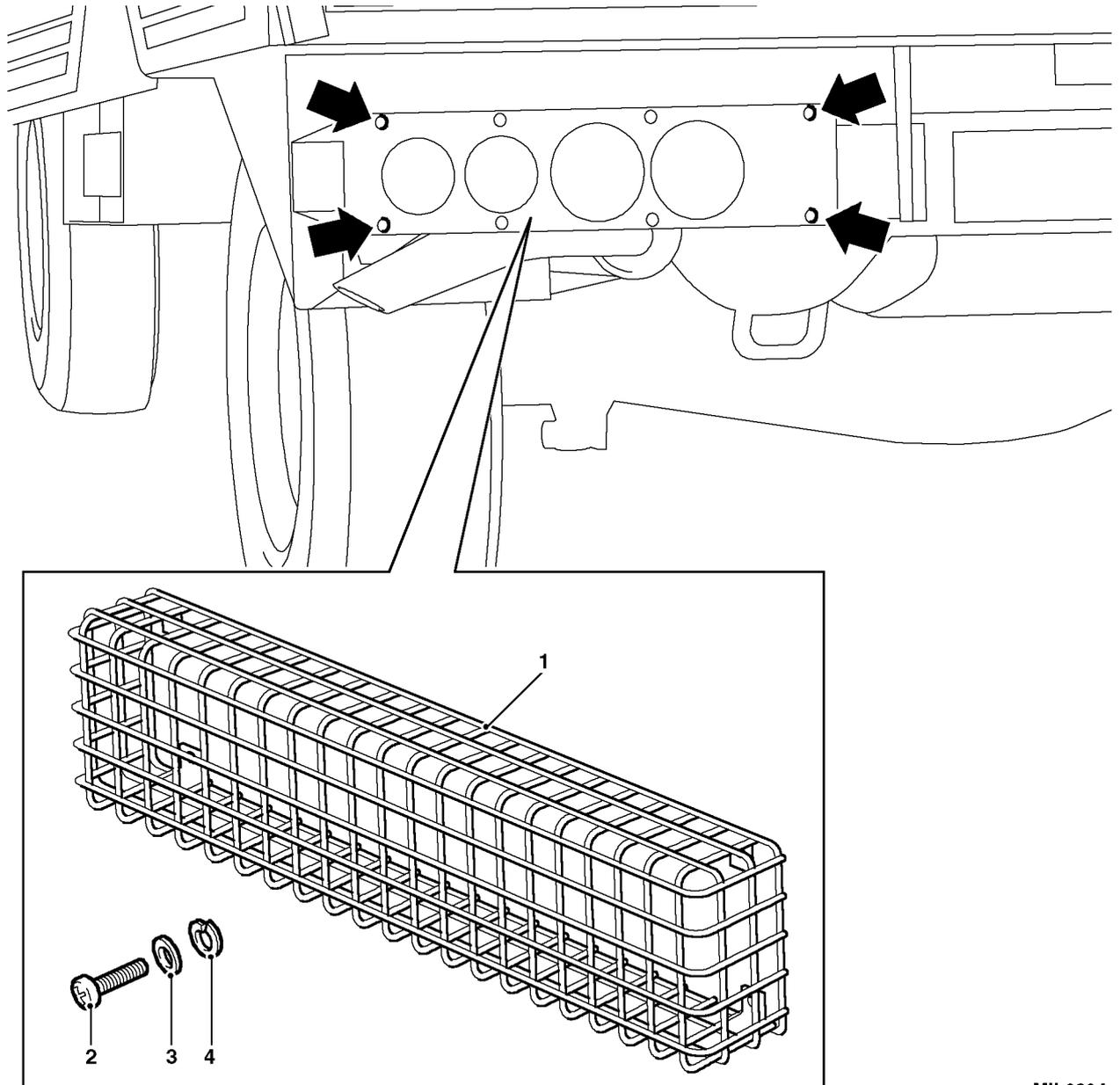
Refer to Fig 7.

NOTE

The guards utilise the existing light bracket fittings and protect each of the rear light clusters.

9.5.1 Remove the four existing outer M5 pan head screws complete with flat and spring washers.

9.5.2 Fit light guards (item 13) and replace fixings.



MIL0904

- | | | | |
|---|-----------------|---|----------------|
| 1 | Guard | 3 | Washer, flat |
| 2 | Screw, pan head | 4 | Washer, spring |

Fig 7 Rear light cluster guard

9.6 Front bush bar assembly.

Refer to Fig 8.

NOTE

The front bush bar protects the front lights and radiator and sits directly on the front bumper utilising existing drillings.

WARNING

BUMPER SECURITY. ENSURE THAT THE BUMPER IS FULLY SUPPORTED WHEN THE FITTINGS ARE REMOVED.

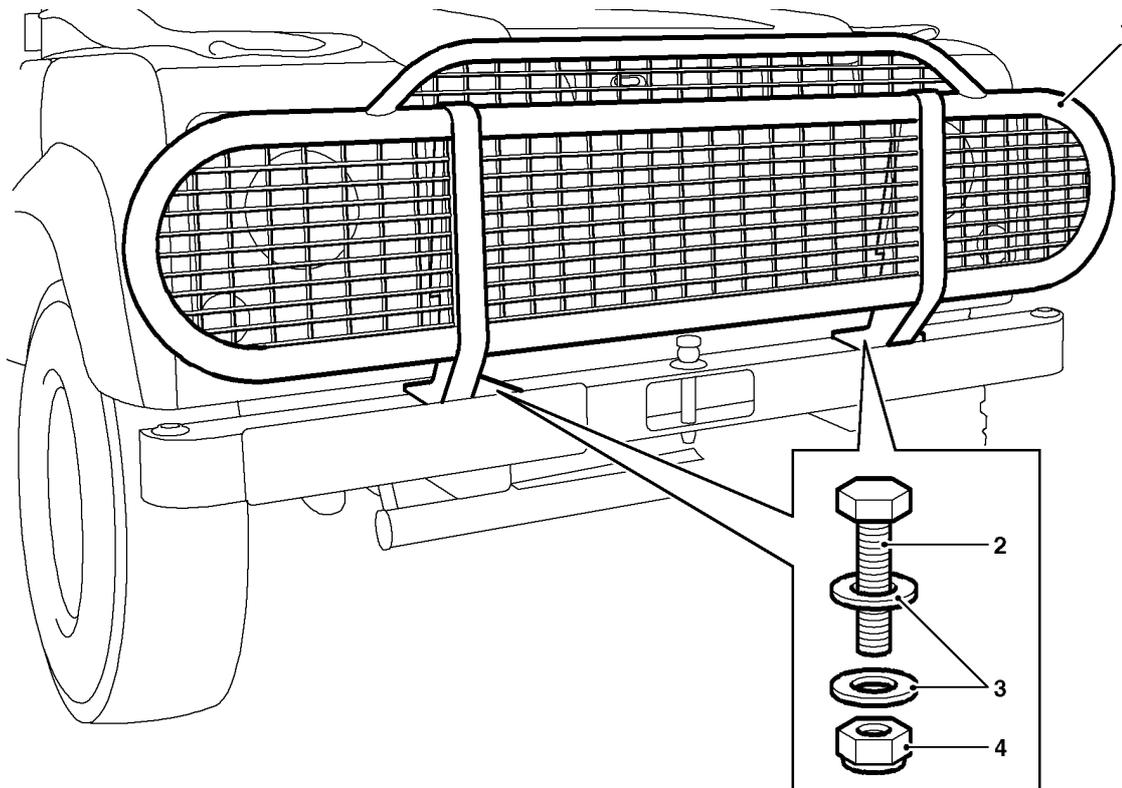
9.6.1 Remove the four M10 bolts complete with flat washers securing the bumper to the chassis.

9.6.2 Fit the bush bar assembly (item 14) on to the bumper and refit the four M10 bolts and flat washers.

NOTE

Packing washers maybe required between the bumper and feet of bush bar (rear only).

9.6.3 Secure bush bar at forward mounting points with four hex head setscrews, nyloc nut and flat washers (items 23, 29 and 35).



MIL0905

1 Bush bar
2 M10 setscrew

3 M10 flat washer
4 M10 nyloc nut

Fig 8 Front bush bar

9.7 Beacon guard.

Refer to Fig 9.

NOTE

The beacon guard is supplied in one piece and is fitted directly on to the vehicle roof.

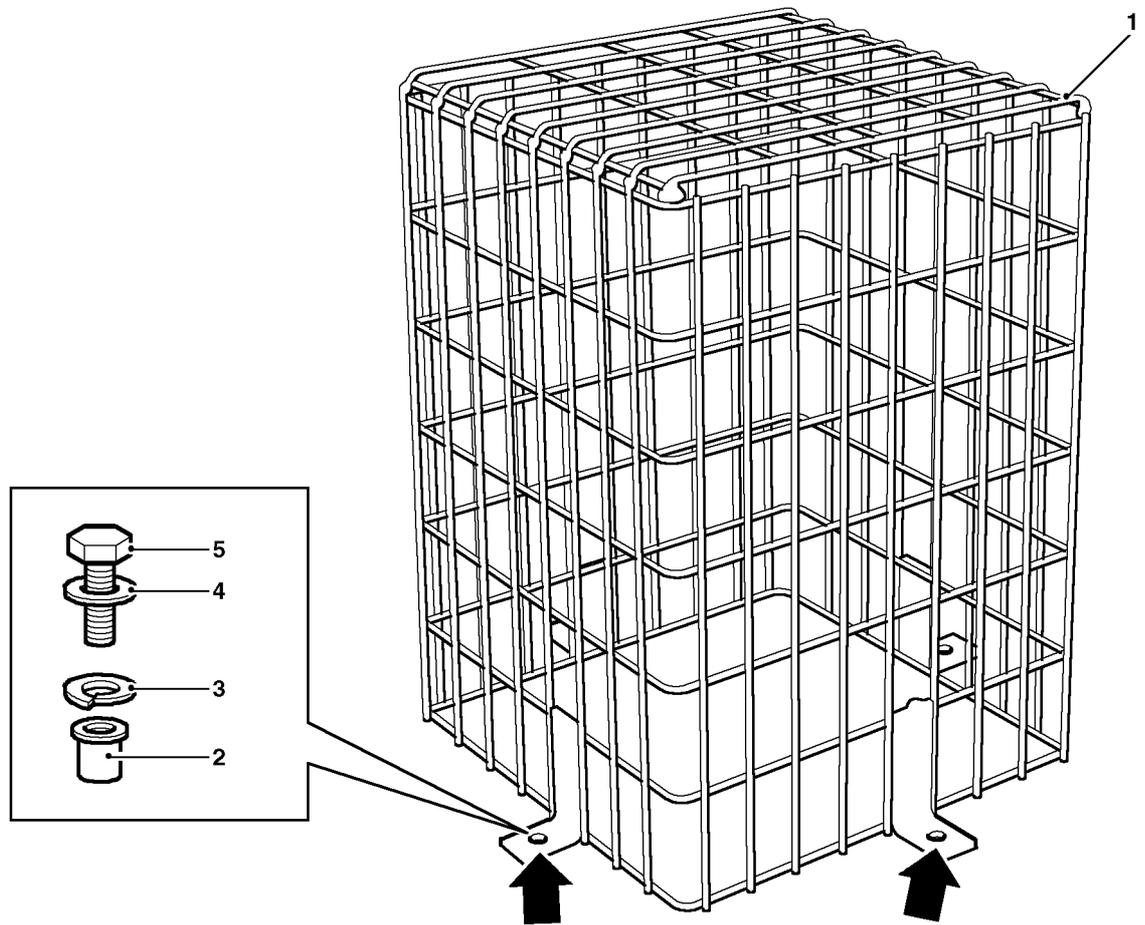
9.7.1 Position guard (item 15) squarely on the roof and mark fixing points.

CAUTION

Ensure that any drilling does not foul beacon wiring

9.7.2 Drill 10 mm hole and fit four M6 rivnuts (item 36).

9.7.3 Locate guard and secure with setscrews, spring and flat washers (items 19, 32 and 31).



- 1 Guard
- 2 M6 rivnut
- 3 M6 spring washer

- 4 M6 flat washer
- 5 M6 setscrew

MIL0906

Fig 9 Beacon guard

Testing after embodiment

10 Nil

EFFECT ON WEIGHT

11 Additional 75 kg

PUBLICATION AMENDMENTS

NOTE

Necessary amendment(s) will be issued separately.

12 Nil

**TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION No 14**

Sponsor:

DGES(A) ES52
File ref: D/DGES(A) 548/3/4

Publication Agency:

ATSA Chertsey
Project No:ES52c/4356
File ref: DE/CH/4118C/LVG

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Fitting of the shower proof dash cover.

(Approval No LSTP 12-6671)

INTRODUCTION

1 This instruction details the fitting of the Shower Proof Dash Cover

1.1 Limitations on use of equipment. Nil

APPLICABILITY

2 Truck Utility Light (TUL) HS and Truck Utility Medium (TUM) HS vehicles on approval of Equipment Support Manager with vehicles in a stripped condition only.

2.1 Fitted to subject vehicles held by user units.

2.2 Unmodified stock, held at all levels of technical storage.

REASON FOR MODIFICATION

3 Code 2 - to improve operational performance

PRIORITY

4 Army: Routine
RAF: Class 3

ESTIMATED TIME REQUIRED

5 Embodiment: 1.5 man-hours

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.
RAF - Units not later than the next routine maintenance and Vehicles Depots before the next issue of vehicle.

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action: NA

Action required by

7

7.1 Units and establishments holding equipment.

7.1.1 Examine vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary Units with level 2 REME Support demand the stores required.

7.1.3 ARMY - On receipt of stores, request REME to modify equipment.

7.1.4 ARMY - Record the modification subject and AESP number in equipment documents.

7.1.5 RAF - Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADP MTMS job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

7.2 Army units authorised to carry out levels 2,3 and 4 maintenance and RAF units.

7.2.1 ARMY - When requested by users or during overhaul of equipments on charge without REME level 2 Support, obtain the items listed in Para 8 and carry out this modification.

7.2.2 RAF – On receipt of stores, embody modification..

7.2.3 Record completion details of modification against appropriate entry in equipment documents.

7.2.4 Complete AF G1084A when reporting completion of the modification to FORWARD (RAF) using the following code:

RAF: MODIFICATION CODE AFN 163

NOTE

RAF units operating STAMA are also to complete ADP MTMS Job Certification Sheet and to follow the procedures laid down in 100C-08A.

7.3 All recipients of this instruction. Add particulars to AESP 2320-D-128-811 Mod Instr Index.

Stores tools and equipment

8

8.1 Stores to be demanded.

8.1.1 The following items set are/is to be demanded quoting this instruction authority for demand.

Item No	DMC	NSN/Part No	Designation	Qty Per eqpt
			Mod set: comprising:	1
1		F8617	Cover, dash, shower proof	(1)
2		RRC3966	Staple	(4)
3		78248	Rivets	(8)

Sequence of operations

NOTE

The main numbers of Para 8 are used as references throughout this instruction.

CAUTION

When attaching staples to the scuttle, ensure that there is no item of equipment or electrical cabling attached or near to the area where the staple will penetrate through to the other side.

9 Carry out the modification as follows:

Refer to Fig 1

9.1 Release the bonnet catch and raise the bonnet (refer to Cat 201 Chap 2-1).

NOTE

When the cover is not fitted to the Weapons Mounted Installation Kit (WMIK) ensure that the sock is firmly closed.

9.2 Place the shower proof dash cover (refer to item 1) onto the vehicle ensuring that the sock goes over the wire cutter bracket (WMIK only) and the Velcro strap is attached under the steering column.

Refer to Fig 2

9.3 With the bonnet raised, tuck the cover in between the bonnet and front scuttle ensuring that that all apertures line up with the appropriate part.

Refer to Fig 1

9.4 Place staple (refer to item 2) over the long strap hanging down and locate it onto the scuttle.

9.5 Drill 5 mm dia hole using the staple as a guide and attach to scuttle with pop rivet (refer to item 3).

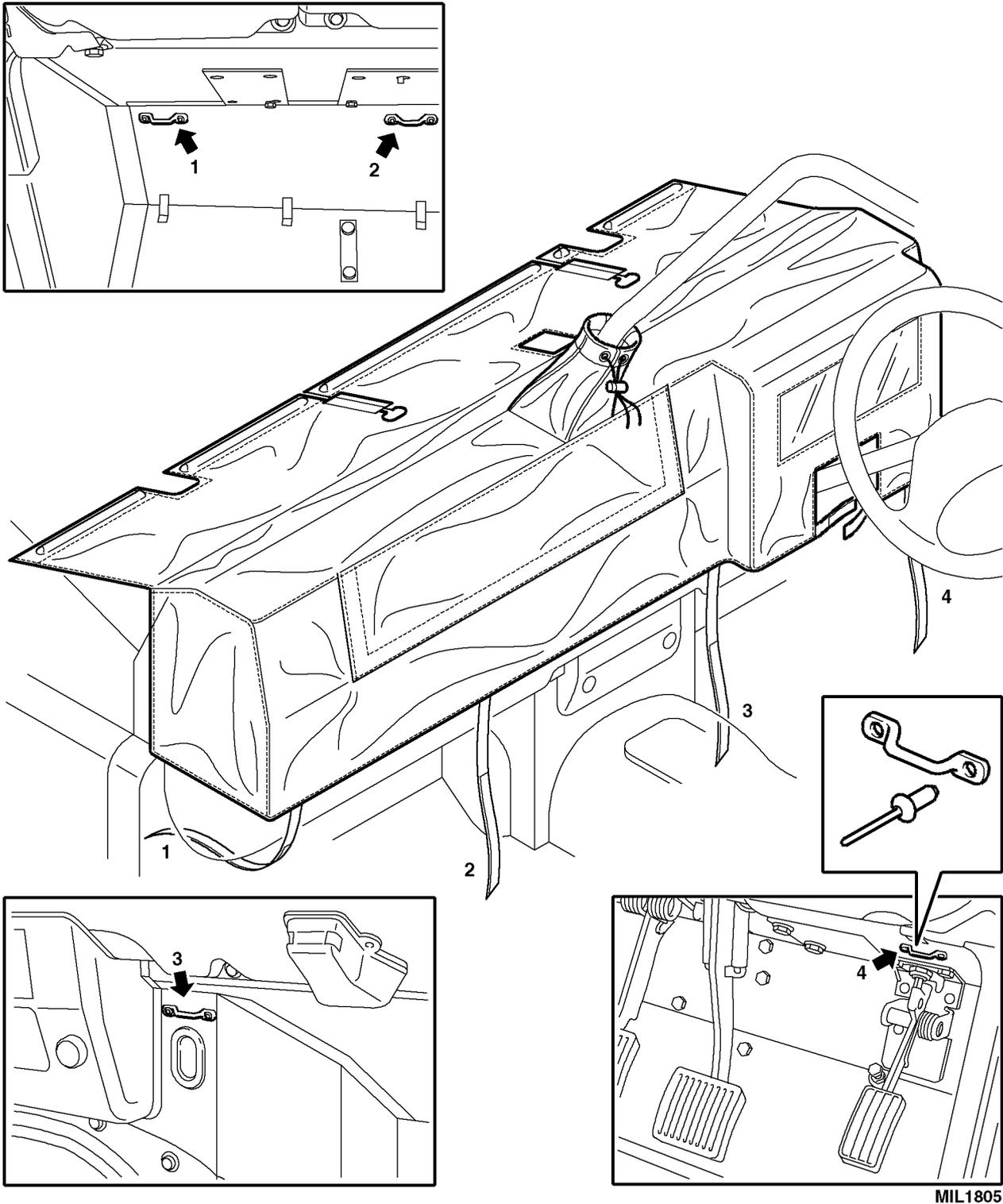


Fig 1 Fitting Shower proof cover

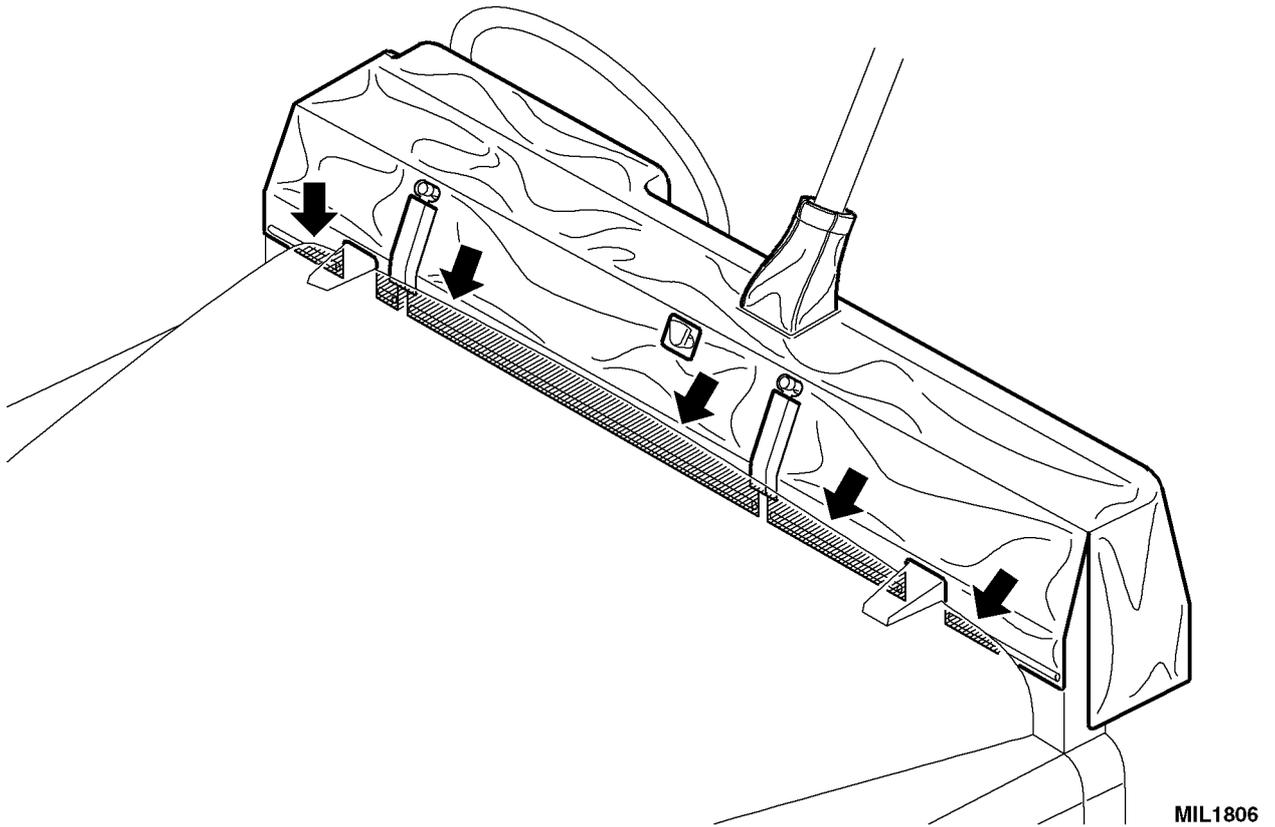


Fig 2 Locating cover under bonnet

Testing after embodiment

10 Nil/

EFFECT ON WEIGHT

11 Negligible/

PUBLICATION AMENDMENTS

NOTE

Necessary amendment(s) will be issued separately. (delete as necessary).

12 Nil/

**TRUCK UTILITY LIGHT (TUL) HS TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS**

MODIFICATION INSTRUCTION No 15

SUBJECT: Fitting of (TUM) Ambulance blower motor suppression kit. (Approval No LSTP 12-6672)

CANCELLATION

INTRODUCTION

1 Modification Instruction No 9 dated May 00 is hereby cancelled. The fitting of the blower motor suppression kit to (TUM) Battle Field Ambulance vehicles is now no longer required.

ACTION

2 File this Page 1/2 in place of Modification Instr No 15 dated May 00, all pages of which are to be destroyed.

**TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION No. 16**

Sponsor:

CSV(Sp) IPT

Publication Agency:

Defence Logistics Organisation
Project No: LLVUty-20

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date
1		
2		
3		

Amdt No.	Incorporated By (Signature)	Date
4		
5		
6		

SUBJECT: Radio battery isolation switch and power import/export system.
(Approval No LSTP 12-6673)

INTRODUCTION

1 This instruction details the fitting of the Radio battery isolation switch and power import/export system to both Truck Utility Light (TUL) HS FFR and Truck Utility Medium (TUM) HS FFR vehicles.

1.1 Limitations on use of equipment. Nil

APPLICABILITY

2 Truck Utility Light (TUL) HS FFR and Truck Utility Medium (TUM) HS FFR vehicles to be fitted with the Radio battery isolation switch and power import/export system as authorised by AMLC.

2.1 Fitted to equipment held by user units.

REASON FOR MODIFICATION

3 Code 2 – To improve operational performance.

PRIORITY

4 Army: Routine
RAF: Class 3

ESTIMATED TIME REQUIRED

5 Embodiment: 2 man hrs.

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.

RAF - Units not later than the next routine maintenance and Vehicle Depots before next issue of vehicle.

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action. N/A

ACTION REQUIRED BY

7

7.1 Units and establishment holding equipment.

7.1.1 Examine vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary units with level 2 REME support demand the stores required.

7.1.3 ARMY – on receipt of stores, request REME to modify equipment.

7.1.4 ARMY – Record the modification, subject and the AESP number in equipment documents.

7.1.5 RAF – Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADPMTMS job certification sheet and to follow the procedures laid down in AP 100C - 08A.

7.2 Army units authorised to carry out levels 2, 3 and 4 maintenance and RAF units.

7.2.1 ARMY – When requested by users or during overhaul of equipment on charge without REME level 2 support, obtain the items listed in Para. 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.2.3 Complete AF G1084A when reporting completion of modification to FORWARD (RAF) using the following code.

RAF MODIFICATION CODE: AFN 166

NOTE

RAF units operating STAMA are also to complete ADP MTS job certification sheet and to follow the procedures laid down in 100C - 08A.

7.3 All receipts of this instruction. Add particulars to AESP ref. 2320-D128-811 Mod instr. index.

Stores tools and equipment

NOTE

Items not codified, if required, should be demanded using the manufacturer's part numbers through the normal system.

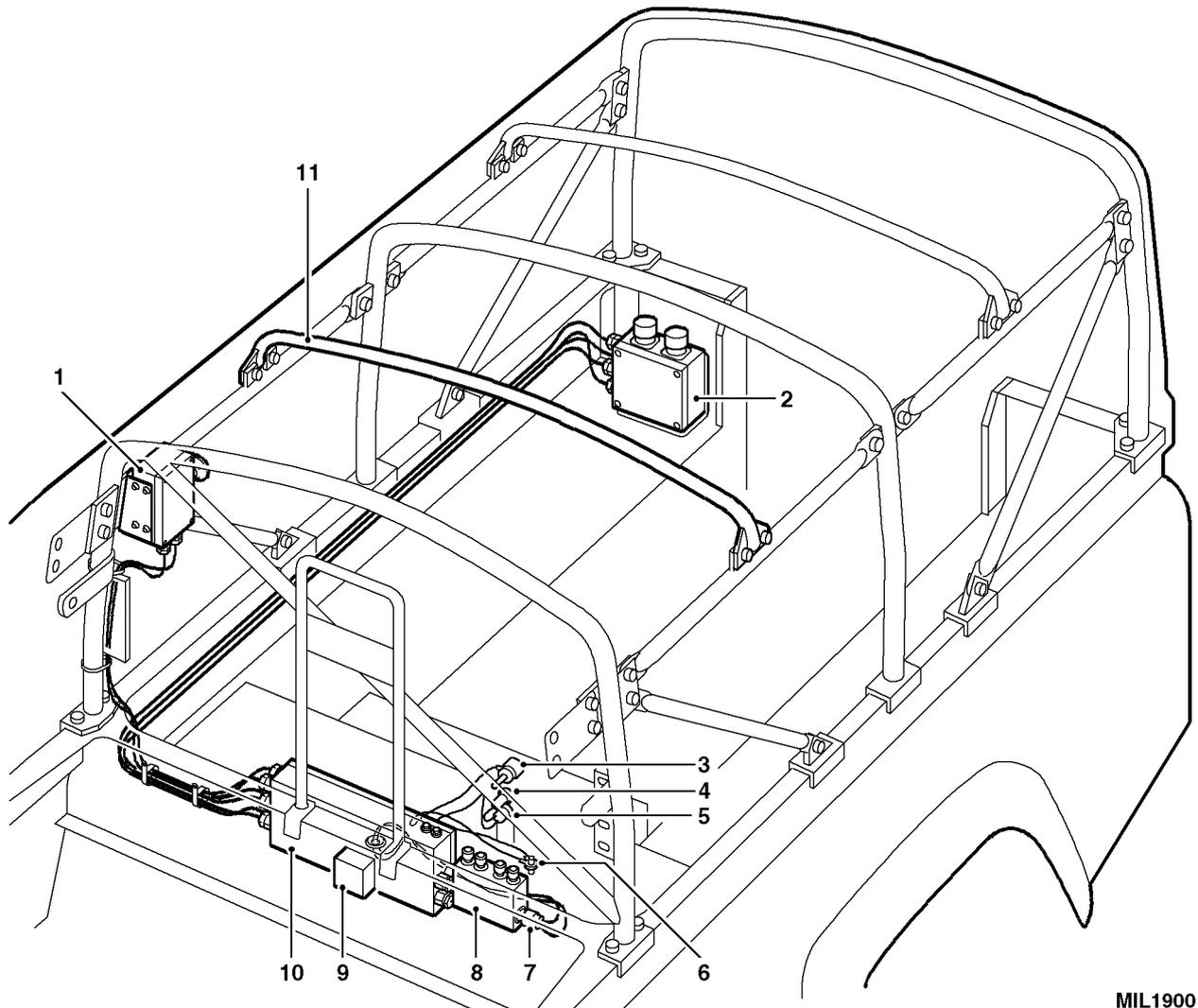
8

8.1 Stores to be demanded.

8.1.1 The following set is to be demanded quoting this instruction authority.

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
	7RU	5998-99-6161501	Radio battery isolation switch & import/export system (TUL).	1
	7RU	5998-99-1272738	Radio battery isolation switch & import/export system (TUM).	1
	7RU	5925-99-4613819	Radio battery isolation switch & import/export system (TUL) – Winter/water.	1
	7RU	5925-99-9188132	Radio battery isolation switch & import/export system (TUM) – Winter/water. Comprising: Isolation switch Mounting Kit comprising:	1
1		34166-041	Mounting bracket	(1)
2			M4 x 12 Hex hd Screw	(4)
3			M4 Nylock nut	(4)
4			M4 Plain washer	(4)
5		34166-096	Releasable cable tie Relay box Mounting Kit comprising:	(2)
6			M6 Nutsert	(4)
7			M6 x 45 cap hd screw	(4)
8			M6 spring washer	(4)
9		34166-061	Spacer (upper mounting)	(2)
10		34166-062	Spacer (lower mounting) Cable to bulkhead securing kit comprising:	(2)
11			'P' clip (rubber lined)	(2)
12			M6 nutsert	(2)
13			M6 spring washer	(2)
14			M6 x 16 hex hd screw	(2)
			Terminal box connection kit (not Winter Water) Comprising:	
15		34166-057	Grommet	(1)

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
16			Identification sleeve '+VE'	(1)
17			6mm Insulated red ring terminal	(1)
			Import/export power box mounting kit comprising:	
18			M6 nutsert	(4)
19		34166-056	Mounting bracket	(1)
20			M6 x 25 hex hd screw	(4)
21			M6 spring washer	(4)
22			M4 x 20 cheese hd screw	(4)
23			M4 spring washer	(4)
24		34166-071	Buzzer and test switch assembly	(1)
25		34166-095	Label	(1)
			Additional parts - Winter Water only	
26		34166-106	Clamp - Isolation switch to hood stay	(2)
27			M5 x 40 hex hd screw	(2)
28			M5 plain washer	(2)
39			M5 Nylock nut	(2)
30			M4 x 20 cheese hd screw	(4)
31			M4 plain washer	(4)
32			M4 Nylock nut	(4)
33		IPU100160	Support bracket - relay box to bulkhead	(2)
34			M6 x 16 hex hd screw	(3)
35			M6 nutsert	(4)
36			M6 spring washer	(5)
37			M6 nut	(2)
38		34166-096	Releasable cable ties	A/R



MIL1900

- | | | | |
|---|--------------------------|----|--------------------|
| 1 | Battery isolation switch | 7 | Battery power lead |
| 2 | Power Import/export box | 8 | Terminal box |
| 3 | Battery box terminal | 9 | Fast fuse |
| 4 | Buzzer | 10 | Relay box |
| 5 | Test button | 11 | Forward hood stay |
| 6 | Battery box terminal | | |

Fig 1 Battery isolation switch and power import/export system
(illustration shows system fitted to non waterproofed vehicles)

Sequence of operations

NOTES

- (1) The item numbers in Para 8 are used as references throughout this instruction
- (2) All Dimensions are in Millimetres

9 Carry out the modification as follows:

WARNINGS

1. HEALTH AND SAFETY. WEAR THE APPROPRIATE SAFETY GOGGLES DURING DRILLING OPERATIONS.

2. HEALTH AND SAFETY. BATTERIES CONTAIN SULPHURIC ACID, WHICH IS BOTH CORROSIVE AND POISONOUS. IF SPILLAGE OCCURS ONTO CLOTHING OR SKIN, SEEK MEDICAL ATTENTION IMMEDIATELY.

- 9.1 Park vehicle on a level surface and apply hand brake.
- 9.2 Switch off engine and remove ignition key.
- 9.3 Disconnect the vehicle batteries.
- 9.4 From inside the rear of the vehicle remove the right hand radio operators seat.

NOTE

This installation is supplied with its main components already wired together. The relay box will require wiring into the vehicle's electrical system via the terminal box and fast fuse and the existing Ammeter harness requires a small modification before refitting to the system.

- 9.5 Battery isolation switch assembly (All vehicles except Winter/water with bag)

Refer to Fig 2

- 9.5.1 Remove the existing nuts and washers from the two fixings securing the cant rail tie bars to the forward roll protect hoop on the right hand side of the vehicle. Move the Radiated Hazard Curtain (if fitted) aside to give access.

NOTE

If a Radiated Hazard Curtain is fitted note the position and orientation of the spacers securing the curtain to the tie bar bracket.

- 9.5.2 Fit the mounting bracket (item 1) and secure to the roll protect hoop bracket with the existing nuts and washers.

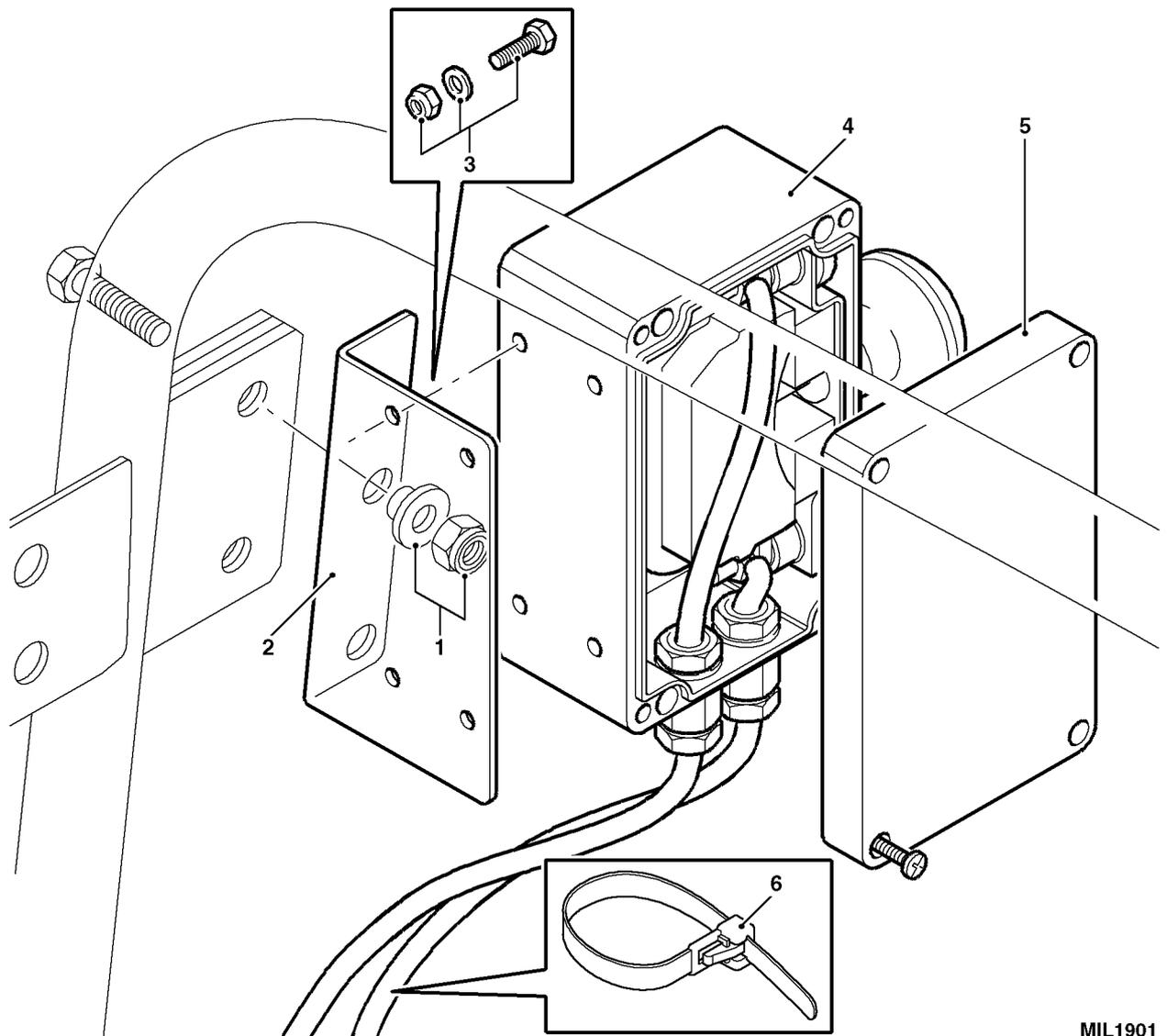
NOTE

The Radiated Hazard Curtain (if fitted) also uses the upper fixing point on the cant rail tie bar bracket and must be refitted to the vehicle at this point before the isolation switch is secured to the mounting bracket. Ensure the spacers are fitted correctly.

- 9.5.3 Remove the cover from the isolation switch and secure switch box to the mounting bracket using the four screws (item 2), washers (item 4) and nylock nuts (item 3).

9.5.4 Refit the cover to the isolation switch.

9.5.5 Run the wiring harness from the isolation switch down the forward roll protect hoop and secure with two releasable cable ties (item 5).



MIL1901

- | | | | |
|---|---------------------------|---|-----------------------|
| 1 | Cant rail tie bar fixings | 4 | Isolation switch |
| 2 | Mounting bracket | 5 | Cover |
| 3 | Isolation switch fixings | 6 | Releasable cable ties |

Fig 2 Fitting the battery isolation switch assembly

9.6 Battery isolation switch assembly (Winter/water with bag)

Refer to Fig 3

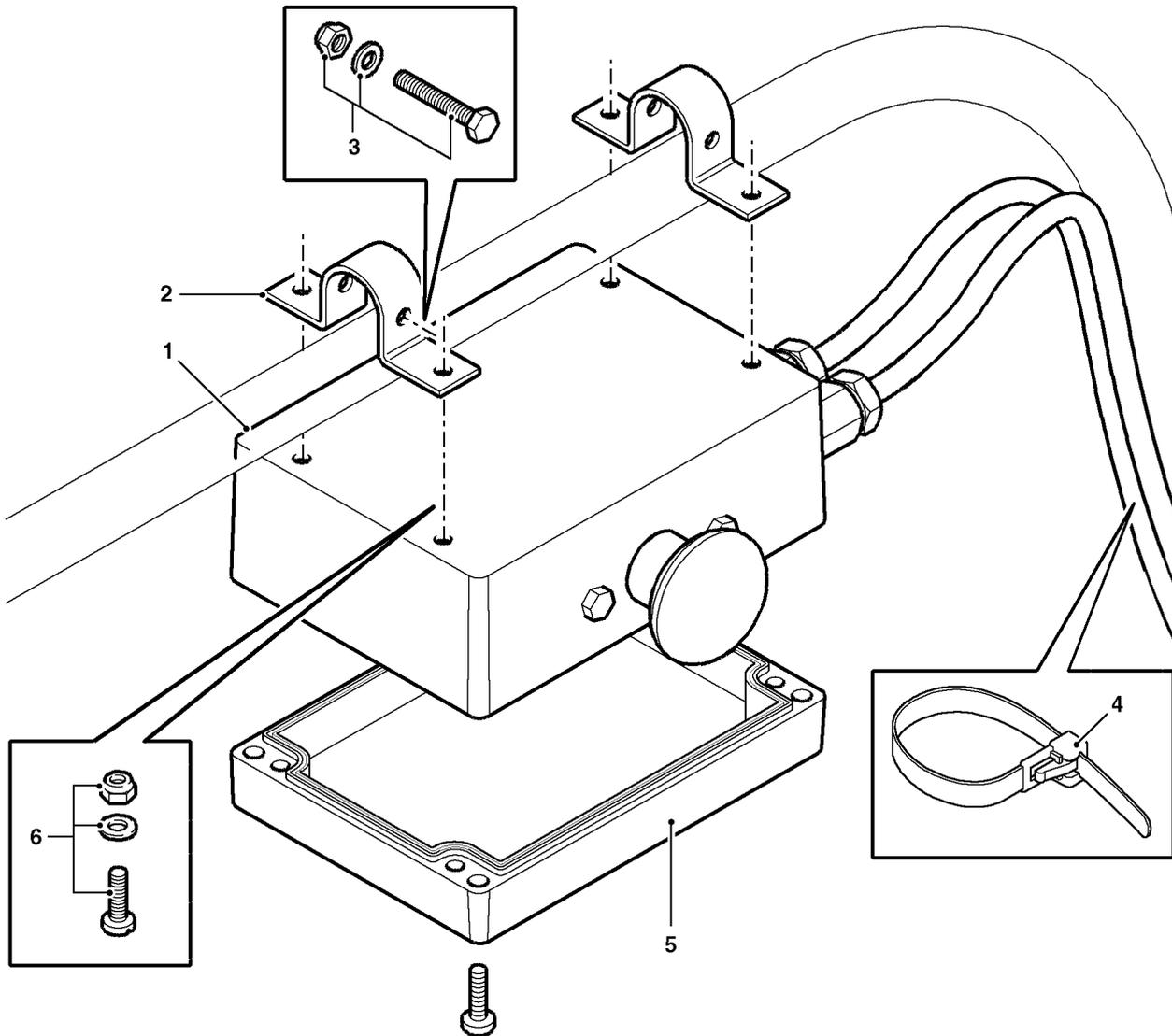
9.6.1 Remove the cover from the isolation switch.

9.6.2 Place the clamp hood stays (item 26) over the top of the forward hood stay and using the four screws (item 30), washers (item 31) and nylock nuts (item 32), secure the switch box to the forward hood stay as shown in Fig 3.

9.6.3 Drill two 5.5mm dia holes through the forward hood stay using the holes in the clamps as a guide and secure the clamps to the forward hood stay using the two screws (item 27), washer (item 28) and Nylock nut (item 29).

9.6.4 Refit the cover to the isolation switch.

9.6.5 Secure the wiring harness to the roll protect bar with 3 releasable cable ties (item 38).



MIL1982

- | | | | |
|---|--------------------------|---|--------------------------|
| 1 | Isolation switch | 4 | Releasable cable ties |
| 2 | Clamp hood stay | 5 | Cover |
| 3 | Roll protect bar fixings | 6 | Isolation switch fixings |

Fig 3 Fitting the battery isolation switch assembly (Winter/water with bag)
(see Fig 5 for position of battery isolation switch)

9.7 Relay box assembly (Non Winter/water vehicles)

Refer to Fig 4

9.7.1 Mark out the position and drill four 7mm dia holes through the bulkhead next to the terminal box as detailed in Fig 4 (or Fig 6 for waterproofed without bag), and open up to 10mm dia.

9.7.2 Deburr and fit nutserts (item 6) using a suitable tool.

9.7.3 Remove the cover and align the relay box with the holes. Secure to the bulkhead using the four cap head screws (item 7) and washers (item 8) ensuring the spacers (items 9 and 10) are located between the rear of the box and the bulkhead.

NOTE

The thicker spacers (item 10) are fitted to the lower fixings.

9.7.4 Fit two 'P' clips (item 11) over the harness from the isolation switch and power import/export box with the fixing holes uppermost and position them equidistantly between the RH vehicle side and the relay box.

9.7.5 Mark the position of the holes on the bulkhead ensuring they line up and will support the harness in a straight line across the bulkhead.

9.7.6 Drill two 7mm dia holes through the bulkhead, open up to 10mm and fit nutserts (item 12) using a suitable tool.

9.7.7 Secure the 'P' clips to the bulkhead with washers (item 13) and screws (item 14).

9.8 Relay box assembly (Winter/water with bag)

Refer to Fig 5

9.8.1 Secure the two support brackets (item 33) to the relay box using nuts (item 37), spring washers (item 36) and M6 x 45 cap head screws (item 7).

9.8.2 Position the relay box on the bulkhead as shown in Fig 5 and drill two 7mm holes through the bulkhead using the support brackets as a guide, open up to 10mm.

9.8.3 Deburr and fit nutserts (item 35) using a suitable tool.

9.8.4 Secure the relay box to the bulkhead using the two support brackets and two screws (item 34) and spring washers (item 36).

9.8.5 Remove the relay box cover and drill two 7mm holes through the bulkhead using the lower fixing holes as a guide. Remove the relay box.

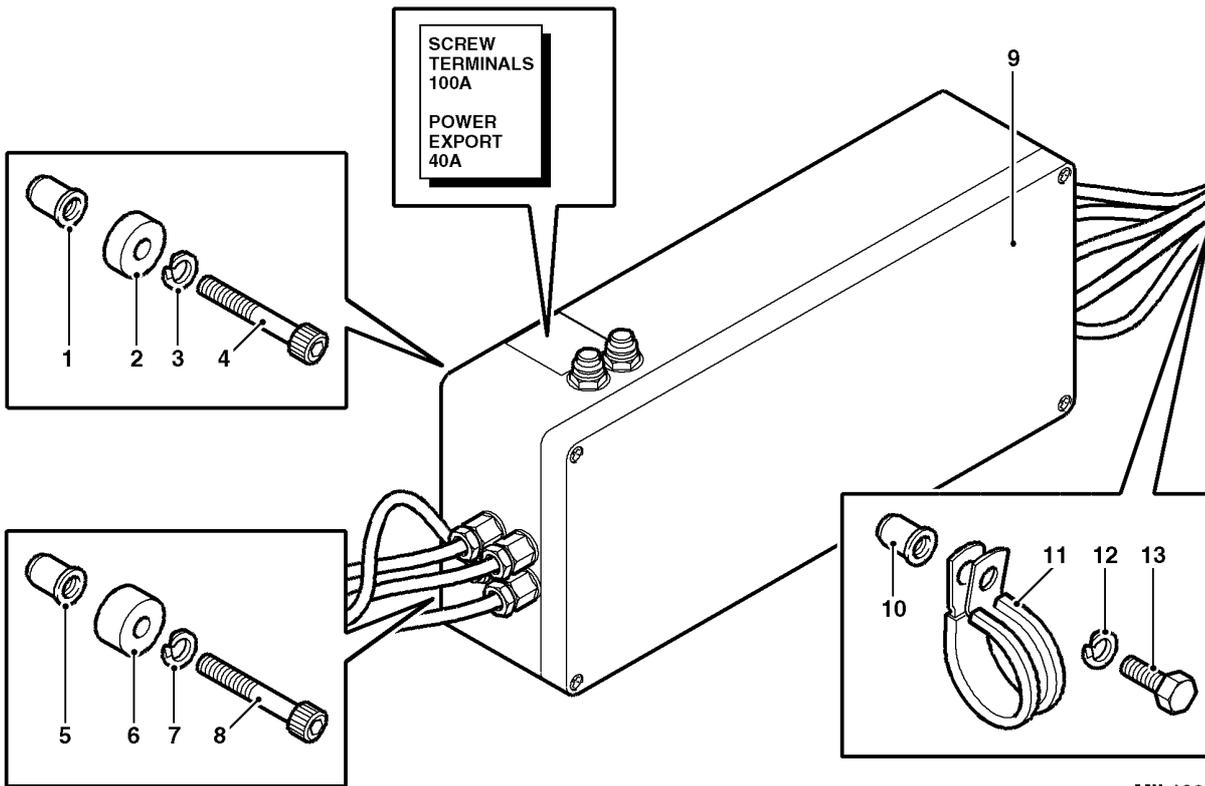
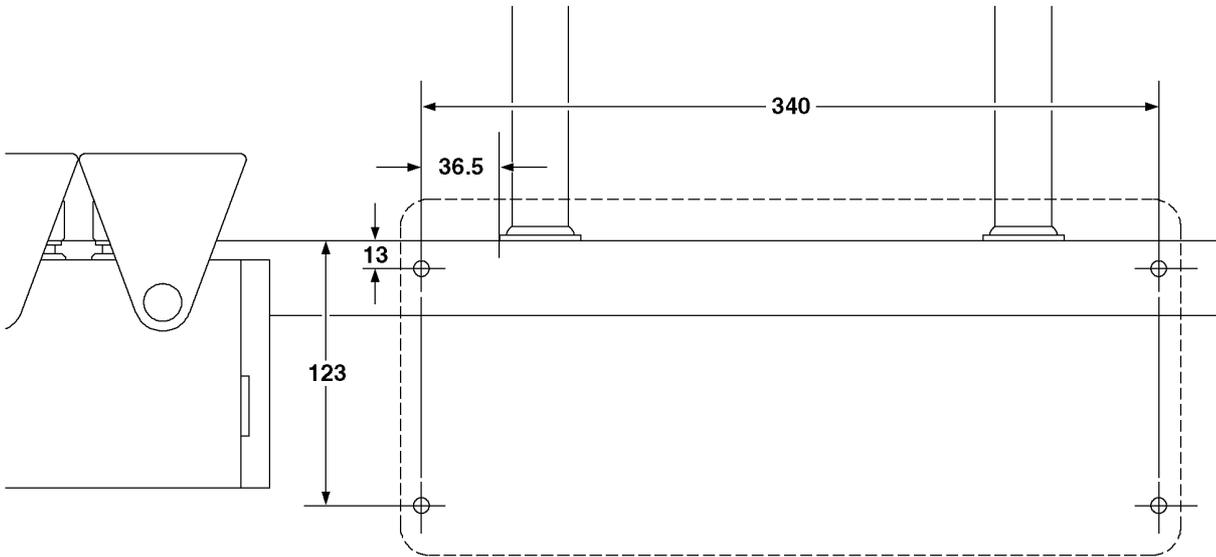
9.8.6 Open up the two 7mm holes to 10mm. Deburr and fit nutserts (item 35) using a suitable tool.

9.8.7 Secure the relay box to the bulkhead using fixings listed at Para 9.8.4 for top fixings and two cap head screws (item 7) and washers (item 36) ensuring that the spacers (item 10) are located between the rear of the box and the bulkhead.

9.8.8 Drill a 7mm hole through the bulkhead between the gun clips as shown in Fig 5, open up to 10mm and fit nutserts (item 12) using a suitable tool.

9.8.9 Secure the 'P' clip (item 11) to the bulkhead with washer (item 13) and screw (item 14). Secure cables through 'P' clips.

9.8.10 Repeat the above steps and fit a second 'P' clip on the other side of the relay box. Secure cables through 'P' clips.



MIL1903

- | | | | |
|---|---------------|----|---------------|
| 1 | Nutsert | 8 | Cap screw |
| 2 | Upper spacer | 9 | Relay box |
| 3 | Spring washer | 10 | Nutsert |
| 4 | Cap screw | 11 | 'P' clip |
| 5 | Nutsert | 12 | Spring washer |
| 6 | Lower spacer | 13 | Screw |
| 7 | Spring washer | | |

Fig 4 Fitting the relay box assembly to non waterproofed vehicles

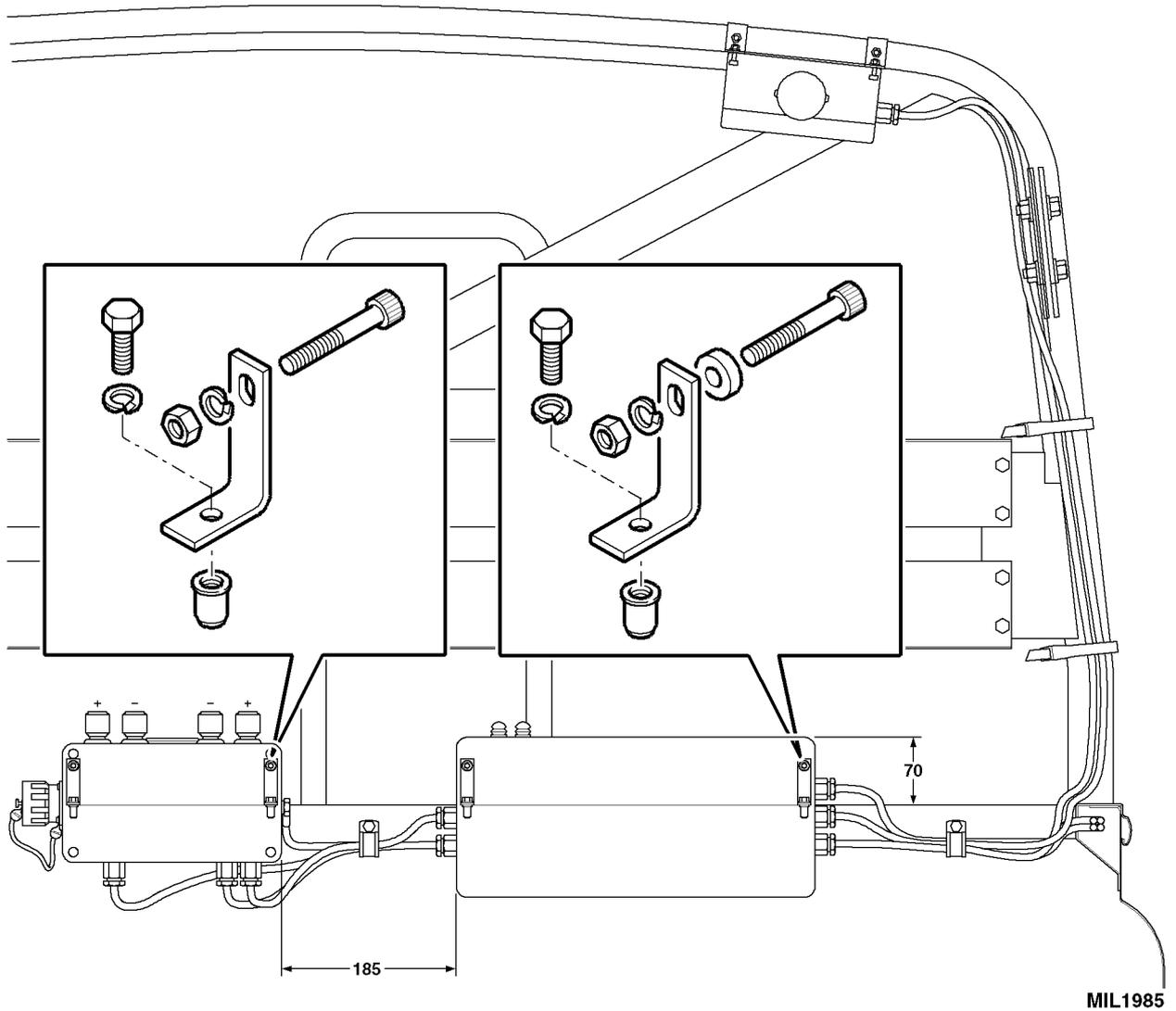
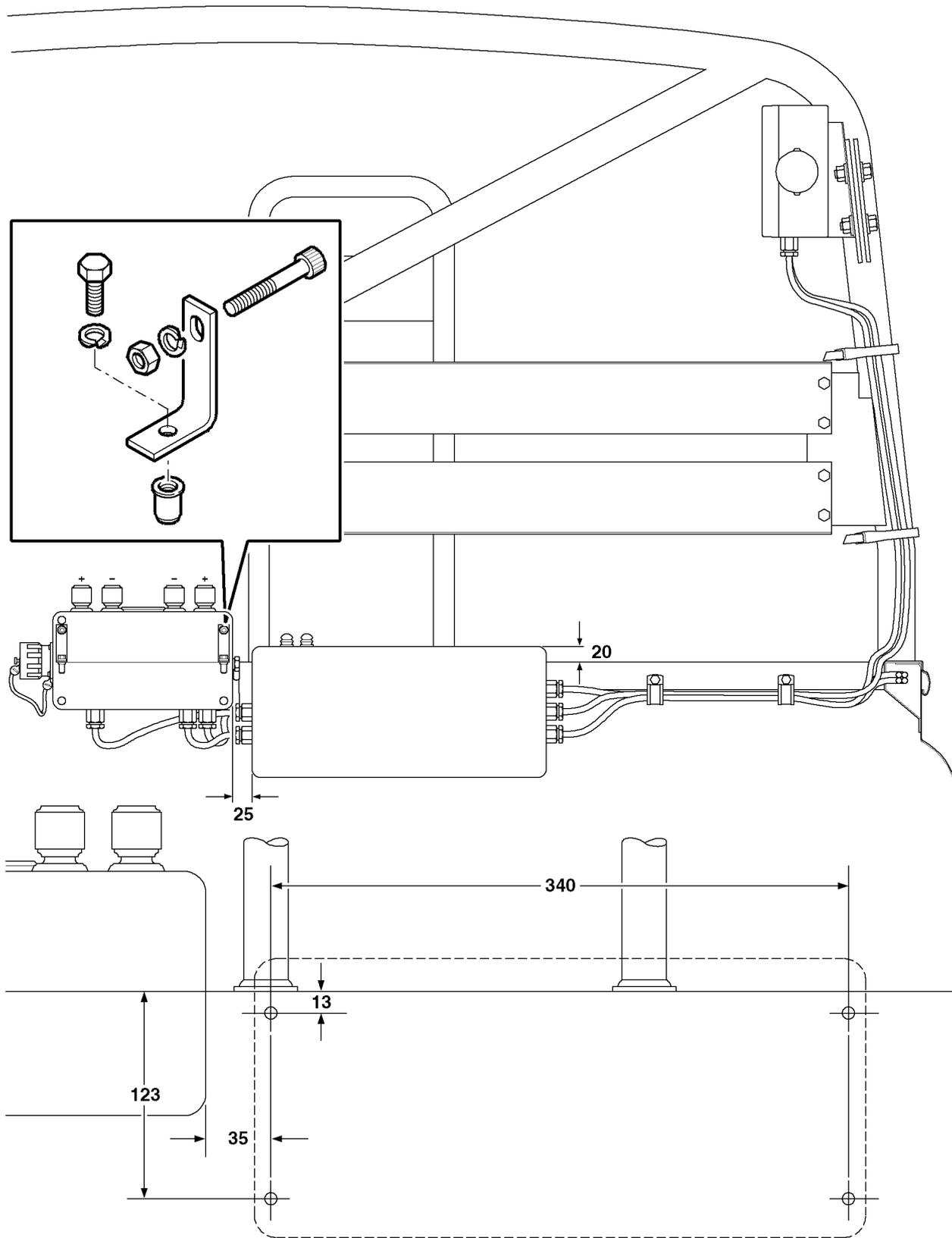


Fig 5 Fitting the relay box and terminal box assemblies (Winter/water with bag)



MIL1986

Fig 6 Fitting the relay box and terminal box assemblies (Winter/water without bag)

9.9 Relay box assembly (Winter/water without bag)

Refer to Fig 6

9.9.1 Repeat the steps in Paras 9.7.1 to 9.7.7 inclusive and fit the relay box in the position shown in Fig 6.

9.10 Terminal Box assembly (Non Winter/Water)

Refer to Fig 7

9.10.1 Disconnect radio battery power lead from terminal box.

9.10.2 Remove cover from fast fuse on bulkhead (cab side).

9.10.3 Remove existing cable between the fast fuse and terminal box and the existing link cable to the positive terminal inside the terminal box as shown by dotted lines in Fig 7.

9.10.4 Remove the blank grommet from the side of the terminal box and replace it with the new grommet (item 15).

9.10.5 Wire the cables from the relay box into the terminal box as shown in Fig 7.

9.10.5.1 Pass the cable from gland 'A' through the new grommet and back out through the existing grommet on the bulkhead and connect to the fast fuse terminal on the drivers cab side of the bulkhead as shown.

9.10.5.2 Pass the cable from gland 'B' through the new grommet and connect to the positive (red) terminal in the terminal box as shown.

9.10.5.3 Pass the cable from gland 'C' through the new grommet and connect to the negative (black) terminal as shown.

9.10.5.4 Pass the cable from gland 'D' through the new grommet and connect to Ammeter shunt terminal as shown.

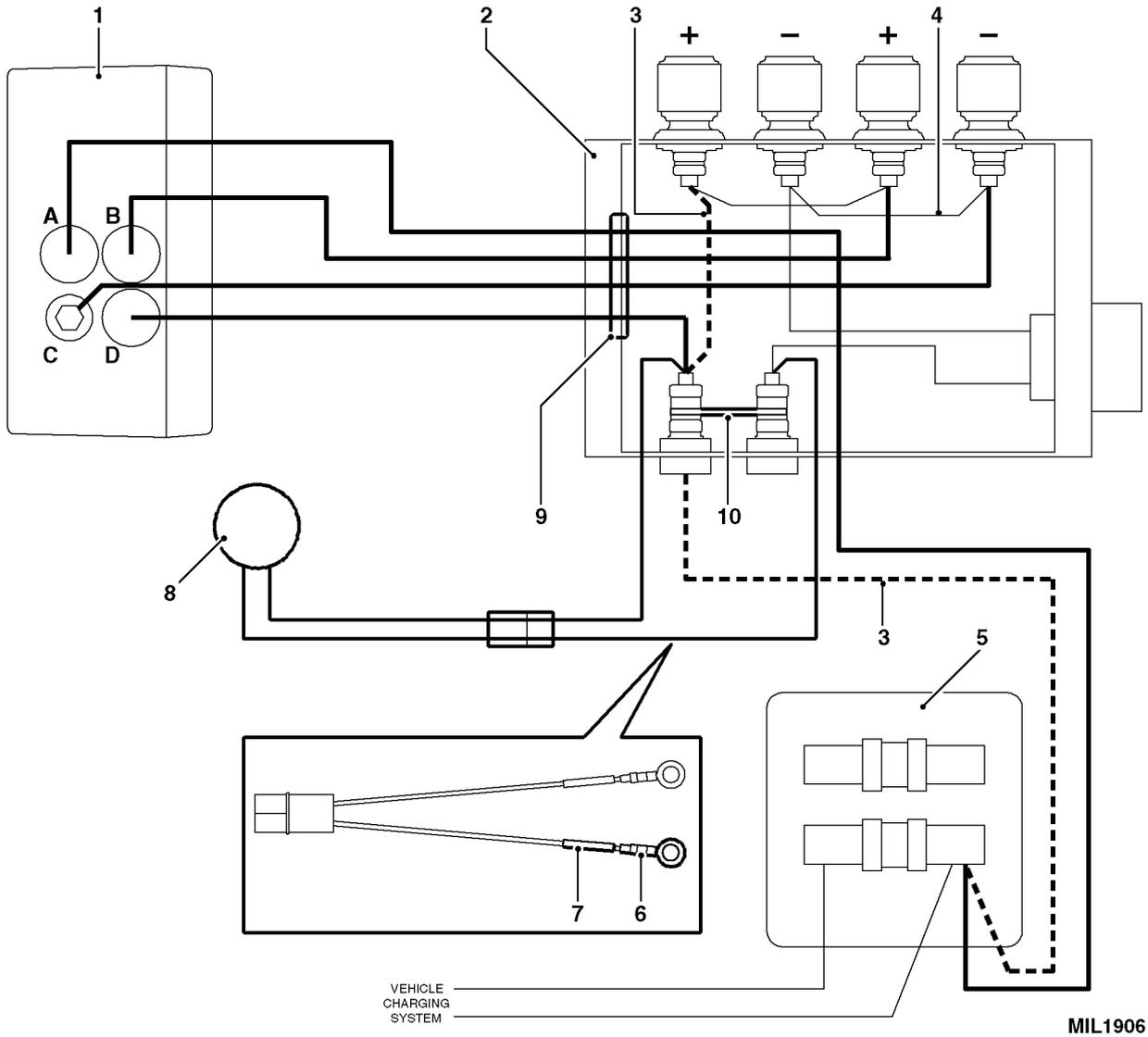
9.10.6 Disconnect and modify the ammeter harness by removing the existing terminal from the BROWN wire and fitting the '+VE' identification sleeve (item 16) and insulated red ring terminal (item 17) using a suitable crimping tool.

9.10.7 Reconnect modified ammeter harness to existing harness. Pass through existing grommet in bulkhead and connect to shunt terminals in terminal box as shown.

9.10.8 Refit terminal box to bulkhead.

9.10.9 Refit radio battery power lead to terminal box.

9.10.10 Refit cover to fast fuse.



MIL1906

- | | | | |
|---|-------------------------------|----|-------------------------------|
| 1 | Relay box | 6 | Ammeter harness ring terminal |
| 2 | Terminal box | 7 | Identification sleeve |
| 3 | Existing cables to be removed | 8 | Ammeter |
| 4 | Existing cables | 9 | Grommet |
| 5 | Fast fuse | 10 | Ammeter shunt |

Fig 7 Wiring up the terminal box (viewed from driver cab side)

9.11 Terminal Box assembly (All Winter/water)

Refer to Fig 8

- 9.11.1 Disconnect both radio battery power lead and charging lead from terminal box connectors.
- 9.11.2 Remove cover from terminal box.
- 9.11.3 Remove fixings securing the terminal box to the bulkhead.

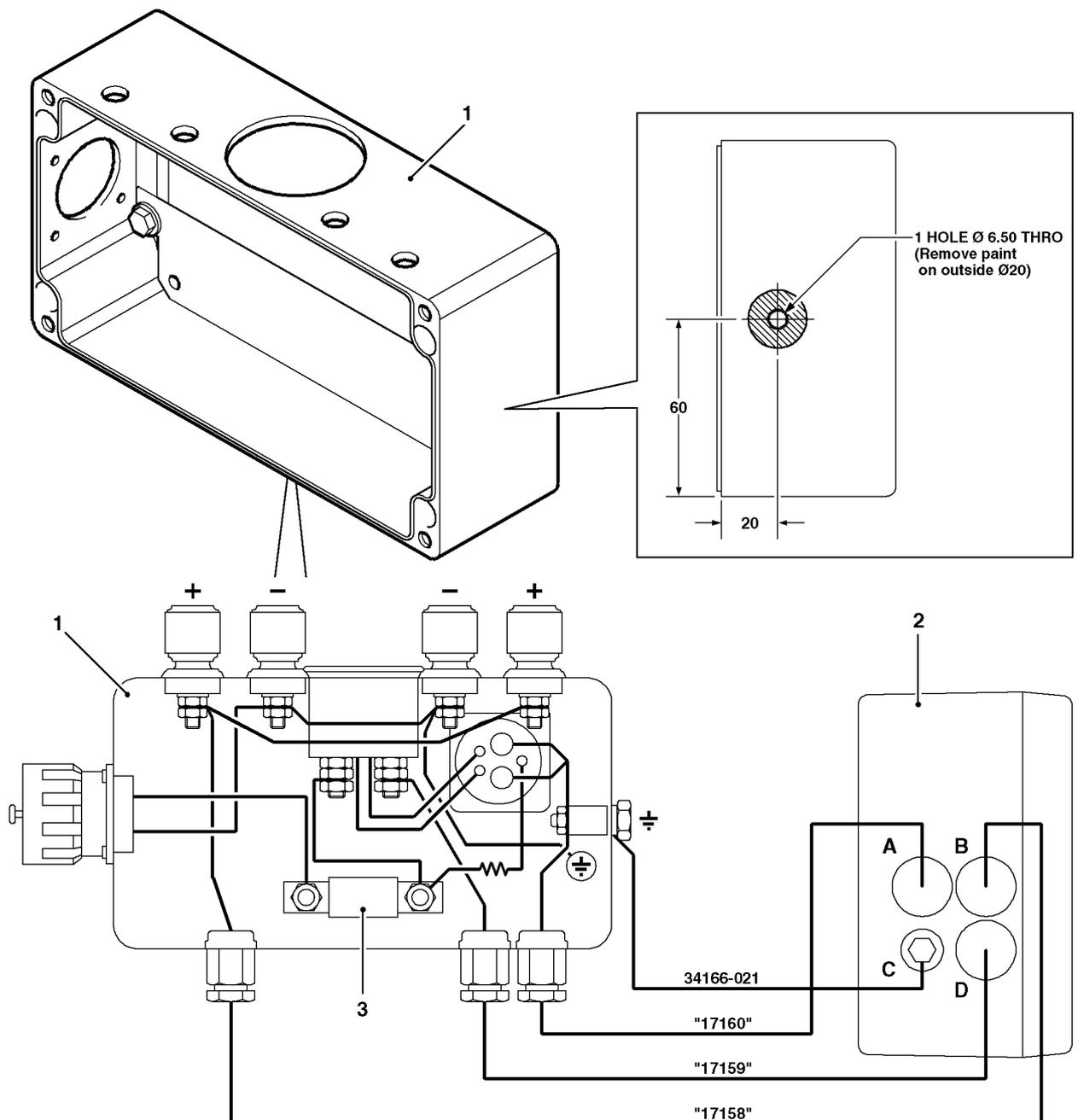
9.11.4 Mark out the terminal box and drill three 17mm dia holes and one 6.50mm dia hole in the positions shown in Fig 8 and remove the paint for a dia of 20mm on outside of the box around the 6.5mm hole.

NOTE

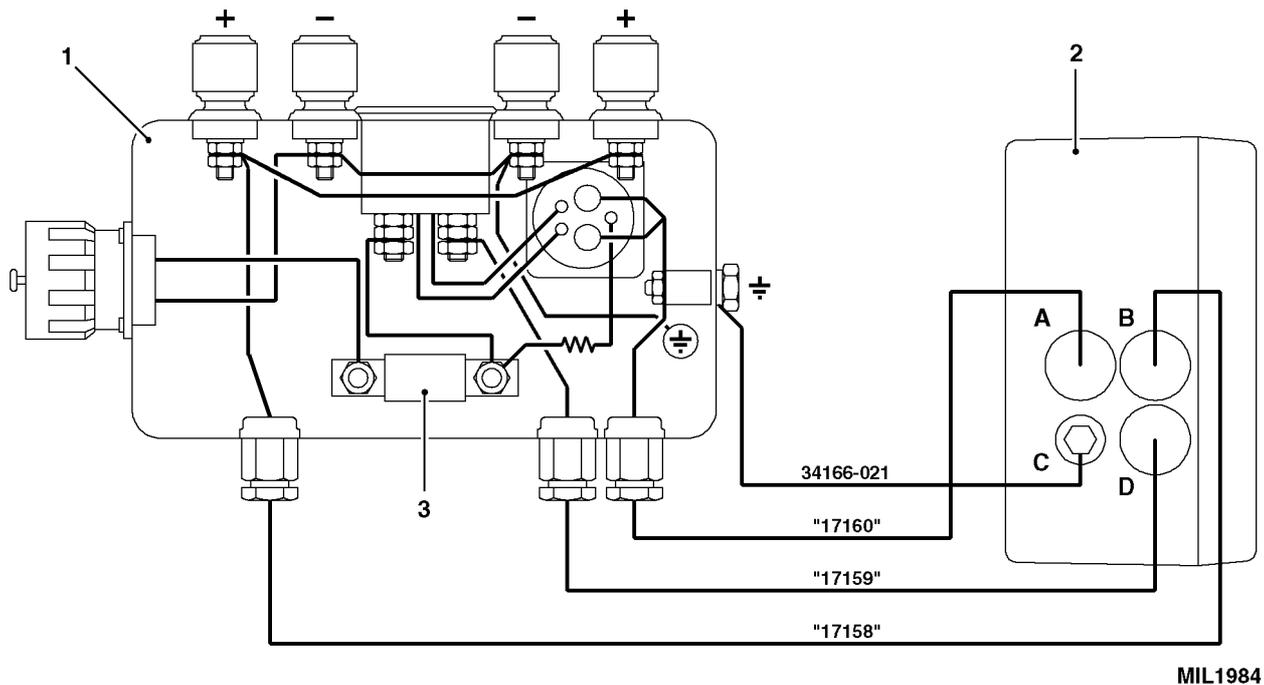
When drilling the terminal box, care must be taken to ensure that no swarf enters the terminal box. Any swarf must be completely removed after drilling.

9.11.5 Remove the cable from the ammeter to RH positive (red) terminal post and discard. Disconnect cable from rear mounted connector to LH terminal post at the terminal post end. Disconnect cable from rear mounted connector to ammeter at ammeter.

9.11.6 Refit the terminal box to the bulkhead as shown in Fig 5 using the original support brackets and fixings.



MIL1984



- | | | | |
|---|-----------------------------|---|------|
| 1 | Terminal box (Waterproofed) | 3 | Fuse |
| 2 | Relay box | | |

Fig 9 Wiring the terminal box to the relay box (Winter/water)

9.11.7 Wire the cables from the relay box into the terminal box as shown in Fig 9 ensuring the cables are passed through the 'P' clip secured to the bulkhead (when fitted) and the cable glands are fitted correctly to the terminal box.

9.11.7.1 Pass the cable from terminal 'C' and connect to the terminal box earth point using M6 x 16 hex head screw (item 34), M6 spring washer (item 38) and insulated post.

9.11.7.2 Pass the cable from gland 'A', ref. '17160' through the first hole in the terminal box to the stud on the new insulated terminal post. Connect the previously disconnected two leads from the rear mounted connector to the insulated terminal post as shown in Fig 9.

9.11.7.3 Pass the cable from gland 'B' ref. '17158' through the third hole in the terminal box and connect to the LH positive (red) terminal in the terminal box as shown in Fig 9.

9.11.7.4 Pass the cable from gland 'D', ref. '17159' through the second hole in the terminal box and connect to the Ammeter terminal as shown.

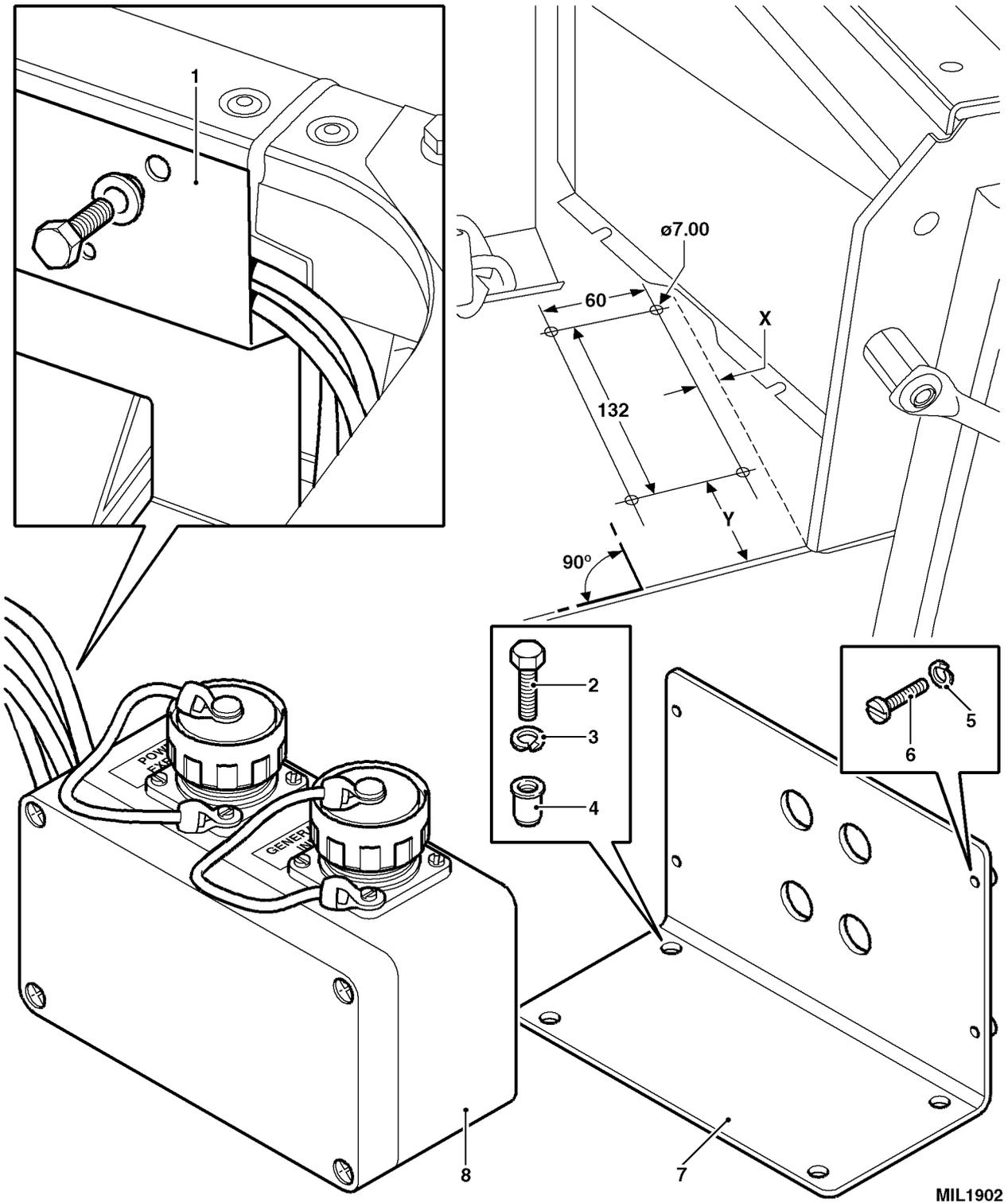
9.11.8 Hide excess cable length inside relay box.

9.11.9 Fit cover to terminal box and reconnect the two connector plugs .

9.12 Power import/export box assembly (All vehicles)

Refer to Fig 10

- 9.12.1 Remove the bolts securing the body side reinforcement panel and move aside the Radiated Hazard Curtain (if fitted).
- 9.12.2 Install cables along the body side channel behind reinforcement panel.
- 9.12.3 Secure body side reinforcement panel ensuring the Radiated Hazard Curtain (if fitted) is secured in the correct locations.
- 9.12.4 Mark the position of the holes for the mounting bracket as shown in Fig 11.
- 9.12.5 Drill four holes 7mm diameter through the seat base and then open up to 10mm.
- 9.12.6 Fit four nutserts (item 18) using a suitable tool.
- 9.12.7 Secure mounting bracket (item 19) to seat base using four screws (item 20) and washers (item 21) supplied.
- 9.12.8 Remove cover to power import/export box and secure box to mounting plate using screws (item 22) and washers (item 23) supplied.
- 9.12.9 Refit cover.



VARIANT	DIM 'X'	DIM 'Y'
NON WINTER WATER	12.5	63
WINTER WATER	39	75

- | | | | |
|---|--------------------------|---|-------------------------|
| 1 | Side reinforcement panel | 5 | Spring washer |
| 2 | Screw | 6 | Screw |
| 3 | Spring washer | 7 | Mounting bracket |
| 4 | Nutsert | 8 | Power import/export box |

Fig 10 Fitting the power import/export box assembly

9.13 Buzzer and test switch assembly (All vehicles)

Refer to Fig 11

NOTE

A lead lamp or torch will be required whilst working in the battery stowage box area.

- 9.13.1 Unscrew the retaining screws securing the battery stowage box cover, ease forward and lift out the cover.
- 9.13.2 Disconnect the radio batteries and remove from under the table.
- 9.13.3 Drill two pilot holes 45mm vertically apart on the centre line of the front support channel, approx. 80mm below the centre of the existing terminal connection.
- 9.13.4 Open holes up to 22mm dia and deburr.
- 9.13.5 Disconnect the buzzer from the buzzer assembly (item 24) and remove the locknut.
- 9.13.6 Remove the locknut from the test switch button.
- 9.13.7 Thread buzzer wiring harness through lower hole and locate switch in hole.
- 9.13.8 Thread locknut over wiring harness and secure the test switch in position.
- 9.13.9 Insert buzzer into upper hole and secure with locknut.
- 9.13.10 Reconnect wiring to the buzzer.
- 9.13.11 Route harness through existing 'P' clips and connect ring terminals ends of harness to existing 8mm dia insulated post and 6mm earth terminals inside battery stowage box (refer to Fig 11).
- 9.13.12 Adhere label (item 25) to inside of battery box door.
- 9.13.13 Refit radio batteries and reconnect.
- 9.13.14 Refit battery box door.
- 9.14 Refit radio operators seats.
- 9.15 Reconnect the vehicle batteries.

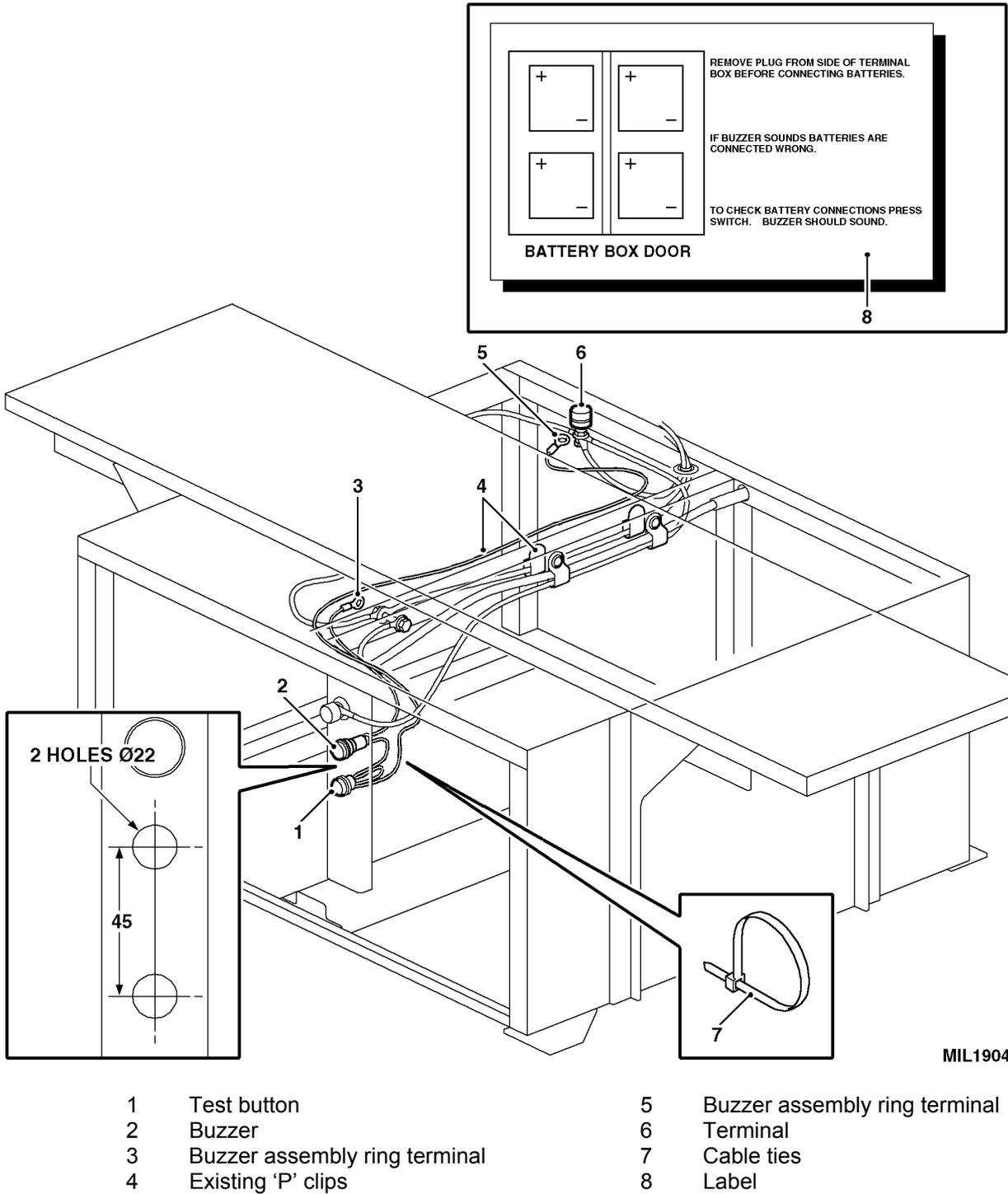


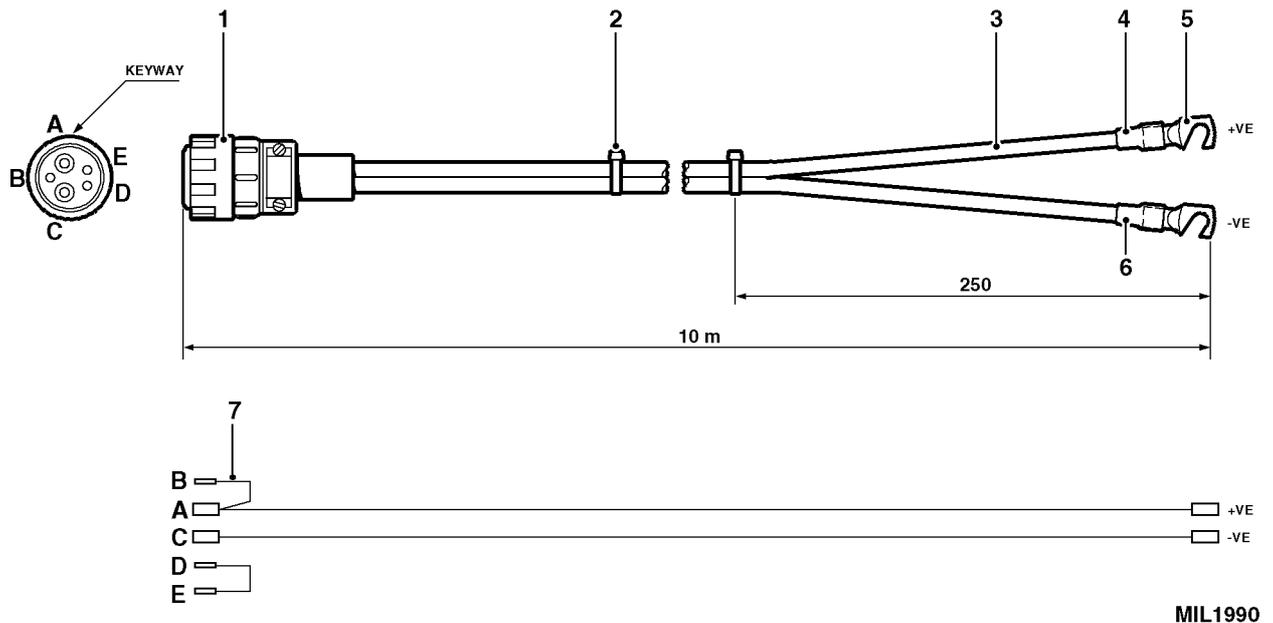
Fig 11 Fitting the buzzer assembly

9.16 Generator connector cable.

9.16.1 For the connection of an external generator a cable can be made up to suit. For parts and manufacturing details refer to Fig 12. A ready assembled cable is available NSN 5995-99-400-7297.

NOTE

On completion of the installation ensure any chips or scratches, particularly on the enclosure boxes are touched in with a suitable black paint to avoid corrosion.



1	Connector (NSN 5935-99-881-9025)	6	Sleeve -ve (Black) (NSN 5975-99-910-7561)
2	Cable tie (every 250mm)	7	Cable 1mm (NSN 6145-99-736-0661)
3	Cable 16mm (NSN 6145-99-999-7727)		
4	Sleeve +ve (Red)		
5	Crimp terminal 6mm (NSN 5940-99-198-7413) 8mm (NSN 5940-99-198-9524)		

Fig 12 Generator connector cable assembly

NOTES

- (1) Socket backshell and sleeve are all part of vehicle end connector.
- (2) With exception of last 250mm, cables should be enclosed in protective 'heat shrink' sheath (NSN 5970-99-301-1802).
- (3) Select the size of crimp terminal (6 or 8mm) to suit the generator type.
- (4) Overall length of cable assembly should not exceed 10m.

TESTING AFTER EMBODIMENT

10 The radio battery isolation systems are tested at the time of manufacture. The following procedures can be performed after installation to ensure the system is functioning correctly.

CAUTIONS

- (1) **Health and Safety. All personnel shall comply with Health and Safety regulations when testing the installation.**
- (2) **High currents can flow under fault conditions, which could result in a fire.**
- (3) **Take care not to short battery supply.**

10.1 TEST CONDITIONS

10.1.1 Ambient temperature -20°C to +30°C.

10.2 REQUIRED TEST EQUIPMENT

10.2.1 24V battery charger fitted with power import plug (refer to Fig 13).

10.2.2 Terminal box load resistor (refer to Fig 14).

10.2.3 Power export load resistor (refer to Fig 15).

10.2.4 Digital Multi Meter (DMM).

10.3 TEST PROCEDURE

NOTES

- (1) The vehicle ammeter reads +/- 100 amps and accurate readings of low current is not possible. This test specification checks the meter indicates in the correct direction only.
- (2) This test procedure assumes the vehicle is fitted with radio batteries that are in a good condition.
- (3) Any radio equipment connected to the terminal box should be disconnected before commencing this procedure.

10.4 Buzzer Installation

10.4.1 Ensure buzzer is not sounding with normal battery connection.

10.4.2 Press test switch and confirm buzzer sounds.

10.5 Ammeter Test

10.5.1 Ensure vehicle ammeter reads zero, Circuit breakers on Relay Box are made, and battery isolation switch is OFF (pushed in).

10.5.2 Start the engine and ensure ammeter indicates the radio batteries are charging. The actual value depends upon the condition of the batteries, but may only be a few amps.

10.6 Terminal box test

10.6.1 With the engine still running connect load resistor tester across terminal box red (+24V) and black (0V) terminals. Connect digital multi meter (DMM) , set to read d.c. volts, to the 4mm sockets on the load resistor box.

10.6.2 Confirm ammeter and DMM read zero.

10.6.3 Pull battery isolation switch ON. Confirm ammeter and DMM show a discharge of 28V +/- 1V.

10.6.4 Push battery isolation switch OFF

CAUTION

Battery isolation switch must only be left on for a few seconds otherwise the load resistor will overheat.

10.6.5 Disconnect terminal box load resistor.

10.7 Power Export Test

10.7.1 Connect power export load resistor to power export connector, with Digital Multi-Meter, set to read dc Volts across load.

10.7.2 Pull battery isolation switch ON. Confirm DMM shows a voltage of 28V +/- 1V.

10.7.3 Push battery isolation switch OFF. Confirm DMM shows 0V.

CAUTION

Battery isolation switch must only be left on for a few seconds otherwise the load resistor will overheat.

10.7.4 Disconnect load from power export connector.

10.8 Power Import Test

10.8.1 Confirm ammeter reads zero.

10.8.2 Connect 24V battery charger to power import connector and switch on.

10.8.3 Confirm ammeter shows batteries are being charged. Reading will depend upon the condition of the batteries.

10.8.4 Switch off battery charger and disconnect from power import connector.

10.8.5 Reconnect any equipment previously connected to terminal box.

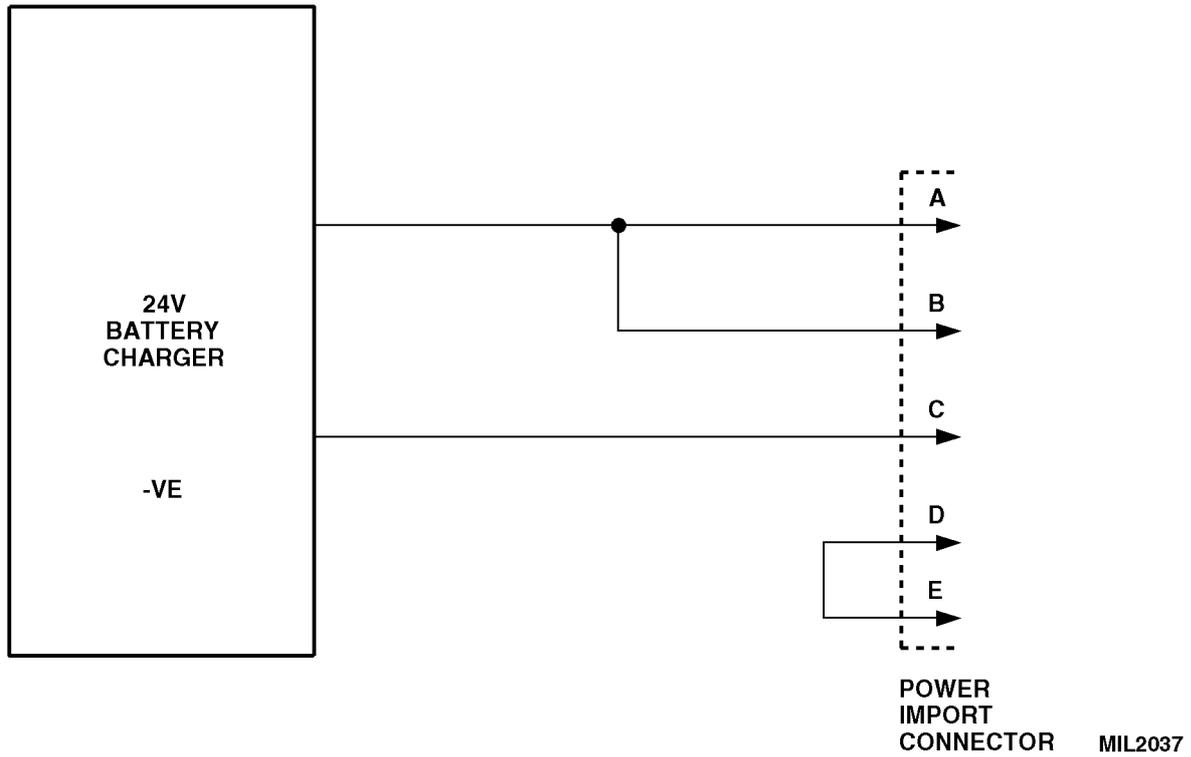


Fig 13 Battery charger wiring

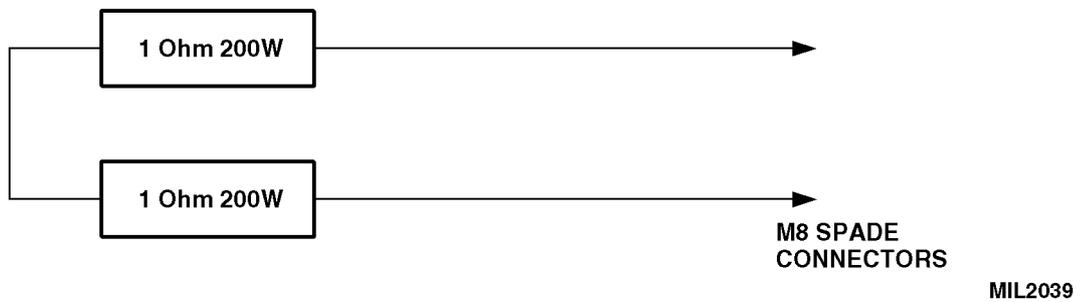
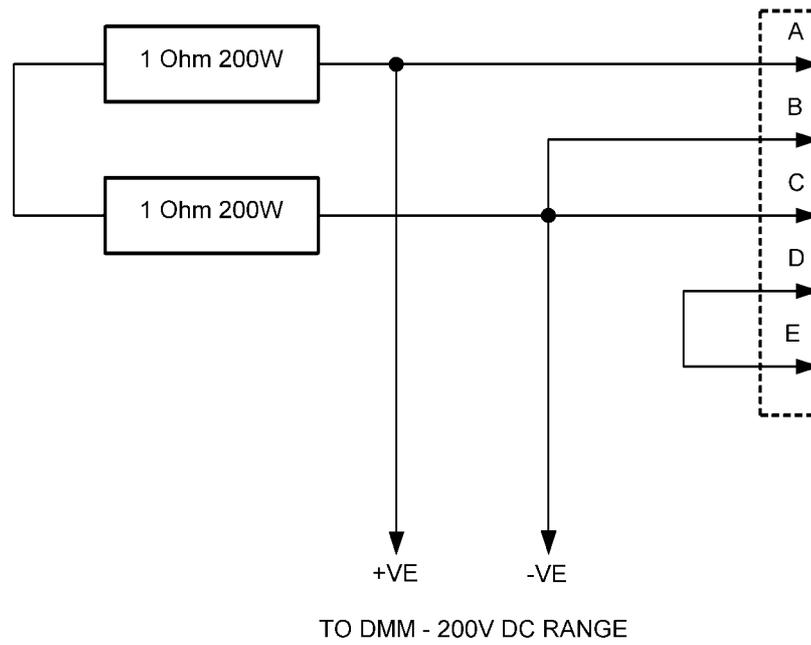


Fig 14 Terminal box load resistor



MIL2038

Fig 15 Power export load resistor

EFFECT ON WEIGHT

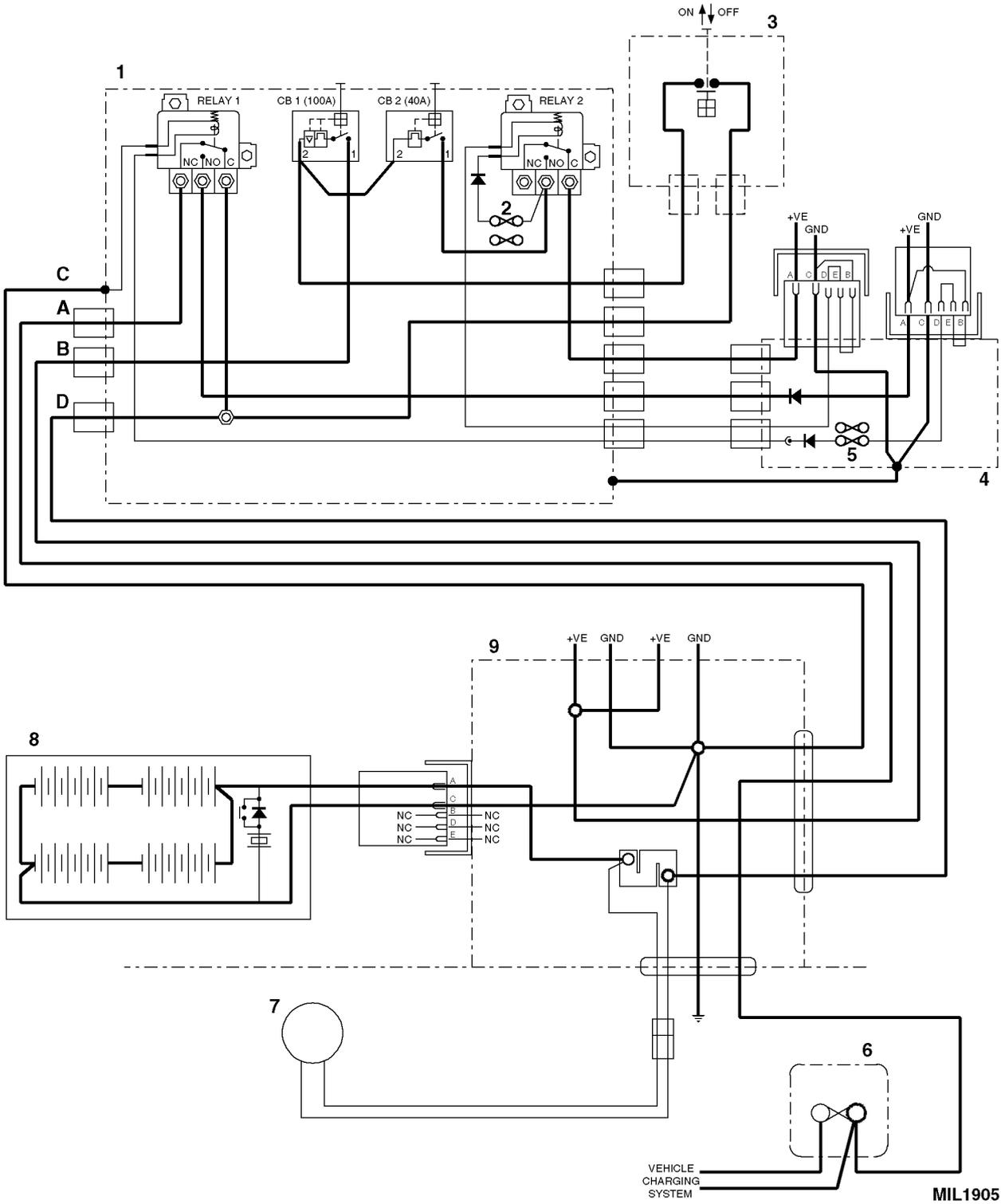
11 10.63kg (2.12kg over front axle).

PUBLICATION AMENDMENTS

NOTE

Necessary amendments will be issued separately.

12 Nil.



- 1 Relay box
- 2 3 Amp fuse
- 3 Isolation switch
- 4 Power import/export box
- 5 3 Amp fuse

- 6 Fast fuse
- 7 Ammeter
- 8 Radio batteries
- 9 Terminal box

Fig 16 Circuit diagram

**TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS**

MODIFICATION INSTRUCTION No. 17

Sponsor: SUV IPT
Project No.:
File ref: SUV/8/25/1B

Publication Authority: CTS TD Andover

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date
1		
2		
3		

Amdt No.	Incorporated By (Signature)	Date
4		
5		
6		

SUBJECT: Introduction of battery retention

INTRODUCTION

1 To allow fitment of vehicle batteries type Absorptive Glass Matt (AGM) lead/acid battery 12 volt NSN Z9BAT 6140-99-665-3648, when issued in lieu of existing batteries, the battery retention clamp is changed.

1.1 Limitations on use of equipment. Nil.

APPLICABILITY

2 Truck Utility Light (TUL) HS and Truck Utility Medium (TUM) HS and TUM Ambulance HS vehicles all variants.

2.1 Fitted to subject vehicles held by user units.

2.2 Unmodified stock, held at all levels of technical storage.

REASON FOR MODIFICATION

3 Code 1 - to improve safety

PRIORITY

4 Army: Immediate
RAF: Class 1

ESTIMATED TIME REQUIRED

5 Embodiment: 0.75 man-hours

MODIFICATION IMPLEMENTATION PLAN

6

- 6.1 This modification is to be implemented by:
- 6.1 ARMY - Units authorized to carry out levels 2, 3 and 4 maintenance.
RAF - When required.
- 6.2 Associated modification instructions. Nil.
- 6.3 Modification plate strike action: N/A.

Action required by

7

- 7.1 Units and establishments holding equipment.
 - 7.1.1 Examine vehicle documents to see if modification is applicable.
 - 7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary Units with level 2 REME Support demand the stores required.
 - 7.1.3 ARMY - On receipt of stores, request REME to modify equipment.
 - 7.1.4 ARMY - Record the modification subject and AESP number in equipment documents.
 - 7.1.5 RAF - Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADP MTMS Job Certification Sheet and to follow the procedures laid down in AP 100C-08A.
- 7.2 Army units authorized to carry out levels 2, 3 and 4 maintenance and RAF units.
 - 7.2.1 ARMY - When requested by users or during overhaul of equipments on charge without REME level 2 Support, obtain the items listed in Para 8 and carry out this modification.
 - 7.2.2 Record completion details of modification against appropriate entry in equipment documents.
 - 7.2.3 Complete AF G1084A when reporting completion of the modification to FORWARD (RAF) using the following code:

RAF: MODIFICATION CODE: AFN 160

NOTE

RAF units operating STAMA are also to complete ADP MTMS Job Certification Sheet and to follow the procedures laid down in 100C-08A.

- 7.3 All recipients of this instruction. Add particulars to AESP 2320-D-128-811 Mod Instr Index.

Stores, tools and equipment

8

8.1 Stores to be demanded.

8.1.1 The following items are to be demanded quoting this instruction as the authority.

Item No.	DMC	NSN/Part No.	Designation	Qty per eqpt
1	7XD	6160-99-865-1185	Clamp, battery	1
2	7XD	5940-99-481-9629	Cover, terminal	1

Sequence of operations

NOTE

The item numbers of Para 8 are used as reference throughout this instruction.

CAUTIONS

- (1) **When installing ensure the batteries are connected in correct polarity.**
- (2) **Care must be taken when disconnecting the batteries. Ensure the ignition system and all electrical components are switched off. Earth lead (negative) to be removed first and reconnected last.**
- (3) **Batteries must be replaced in matched pairs.**

9 Carry out the modification as follows:

Refer to Fig 1.

Removal

- 9.1 From inside the vehicle remove the left hand seat squab.
- 9.2 Undo the over centre catch and slide the battery box cover from the seat base.
- 9.3 Disconnect all leads from the batteries.
- 9.4 Undo the three battery clamp bolts and retain.
- 9.5 Remove the battery clamp and discard.
- 9.6 Remove the two batteries and dispose of in accordance with current procedures.

Fitting

- 9.7 Place the batteries (NSN 6140-99-665-3648) into the battery tray.
- 9.8 Locate the battery clamp (item 1) over the batteries.
- 9.9 Tighten using the existing battery clamp bolts, (do not overtighten).

- 9.10 Lightly clean the terminals with abrasive paper.
- 9.11 Remove bolt on the main positive lead, separate leads, slide additional terminal cover (item 2) on to leads, replace bolt.
- 9.12 Reconnect and tighten the leads, fitting the positive lead to the front battery first.
- 9.13 Reconnect and tighten the negative lead to the rear battery last.

NOTE

When fitted into vehicles or equipment the battery connections should be coated with petroleum jelly (PX7).

- 9.14 Refit the battery box cover and seat squab.

TESTING AFTER EMBODIMENT

- 10 Nil.

EFFECT ON WEIGHT

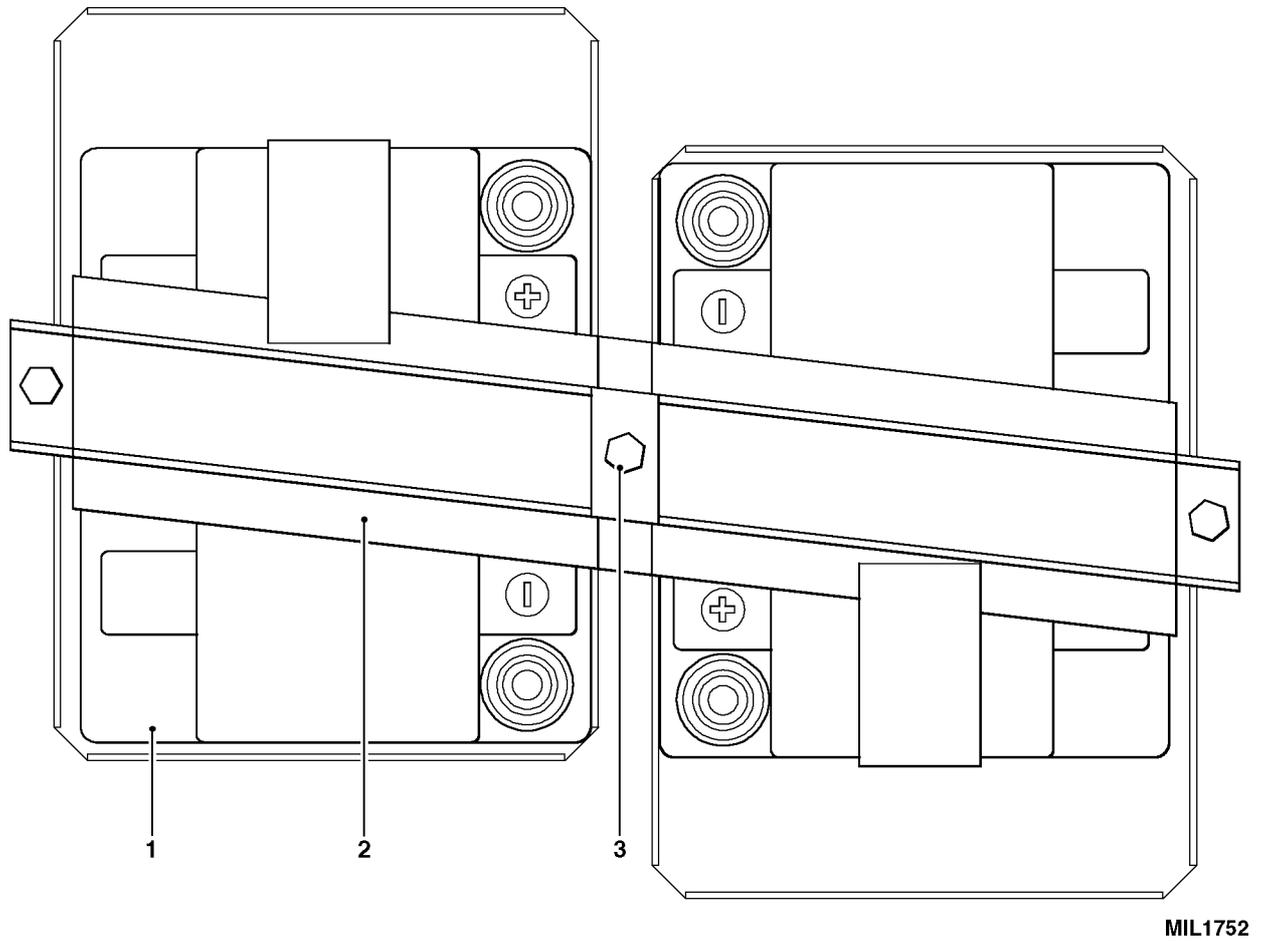
- 11 Negligible.

PUBLICATION AMENDMENTS

NOTE

Necessary amendments will be issued separately.

- 12 Nil.



MIL1752

1 Battery
2 Clamp

3 Battery clamp bolt

Fig 1 Battery clamp installation

**TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION No. 18**

Sponsor:

CSV(Sp) IPT

Publication Agency:

Defence Logistics Organisation
Project No: CSV031

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Fitting of front windscreen and side and rear window protection screens
(Approval No LSTP 12-6675)

INTRODUCTION

1 This instruction details the fitting of front windscreen and side and rear window protection screens (Hard Top) for short term operational requirements.

1.1 Limitations on use of equipment. Nil.

APPLICABILITY

2 All variants of Truck Utility Light (TUL) HS and Truck Utility Medium (TUM) HS vehicles but not including Battle Field Ambulance on the authority of Equipment Manager at DLO.

2.1 Fitted to equipment held by user units.

REASON FOR MODIFICATION

3 Code 6 – Short term operational requirements.

PRIORITY

4 Army: Routine
RAF: Class 3

ESTIMATED TIME REQUIRED

5 Embodiment: 3.0 man hrs.

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

6.1.1 ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.

6.1.2 RAF - Depot units when required.

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action. N/A

ACTION REQUIRED BY

7

7.1 Units and establishment holding equipment.

7.1.1 Examine vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary units with level 2 REME support demand the stores required.

7.1.3 ARMY – on receipt of stores, request REME to modify equipment.

7.1.4 ARMY – Record the modification, subject and the AESP number in equipment documents.

7.1.5 RAF – Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADPMTMS job certification sheet and to follow the procedures laid down in AP 100C - 08A.

7.2 Army units authorised to carry out levels 2, 3 and 4 maintenance and RAF units.

7.2.1 ARMY – When requested by users or during overhaul of equipment on charge without REME level 2 support, obtain the items listed in Para. 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.2.3 Complete AF G1084A when reporting completion of modification to FORWARD (RAF) using the following code.

RAF MODIFICATION CODE: AFN 171

NOTE

RAF units operating STAMA are also to complete ADP MTS job certification sheet and to follow the procedures laid down in 100C - 08A.

7.3 All receipts of this instruction. Add particulars to AESP ref. 2320-D128-811 Mod instr index.

Stores tools and equipment

8

8.1 Stores to be demanded.

8.1.1 The following set is to be demanded quoting this instruction authority.

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
	7RU	2510-99-335-2895	Front screen/front door windows protection kit Comprising:	1
1			Front screen frame assy	(1)
2			Front door screen frame assy (RH)	(1)
3			Front door screen frame assy (LH)	(1)
4			Front screen support strut (RH)	(1)
5			Front screen support strut (LH)	(1)
6			M8x80 Hex bolts	(2)
7			M8x40 Hex set screw	(2)
8			M8 Nyloc nut	(4)
9			M8 Flat washer	(8)
10			Shaft locking pin	(2)
11			Rubber buffer	(2)
12			M6x20 set screw	(4)
13			M6 flat washer	(8)
14			M6 spring washer	(4)
15			Special retaining nut	(4)
16			M6 Rivnut	(4)
17			M6x35 Hex set screw	(4)
	7RU	2510-99-212-5216	Rear door window protection kit (Hard Top only) Comprising:	1
18			Screen assy	(1)
19			M8x75 Hex bolt	(4)
20			M8 flat washer	(4)
21			M8 spring washer	(4)
22			M8 rivnut	(4)

Sequence of operations

NOTE

The item numbers in Para 8 are used as references throughout this instruction.

9 Carry out the modification as follows

9.1 Front windscreen protection screen assembly.

Refer to Figs 1 and 2.

NOTE

Vertical support struts are fitted to each side of the windscreen. To ensure correct alignment the struts should be fitted progressively and independent of the screen guard.

9.1.1 Remove the pivot pin of the RH windscreen hinge and discard.

NOTE

The pivot pin is stepped in diameter. Ensure it is driven out from the end of the smallest diameter (refer to fig 1).

9.1.2 Drill through hinge pivot hole to enlarge pivot hole to receive M8 bolt.

9.1.3 Offer the RH support strut (item 4) to the windscreen and secure at the lower position, using M8 bolt (item 6) washers (item 9) and nyloc nut (item 8) through the windscreen hinge. Loosely tighten the nut and bolt.

NOTE

Locally supplied packing washers may have to be used between the hinge and support strut to ensure the correct alignment of the screen and struts.

9.1.4 Remove the 'A' post trim from inside of windscreen frame.

9.1.5 With RH support strut in position and located firmly against the windscreen surround, drill out two 7mm dia holes in windscreen surround using upper bracket as guide.

9.1.6 Secure the upper bracket to the windscreen surround using M6 set screws (item 12) washers (item 13) spring washers (item 14) and special retaining nuts (item 15).

NOTE

The special retaining nuts (item 15) are shaped to match the inner profile of the windscreen frame and must be inserted correctly.

9.1.7 Repeat steps 9.1.1 to 9.1.6 for the LH side of the windscreen.

9.1.8 Fit Rubber buffers (items 11) into the tapped holes positioned in the top and bottom rails of the protection screen (innerface).

9.1.9 With assistance position the front protection screen (item 1) between the support struts and using M8 set screws (item 7) washers (item 9) and nyloc nuts (item 8) secure to support struts at lower pivot points. Tighten set screws enough to allow the protection screen to be raised and lowered.

9.1.10 Refit trim to inside of windscreen frame.

9.1.11 Raise and lower protection screen and ensure screen does not foul the vertical support struts. Add packing washers to adjust clearance if required. Tighten all fixings.

9.1.12 Raise the screen and ensure the rubber pad (Fig 2 (4)) rests against the vertical strut. Mark the vertical strut through the screen guard bracket (9). Lower screen and drill through vertical strut using 8mm dia drill. Repeat for both LH and RH sides.

9.1.13 Secure screen in vertical position using locking pins (item 10) through support struts of protective screen.

9.2 Front door window protection screens.

Refer to Fig 3.

NOTE

The following procedure is typical for guards fitted to both the driver's and passenger door.

9.2.1 Remove the two door top side screen cover staples by drilling out rivets and retain.

9.2.2 Position the window protection screen assembly (item 2) over the top of the RH front door, lining it up centrally with the window. Mark the position of the two lower fixing points through the side screen frame onto the door.

9.2.3 Remove protection screen and drill two 9mm dia holes in front door and insert two M6 rivnuts (item 16).

9.2.4 Re-hang protection screen over door and secure to door using two M6 set screws (item 17) through the lower fixing points.

9.2.5 Repeat steps 9.2.1 to 9.2.3 for the LH side door.

9.3 Rear door window protection screen (Hard top only).

9.3.1 Position rear window protection screen assembly (item 18) squarely and centrally over window in rear door and mark the positions of the four holes through the screen onto the door.

9.3.2 Remove screen and drill four 11mm dia holes in rear door and insert four M8 rivnuts (item 22).

9.3.3 Secure screen in position using four M8 bolts (item 19), Flat washers (item 20) and spring washers (item 21).

NOTES

(1) When the operational requirement for the protective screens no longer exists, the kit should be removed, parts made good, repackaged and returned to stores.

(2) Removal of the kit can be achieved by following the reverse of the above instruction. Refit the two side screen cover staples and fit new windscreen hinges.

(3) If new front windscreen hinges are not available the modified hinge can be secured with a suitable M8 nut and bolt until new parts are available.

TESTING AFTER EMBODIMENT

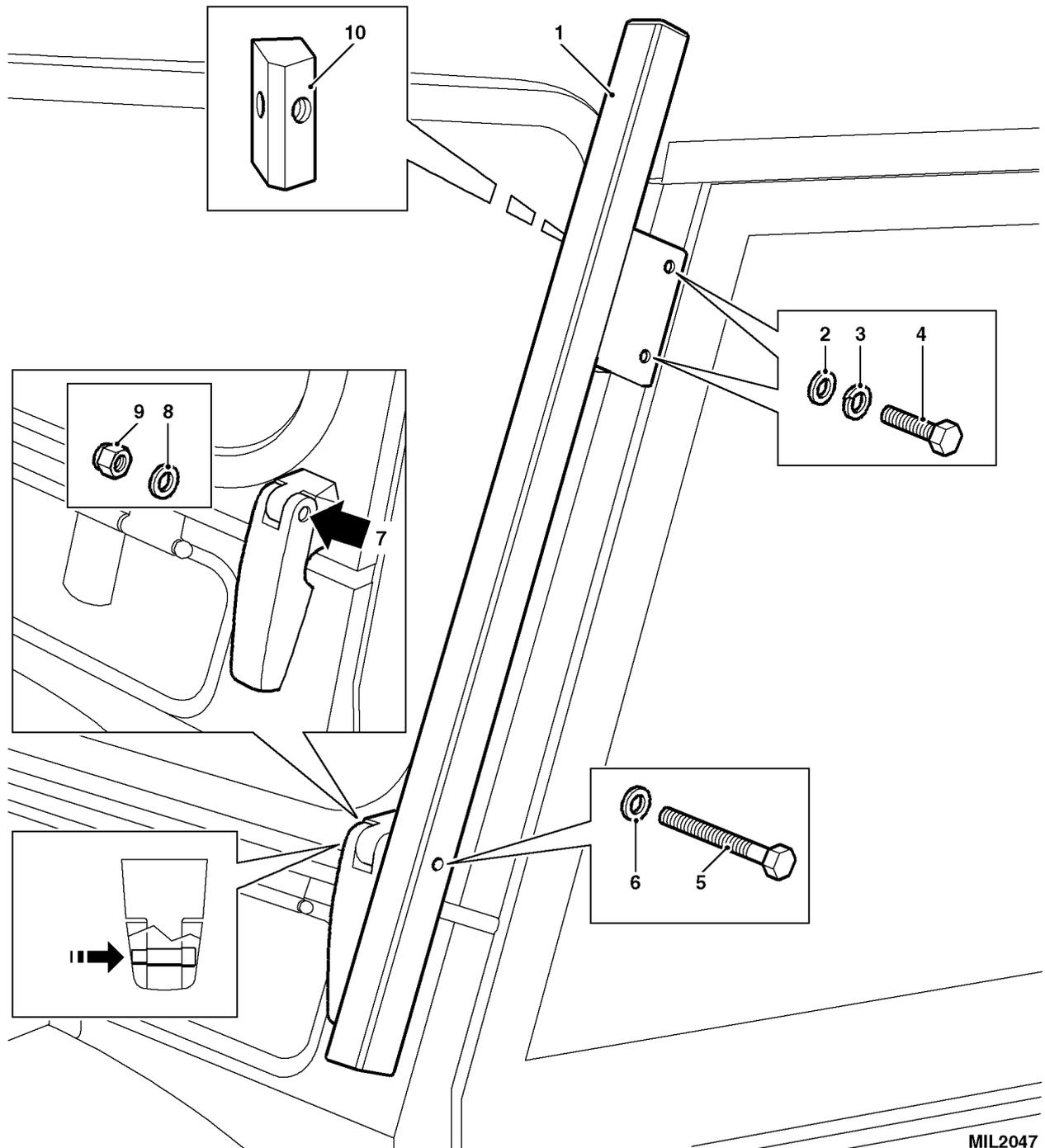
10 Nil.

EFFECT ON WEIGHT

11 No effect after removal (required for short term installation only).

PUBLICATION AMENDMENTS

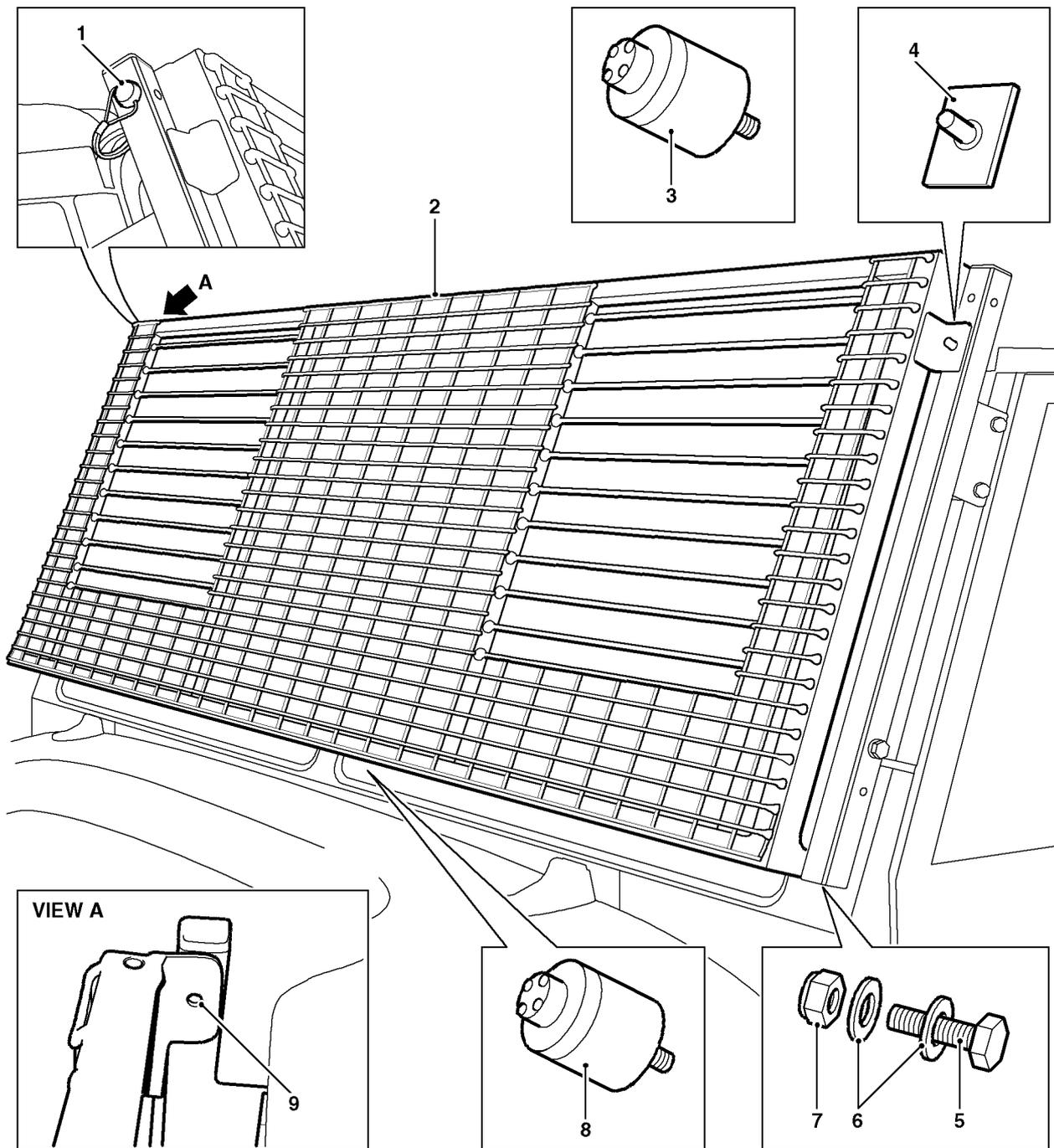
12 Necessary amendments will be issued separately.



MIL2047

- | | | | |
|---|----------------|----|-----------------|
| 1 | Vertical strut | 6 | Washer |
| 2 | Washer | 7 | Packing washers |
| 3 | Spring washer | 8 | Washer |
| 4 | M6 set screw | 9 | Nylock nut |
| 5 | M8 Bolt | 10 | Retaining nut |

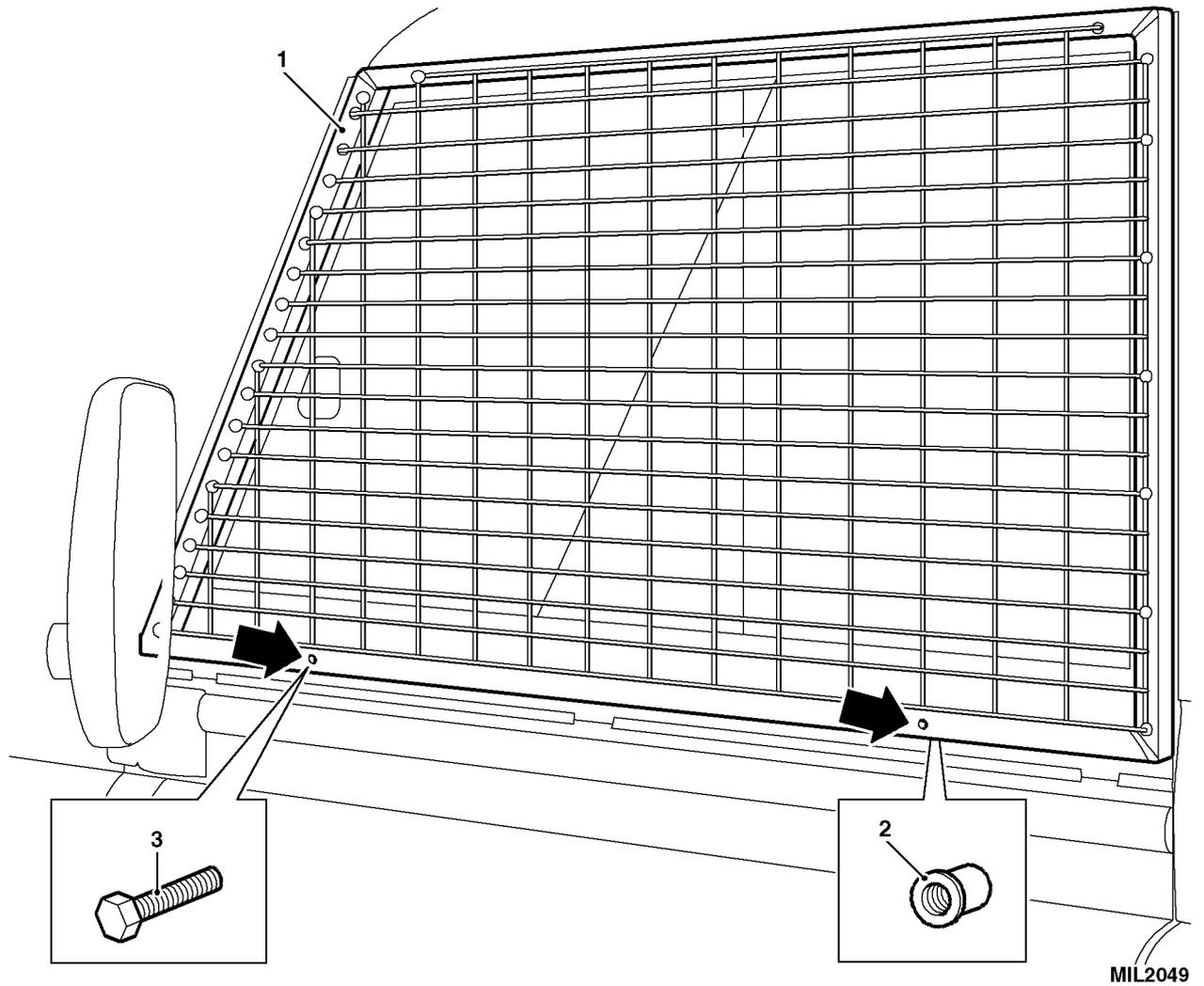
Fig 1 Fitting the front protection screen vertical support struts



MIL2048

- | | | | |
|---|-------------------------|---|----------------|
| 1 | Locking pin | 6 | Washers |
| 2 | Front protection screen | 7 | Nylock nut |
| 3 | Buffer | 8 | Buffer |
| 4 | Pad | 9 | Screen bracket |
| 5 | M8 pivot set screw | | |

Fig 2 Fitting the front protection screen



- 1 Front door protection screen
- 2 M6 rivnut

- 3 M6 set screw

Fig 3 Fitting the front door window protection screens

**TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION No 19**

Sponsor:

DGES(A) ES52
File ref: D/DGES(A) 548/3/4

Publication Agency:

ATSA Chertsey
Project No:ES52c/4356
File ref: DE/CH/4118/LVG

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Black out cover for warning light panel.

(Approval No LSTP 12-6676)

INTRODUCTION

1 This instruction details the fitting of a black out cover over the warning light panel.

1.1 Limitations on use of equipment. Nil

APPLICABILITY

2 Truck Utility Light (TUL) HS, Truck Utility Medium (TUM) HS and (TUM) Ambulance HS all variants.

2.1 Fitted to subject vehicles held by user units.

2.2 Unmodified stock, held at all levels of technical storage.

REASON FOR MODIFICATION

3 Code 2 - to improve operational performance

PRIORITY

4 Army: Routine
RAF: Class 3

ESTIMATED TIME REQUIRED

5 Embodiment: 0.5 man-hours

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.
RAF - When required

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action: NA

Action required by

7

7.1 Units and establishments holding equipment.

7.1.1 Examine vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary Units with level 2 REME Support demand the stores required.

7.1.3 ARMY - On receipt of stores, request REME to modify equipment.

7.1.4 ARMY - Record the modification subject and AESP number in equipment documents.

7.1.5 RAF - Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADP MTMS job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

7.2 Army units authorised to carry out levels 2,3 and 4 maintenance and RAF units.

7.2.1 ARMY - When requested by users or during overhaul of equipments on charge without REME level 2 Support, obtain the items listed in Para 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.2.3 Complete AF G1084A when reporting completion of the modification to FORWARD (RAF) using the following code:

RAF: MODIFICATION CODE AFN 158

NOTE

RAF units operating STAMA are also to complete ADP MTMS Job Certification Sheet and to follow the procedures laid down in 100C-08A.

7.3 All recipients of this instruction. Add particulars to AESP 2320-D-128-811 Mod instr index.

Stores tools and equipment

8

8.1 Stores to be demanded.

8.1.1 The following modification set is to be demanded quoting this instruction authority for demand.

Item No	DMC	NSN/Part No	Designation	Qty Per eqpt
	7XD	6240-99-920-8247	Mod set: comprising:	1
1			Blackout cover assembly, hinged	(1)
2			Label	(1)
3			Screw, raised countersunk recessed M4 x 25 mm	(2)

Sequence of operations

NOTES

- (1) The item numbers of Para 8 are used as references throughout this instruction.
- (2) Standard version shown, winterised/waterproofed similar.

9 Carry out the modification as follows:

Refer to Fig 1.

- 9.1 Locate and identify the warning lights panel.
- 9.2 Remove the two retaining screws and discard.
- 9.3 Place the hinged blackout cover assembly (item 1) onto the warning light panel.
- 9.4 Secure with two screws (item 3).

NOTE

When fitting the label ensure that the bottom set of holes are covered.

- 9.5 Fit the label (item 2) onto the cover ensuring that the holes in the label align with the holes on the cover.

Testing after embodiment

10 Nil

EFFECT ON WEIGHT

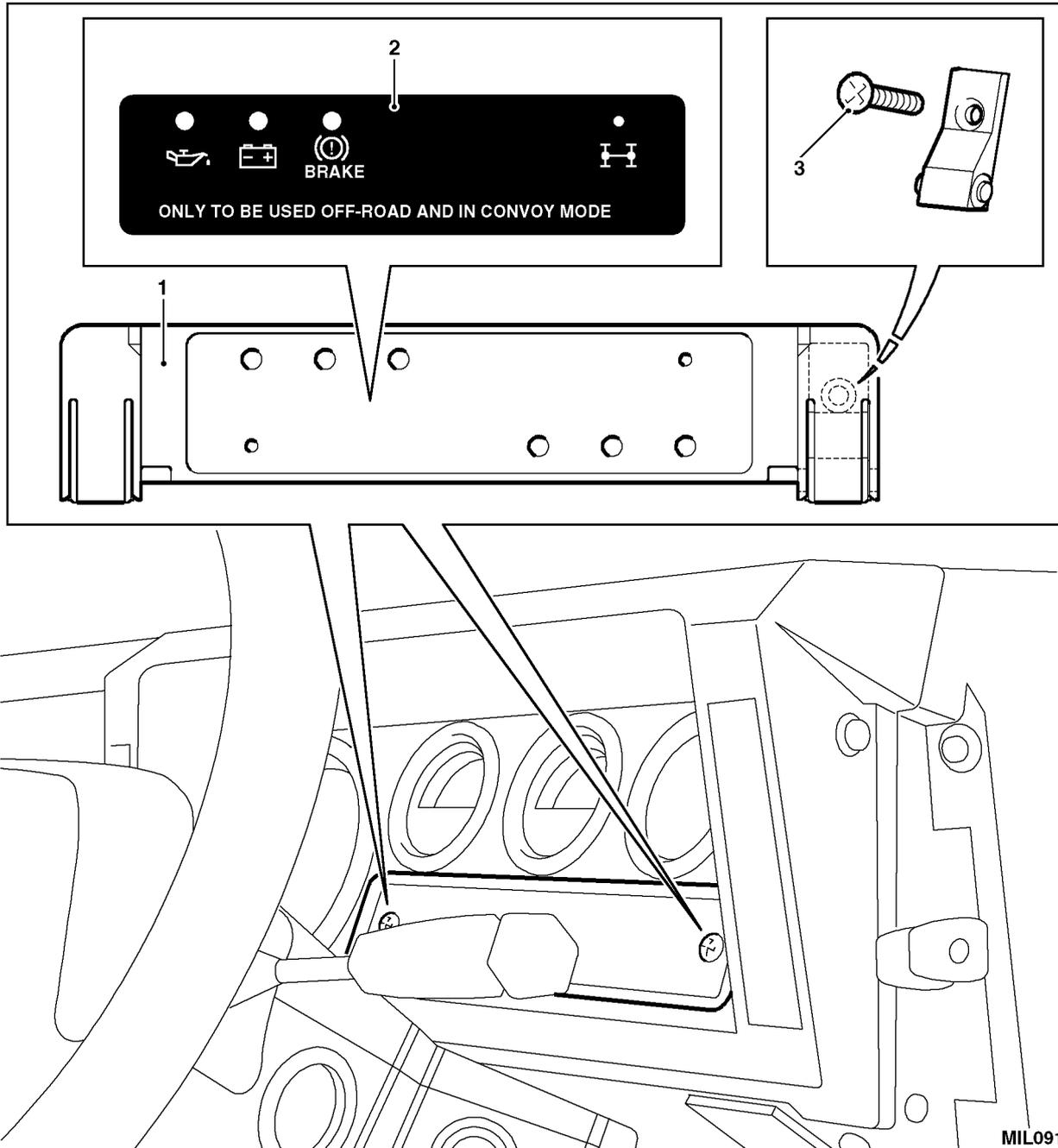
11 Negligible

PUBLICATION AMENDMENTS

NOTE

Necessary amendment(s) will be issued separately.

12 Nil



MIL0914

- 1 Blackout cover
- 2 Label

- 3 Screw

Fig 1 Blackout cover standard version

**TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION No. 20**

Sponsor:

CSV(Sp) IPT

Publication Agency:

Defence Logistics Organisation
Project No: LLVUty-22

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: 8m mast mount installation kit.

(Approval No LSTP 12-6679)

INTRODUCTION

1 This instruction details the fitting of the 8m mast mount installation kit to both Truck Utility Light (TUL) HS and Truck Utility Medium (TUM) HS vehicles.

1.1 Limitations on use of equipment. Nil

APPLICABILITY

2 Truck Utility Light (TUL) HS FFR and Truck Utility Medium (TUM) HS FFR vehicles to be fitted with 8m Communication Mast as authorised by AMLC.

2.1 Fitted to equipment held by user units.

REASON FOR MODIFICATION

3 Code 2 – To improve operational performance.

PRIORITY

4 Army: Routine
RAF: Class 3

ESTIMATED TIME REQUIRED

5 Embodiment: 3 man hrs.

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.

RAF - Units not later than the next routine maintenance and Vehicle Depots before next issue of vehicle.

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action. N/A

ACTION REQUIRED BY

7

7.1 Units and establishment holding equipment.

7.1.1 Examine vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary units with level 2 REME support demand the stores required.

7.1.3 ARMY – on receipt of stores, request REME to modify equipment.

7.1.4 ARMY – Record the modification, subject and the AESP number in equipment documents.

7.1.5 RAF – Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADPMTMS job certification sheet and to follow the procedures laid down in AP 100C - 08A.

7.2 Army units authorised to carry out levels 2, 3 and 4 maintenance and RAF units.

7.2.1 ARMY – When requested by users or during overhaul of equipment on charge without REME level 2 support, obtain the items listed in Para. 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.2.3 Complete AF G1084A when reporting completion of modification to FORWARD (RAF) using the following code.

RAF MODIFICATION CODE: AFN 164

NOTE

RAF units operating STAMA are also to complete ADP MTS job certification sheet and to follow the procedures laid down in 100C - 08A.

7.3 All receipts of this instruction. Add particulars to AESP ref. 2320-D128-811 Mod instr. index.

Stores tools and equipment

NOTES

(1) Items not codified, if required, should be demanded using the manufacturer's part numbers through the normal system.

(2) In Fig 1 all annotations cross refer directly to the item Nos in the table

8

8.1 Stores to be demanded.

8.1.1 The following set is to be demanded quoting this instruction authority.

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
	7XD	5820-99-463-1202	8m mast mount mod set comprising:	1
1		ND	M10 Hex hd nylock nut (s/s)	(2)
2		ND	M10 spring washer (s/s)	(2)
3		VM10017-14	Large spacer	(2)
4		VM10017-15	Small spacer	(2)
5		VM10017-13	Rubber gasket	(1)
6		VM10017-12	Top bracket	(1)
7		ND	M10 x 70 Socket hd capscrew (s/s)	(1)
8		ND	M10 x 60 Socket hd capscrew (s/s)	(1)
9		VM10017-19	Retaining cord and pin	(1)
10		ND	M3 x 16 Pan hd screw (s/s)	(1)
11		ND	M3 spring washer (s/s)	(1)
12		ND	M3 Hex hd nylock nut (s/s)	(1)
13		ND	M8 spring washer (s/s)	(6)
14		ND	M8 Hex hd nylock nut (s/s)	(2)
15		VM10017-18	Top clamp assembly	(1)
16		VM10017-4	Label 1	(1)
17		VM10017-5	Label 2	(1)
18		ND	M8 x 45 Socket hd capscrew (s/s)	(2)
19		ND	M8 x 25 Socket hd capscrew (s/s)	(4)
20		VM10017-3	Bottom bracket	(1)
21		ND	M8 thin wall nutsert	(4)
22		VM10017-16	Shim	(1)

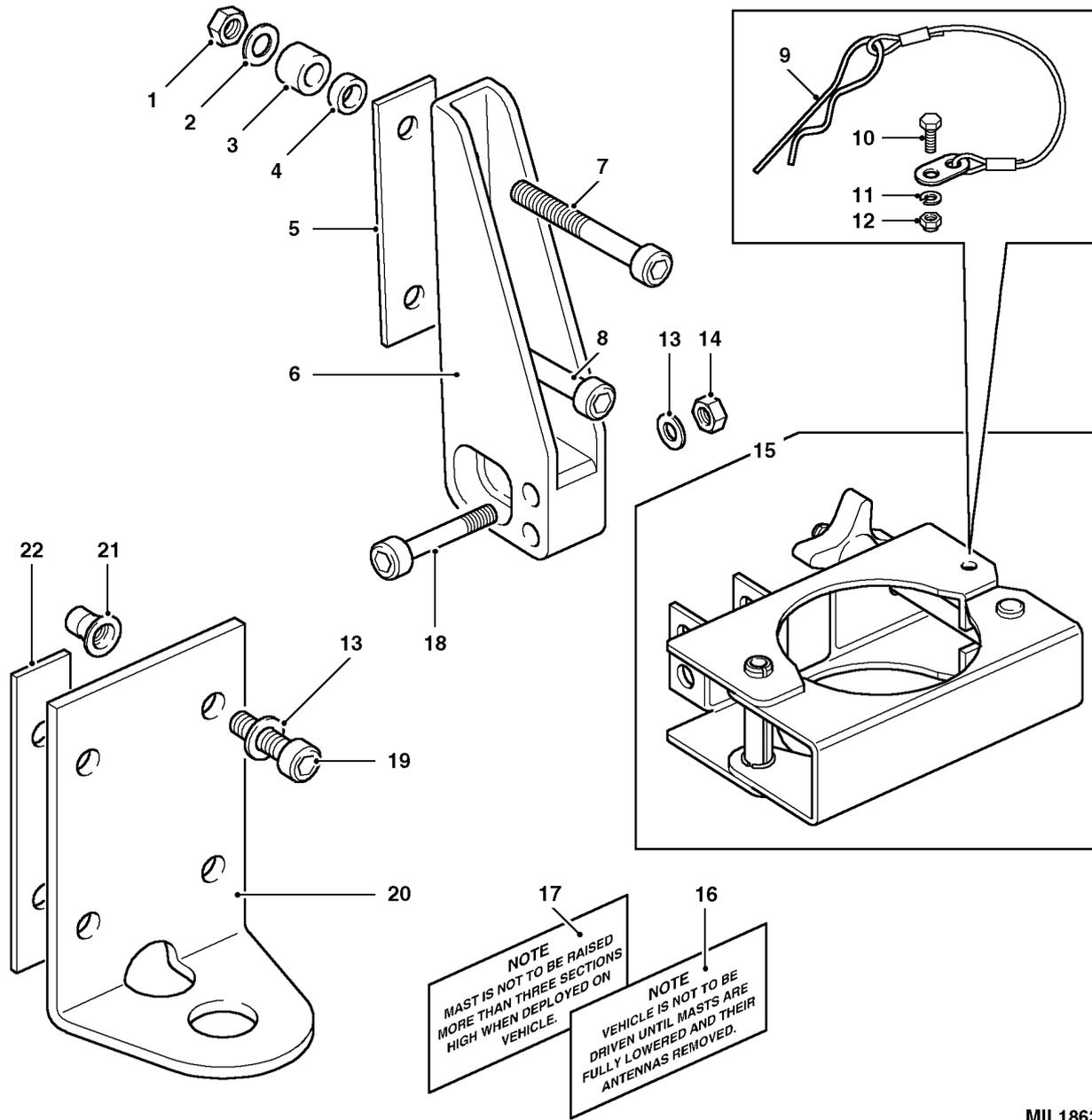


Fig 1 8m mast top clamp and bottom bracket assemblies

MIL1863

Sequence of operations

NOTE

The item numbers in Para 8 are used as references throughout this instruction.

9 Carry out the modification as follows:

9.1 Park vehicle on a level surface and apply hand brake.

9.2 Switch off engine and remove ignition key.

9.3 Determine which side of the vehicle is to be fitted with the 8m mast and apply the following procedure. If two masts are to be fitted, procedure to be applied to both sides.

NOTES

(1) Drilling jigs and bushes are available to assist in the drilling of holes in the body and canopy. These jigs and bushes may be obtained from the units listed below.

(2) If jigs and bushes are not available, the following instructions provide sufficient detail to install the mounting kit.

9.4 The following Units stock the drilling jigs and bushes:

9.4.1 1st Bn REME; 2nd Bn REME; 3rd Bn REME; 4th Bn REME; 5th Bn REME; 6th Bn REME; 7th Bn REME; 3rd Cdo Log Sp Bn; 1st Div Sig Regt; 3 Div Sig Regt

9.5 Top bracket (Canvas roof without ski rack)

Refer to Fig 2

WARNING

HEALTH AND SAFETY. DURING THE FOLLOWING OPERATION USE SUITABLE GLOVES WHEN DRILLING.

9.5.1 From inside the vehicle remove the nuts and bolts securing the cant rail (longitudinal) tie bar and rear corner brace to the rear roll bar bracket.

9.5.2 Drill a 3mm pilot hole through the canvas from the inside using the centre of the holes in the roll bar bracket as a guide.

NOTE

Use a thick block of wood to trap the canvas against the roll bar bracket on the outside whilst drilling the pilot holes from the inside.

9.5.3 Using a Stanley knife or suitable hand held cutter, open up the pilot holes from the outside to 10.5mm dia.

9.5.4 Ensure the side retaining cords at bottom of the canvas roof are released from the cargo rail so that access can be gained to the roll bar bracket underneath the canopy.

9.5.5 On the outside of the vehicle align rubber gasket (item 5) and top bracket (refer to item 6) with holes in canvas and locate with upper capscrew (item 7).

9.5.6 Push the upper capscrew through the canvas and assemble the spacers (refer to items 3 and 4) onto the upper capscrew ensuring they are located between the canvas and roll bar bracket. Ensure larger spacer is fitted against the canvas.

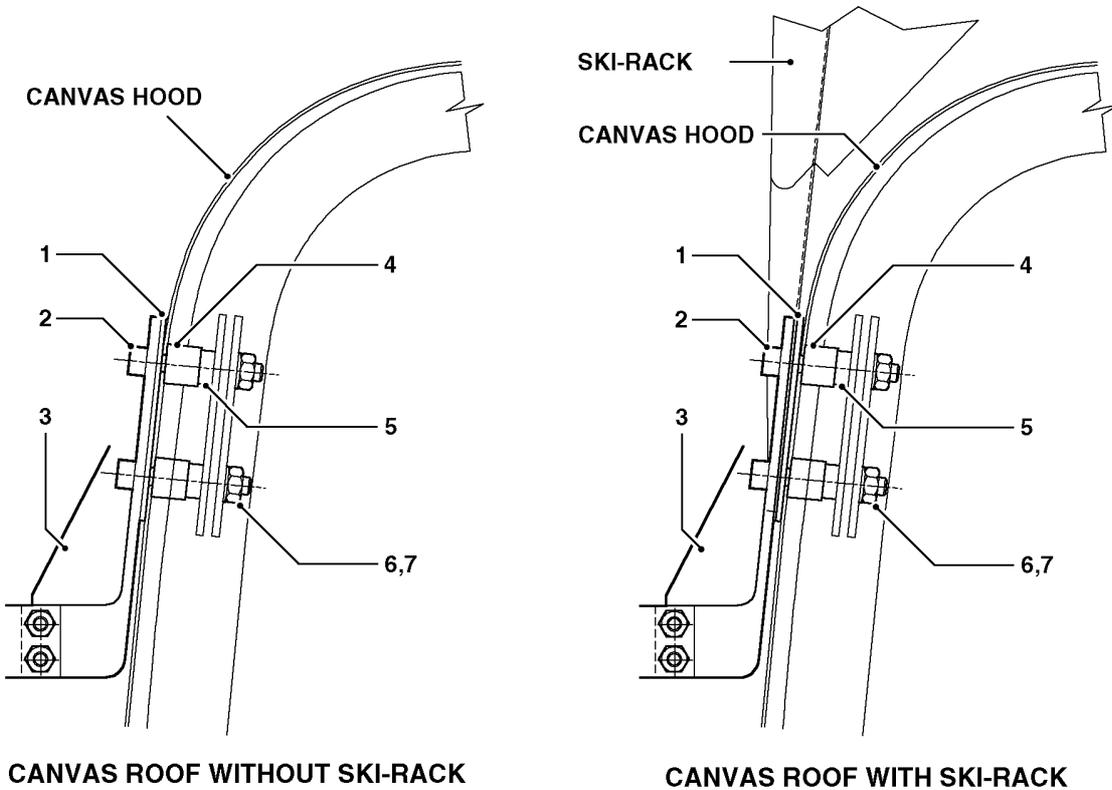
9.5.7 Locate the upper capscrew into the roll bar bracket, secure with the spring washer (item 2) and nylock nut (refer to item 1) and loosely tighten.

9.5.8 Repeat the operation for the lower shorter capscrew (item 8).

9.5.9 Tighten top bracket capscrews to 40Nm (30lbf ft).

9.5.10 Fit clamp assembly (item 15) to top bracket (item 6) using two M8 capscrews (item 18), spring washers (refer to item 13) and nyloc nuts (item 14) and tighten to 30Nm (22lbf ft).

9.5.11 Secure retaining cord and pin (item 9) to clamp assembly using the screw (item 10), washer (item 11) and nut (item 12).



MIL1862

- 1 Rubber gasket
- 2 Capscrew
- 3 Top bracket
- 4 Large spacer

- 5 Small spacer
- 6 Spring washer
- 7 Nyloc nut

Fig 2 Top bracket arrangements (Canvas roof).

9.6 Top bracket (Canvas roof with ski rack)

Refer to Fig 2

NOTE

This procedure assumes that a ski rack is already fitted to the vehicle and that the required holes are already cut in the canvas roof.

9.6.1 From inside the vehicle remove the nuts and bolts securing the cant rail (longitudinal) tie bar and rear corner brace to the rear roll bar bracket and collect the ski rack spacers from in between the canvas roof and the roll bar bracket.

9.6.2 Remove ski rack support bracket.

NOTE

The ski rack support bracket need only be removed from the side of the vehicle that the mast mount is to be fitted. The support bracket can be removed from the cross bar.

9.6.3 Ensure the side retaining cords at bottom of the canvas roof are released from the cargo rail so that access can be gained to the roll bar bracket underneath the canopy.

9.6.4 On the outside of the vehicle align rubber gasket (item 5), ski rack support bracket (ensure correct orientation) and top bracket (item 6) with holes in canvas and locate with upper capscrew (item 7).

9.6.5 Push upper capscrew through the canvas and assemble spacers (items 3 and 4) onto the upper capscrew ensuring they are located between the canvas and roll bar bracket. Ensure larger spacer is fitted against the canvas.

9.6.6 Locate upper capscrew into the roll bar bracket, secure with the spring washer (item 2) and nyloc nut (item 1) and loosely tighten.

9.6.7 Repeat the operation for the lower shorter capscrew (item 8).

9.6.8 Secure ski rack cross bar to support bracket.

9.6.9 Tighten mast top bracket capscrews to 40Nm (30lbf ft).

9.6.10 Fit clamp assembly (refer to item 15) to top bracket (item 6) using two M8 capscrews (refer to item 18), spring washers (item 13) and nyloc nuts (refer to item 14) and tighten to 30Nm (22lbf ft).

9.6.11 Secure retaining cord and pin (refer to item 9) to clamp assembly using the screw (refer to item 10), washer (item 11) and nut (item 12).

9.7 Top bracket (Hardtop without ski rack).

Refer to Fig 3

WARNING

HEALTH AND SAFETY. DURING THE FOLLOWING OPERATION WEAR THE APPROPRIATE MASK AND SAFETY GOGGLES.

- 9.7.1 From inside the vehicle remove the nuts from the bolts securing the cant rail (longitudinal) tie bar and rear corner brace to the rear roll bar bracket.
- 9.7.2 Using a suitable cutting tool cut off the protruding parts of the bolts and remove from the roll bar bracket.
- 9.7.3 Drill a 3mm pilot hole through the hardtop from the inside using the centre of the holes in the roll bar bracket as a guide.
- 9.7.4 Using a tank cutter or drill open up the pilot holes from the outside to 20mm dia. Check for alignment by using the top bracket as a template.
- 9.7.5 Deburr holes and remove all swarf.
- 9.7.6 Align the rubber gasket (item 5) and the top bracket (item 6) with the holes in the hardtop and locate with the upper capscrew (item 7) through upper hole.
- 9.7.7 With the aid of an assistant inside the vehicle assemble the spacers (items 3 and 4) onto the upper capscrew ensuring they are located between the hardtop and roll bar bracket. Ensure the smaller spacer is fitted against the hardtop.
- 9.7.8 Secure the capscrew with the spring washer (item 2) and nyloc nut (item 1) and loosely tighten.
- 9.7.9 Repeat the operation for the lower shorter capscrew (item 8).
- 9.7.10 Tighten top bracket capscrews to 40Nm (30lbf ft).
- 9.7.11 Fit clamp assembly (item 15) to top bracket (item 6) using two M8 capscrews (item 18), spring washers (item 13) and nyloc nuts (item 14) and tighten to 30Nm (22lbf ft).
- 9.7.12 Secure retaining cord and pin (item 9) to clamp assembly using the screw (item 10), washer (item 11) and nut (item 12).

9.8 Top bracket (Hardtop with ski rack).

Refer to Fig 3

NOTE

This procedure assumes that a ski rack is already fitted to the vehicle and that the required holes are already drilled in the hardtop.

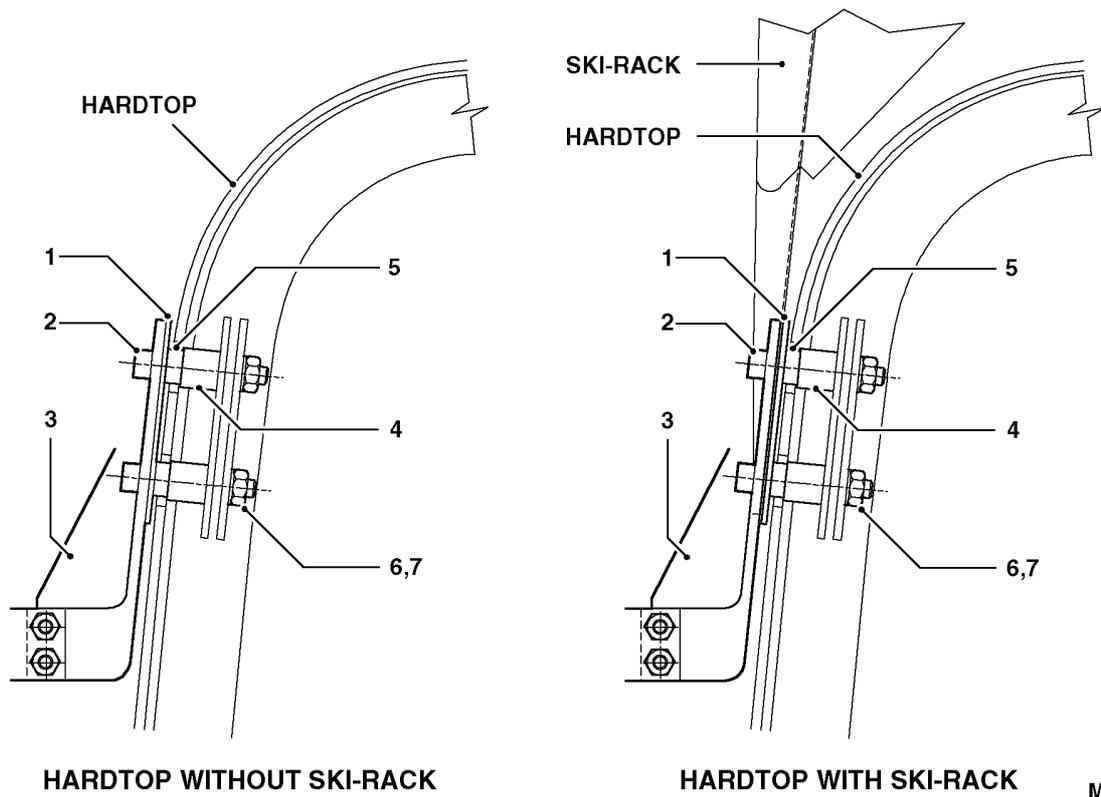
9.8.1 From inside the vehicle remove the nuts from the bolts securing the cant rail (longitudinal) tie bar and rear corner brace to the rear roll bar bracket and collect the ski rack spacers from in between the hardtop and the roll bar bracket.

9.8.2 From outside the vehicle withdraw the bolts and remove ski rack support bracket.

NOTE

The ski rack support bracket need only be removed from the side of the vehicle that the mast mount is to be fitted. The support bracket can be removed from the cross bar.

9.8.3 On the outside of the vehicle align rubber gasket (item 5), ski rack support bracket (ensure correct orientation) and top bracket (refer to item 6) with holes in hardtop and locate with upper capscrew (item 7) through upper hole.



- 1 Rubber gasket
- 2 Capscrew
- 3 Top bracket
- 4 Large spacer

- 5 Small spacer
- 6 Spring washer
- 7 Nyloc nut

MIL1870

Fig 3 Top bracket arrangements (Hardtop).

9.8.4 Push upper capscrew through the hardtop and assemble spacers (items 3 and 4) onto the upper capscrew ensuring they are located between the hardtop and roll bar bracket. Ensure smaller spacer is fitted against the hardtop.

9.8.5 Secure the capscrew with the spring washer (item 2) and nyloc nut (item 1) and loosely tighten.

9.8.6 Repeat the operation for the lower shorter capscrew (item 8).

9.8.7 Secure ski rack cross bar to support bracket.

9.8.8 Tighten top bracket capscrews to 40Nm (30lbf.ft).

9.8.9 Fit clamp assembly (item 15) to top bracket (item 6) using two M8 capscrews (item 18), spring washers (item 13) and nyloc nuts (item 14) and tighten to 30Nm (22lbf.ft).

9.8.10 Secure retaining cord and pin (item 9) to clamp assembly using the screw (item 10), washer (item 11) and nut (item 12).

9.9 Bottom bracket

Refer to Fig 4

- 9.9.1 Carefully remove two rivets marked 'A' from vehicle bodywork.
- 9.9.2 Using a suitable tool open holes to 10.5 - 10.6mm.
- 9.9.3 Fit two M8 nutserts (item 21) into holes.
- 9.9.4 Fit bottom bracket (item 20) and secure using two M8 screws (item 19) ensuring bracket is square with bodywork.
- 9.9.5 Drill two remaining holes using bracket as template.
- 9.9.6 Remove bracket and fit remaining M8 nutserts (item 21). Enlarge holes if required.
- 9.9.7 Refit bottom bracket and secure using all four M8 screws (item 19) ensuring shim (item 22) is fitted to the forward side of the bracket.
- 9.9.8 Repeat procedure for other side of vehicle if required.

9.10 Labels

Refer to Fig 5

- 9.10.1 Position labels (items 16 and 17) as shown.

TESTING AFTER EMBODIMENT

10 Nil

EFFECT ON WEIGHT

11 Negligible

PUBLICATION AMENDMENTS

NOTE

Necessary amendments will be issued separately

12 Nil

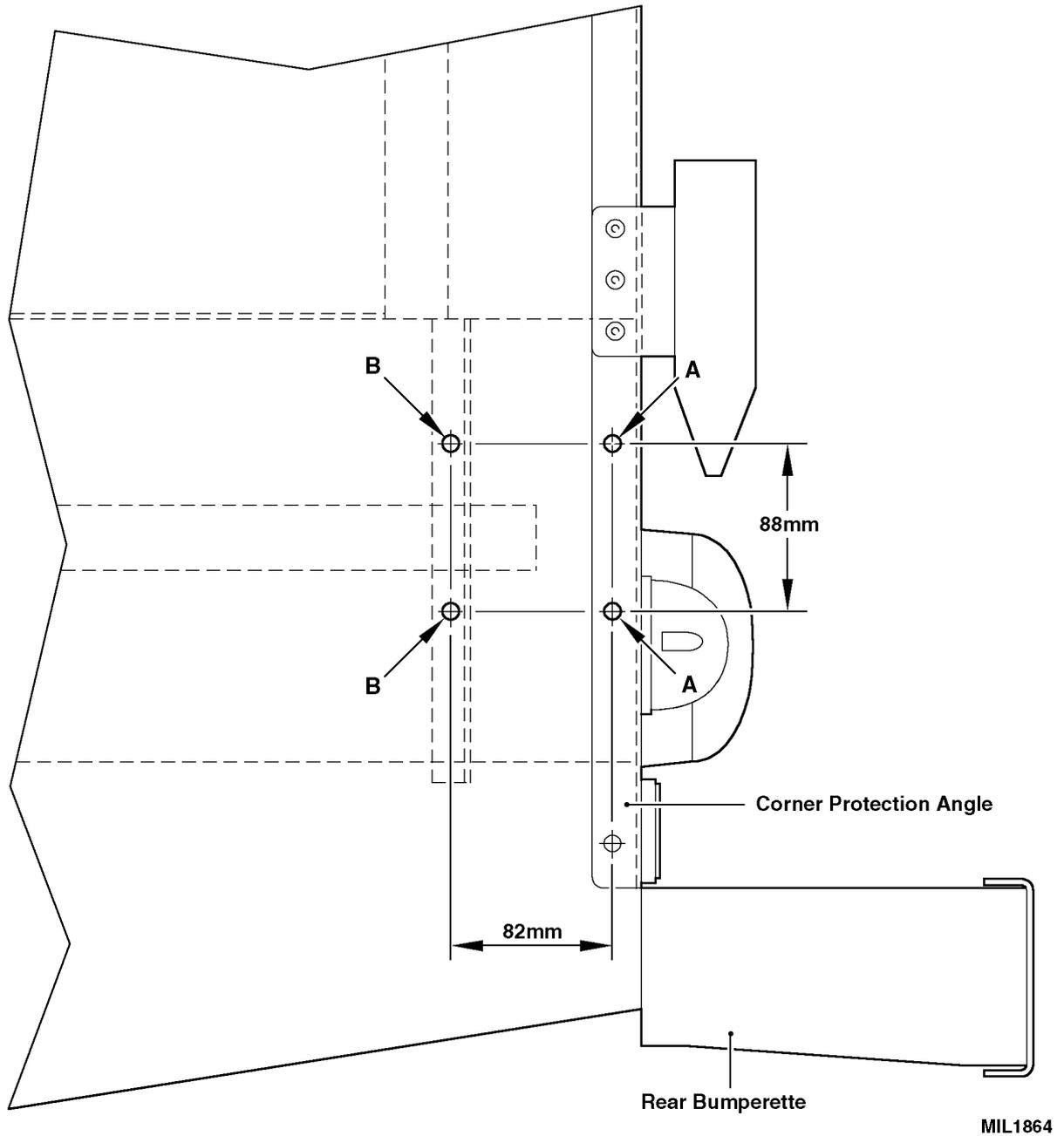
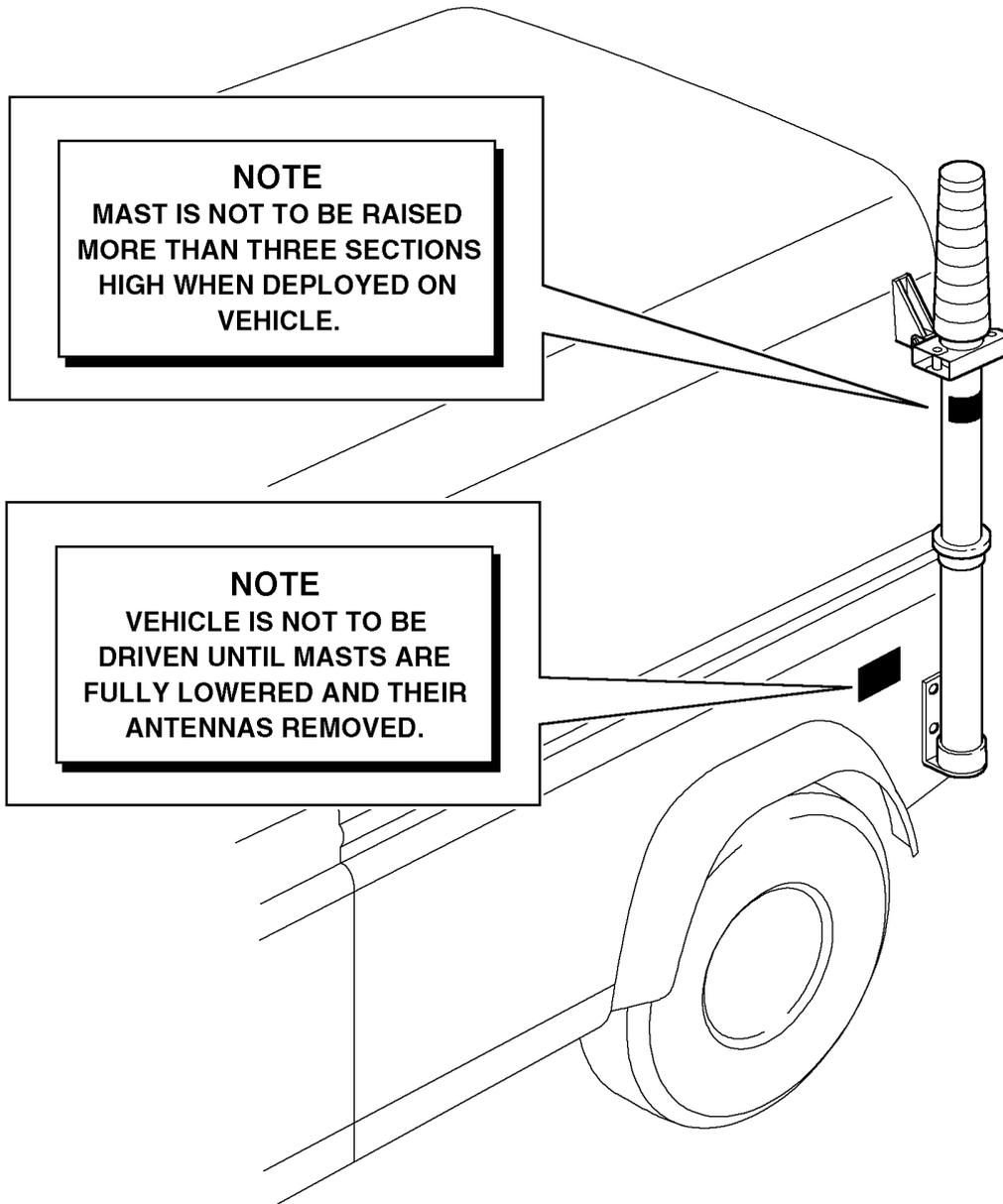


Fig 4 Bottom bracket location.



MIL1861

Fig 5 Positioning labels

**TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION No. 22**

Sponsor:

CSV(Sp) IPT

Publication Agency:

Defence Logistics Organisation
Project No: CSVSp019

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Fitting of vinyl Ambulance Signs and the disabling of the Blue Flashing Beacon and Siren

(Approval No LSTP 12-6682)

INTRODUCTION

1 This instruction details the fitting of vinyl ambulance signs to the sides of the Battlefield Ambulance and the disabling of the Blue Flashing Beacon and Siren.

1.1 Limitations on use of equipment. Nil

APPLICABILITY

2 Truck Utility Medium (TUM) HS Ambulance vehicles.

2.1 Fitted to equipment held by user units.

REASON FOR MODIFICATION

3 Code 2 – To improve operational performance.

PRIORITY

4 Army: Routine
RAF: Class 3

ESTIMATED TIME REQUIRED

5 Embodiment: 1.0 man hrs.

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.

RAF - Units not later than the next routine maintenance and Vehicle Depots before next issue of vehicle.

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action. N/A

ACTION REQUIRED BY

7

7.1 Units and establishment holding equipment.

7.1.1 Examine vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary units with level 2 REME support demand the stores required.

7.1.3 ARMY – on receipt of stores, request REME to modify equipment.

7.1.4 ARMY – Record the modification, subject and the AESP number in equipment documents.

7.1.5 RAF – Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADPMTMS job certification sheet and to follow the procedures laid down in AP 100C - 08A.

7.2 Army units authorised to carry out levels 2, 3 and 4 maintenance and RAF units.

7.2.1 ARMY – When requested by users or during overhaul of equipment on charge without REME level 2 support, obtain the items listed in Para. 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.2.3 Complete AF G1084A when reporting completion of modification to FORWARD (RAF) using the following code.

RAF MODIFICATION CODE: AFN 167

NOTE

RAF units operating STAMA are also to complete ADP MTS job certification sheet and to follow the procedures laid down in 100C - 08A.

7.3 All receipts of this instruction. Add particulars to AESP ref. 2320-D128-811 Mod instr. index.

Stores tools and equipment

NOTE

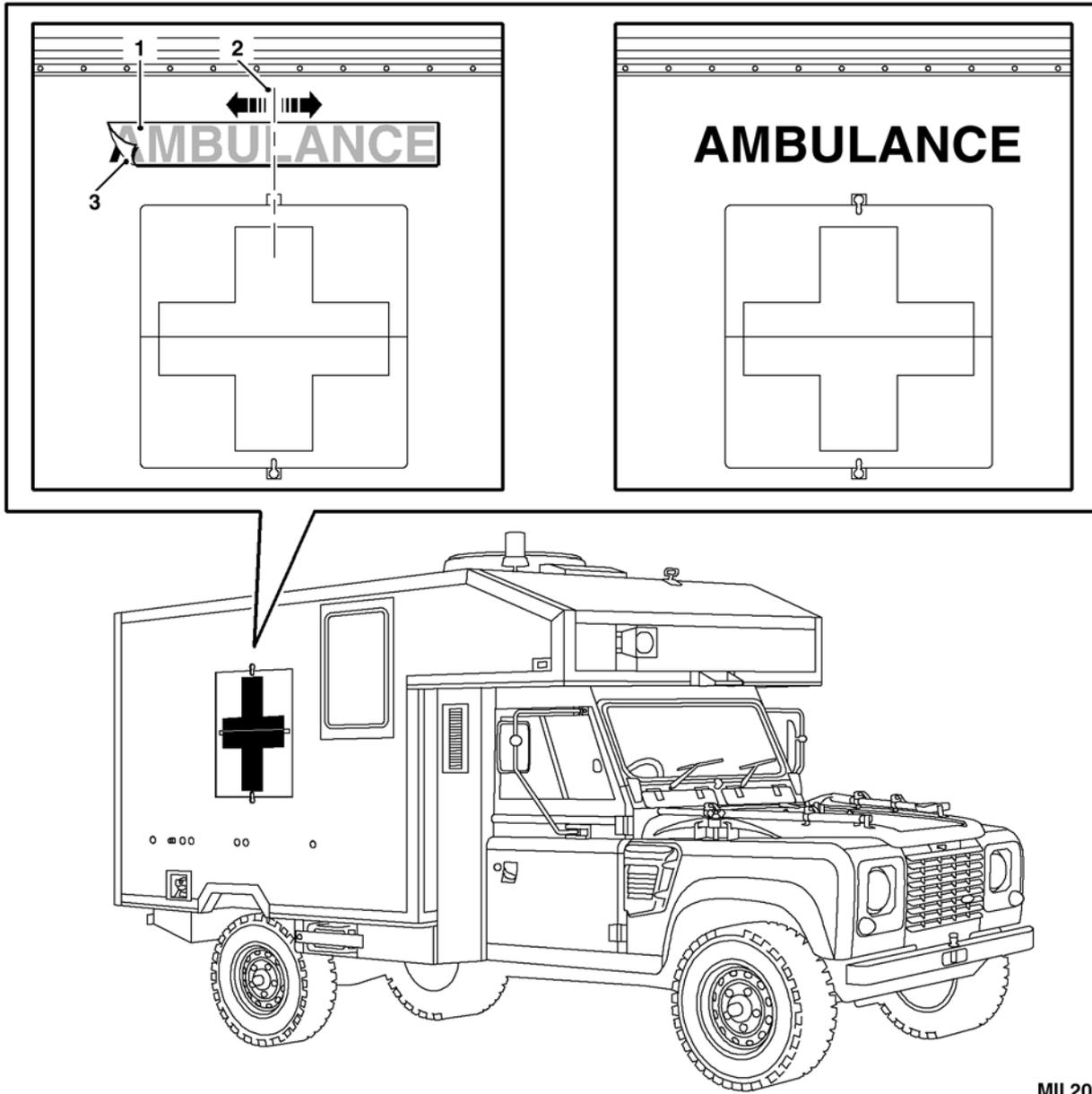
Items not codified, if required, should be demanded using the manufacturer's part numbers through the normal system.

8

8.1 Stores to be demanded.

8.1.1 The following set is to be demanded quoting this instruction authority.

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
1	7XD	7530 99 435 8119	Vinyl Ambulance signs	2



MIL2031

- | | |
|--|-------------------------------|
| <p>1 Vinyl sign with carrier paper</p> <p>2 Expel air by working from centre</p> | <p>3 Remove carrier paper</p> |
|--|-------------------------------|

Fig 1 Positioning the Vinyl Ambulance signs

Sequence of operations

Fitting of Vinyl Ambulance Signs

NOTE

The item numbers in Para 8 are used as references throughout this instruction.

9 Carry out the modification as follows:

NOTES

(1) This procedure is to be repeated for both sides of the vehicle.

(2) It is recommended that this procedure is carried out inside a warm workshop.

9.1 Park the vehicle on a flat level surface, apply the hand brake and switch off the engine.

9.2 Thoroughly clean area onto which sign will be affixed free from grease and dirt using a soap and water solution (washing up liquid is ideal).

9.3 Remove the protective backing from the rear of the vinyl sign (item 1).

9.4 With the surface still wet (use the washing up liquid solution) position the vinyl sign centrally above the Red Cross (refer to Fig 1) with carrier paper upper most.

9.5 Press firmly into place through the carrier paper ensuring all air is expelled from under the sign.

NOTE

Use a plastic applicator or stiff card to assist in pushing the air from under the sign by working from the centre outwards.

9.6 Once the sign is firmly in position, soak the carrier paper and carefully peel off the paper taking care not to lift the sign from the side of the vehicle.

9.7 Dry off with a clean cloth.

9.8 Leave to dry in a warm area.

Disabling the Emergency Blue Flashing Beacon and Siren

9.9 To disable the Emergency Blue Flashing Beacon:

9.9.1 Park the vehicle on a flat level surface, apply the hand brake and switch off the engine.

9.9.2 Release clamps on Emergency Blue flashing Beacons and remove from roof mountings.

9.9.3 Stow safely inside the vehicle (in the stowage compartment under the right hand front seat).

NOTE

To prevent damage to the beacon units whilst inside the stowage compartment, rather than leave them loose, wrap the beacon units in cardboard or similar material and secure together with a strong elastic band.

9.10 To isolate the Emergency Siren:

9.10.1 Remove the centre switch panel and locate the 10 Amp in-line fuse (Fig 2 (1)) for the siren (refer to Cat 522, Chapter 13-1).

9.10.2 Remove the 10 Amp fuse from the inline fuse holder.

NOTE

To prevent the fuse from being lost, tape it to the inside of the switch panel or to the fuse holder wire.

9.10.3 Refit the centre switch panel (refer to Cat 522, Chap 13-1).

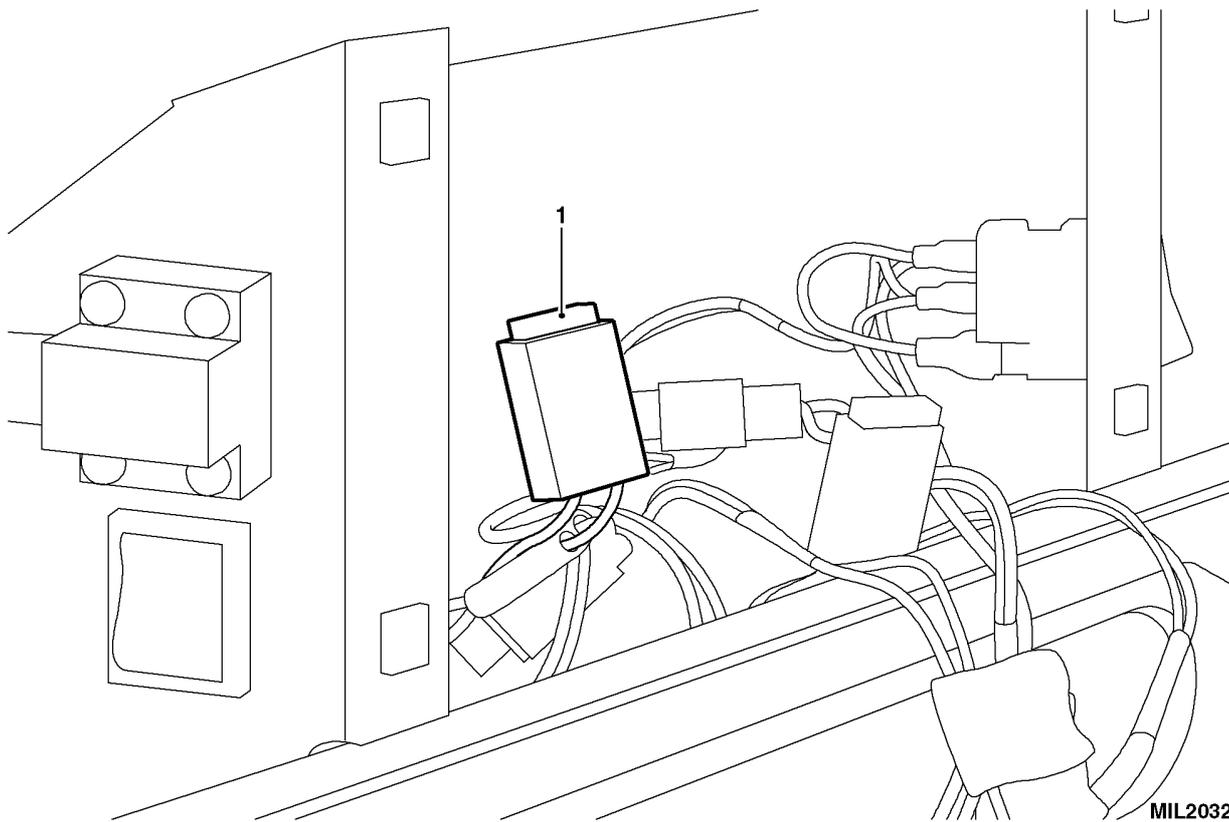


Fig 2 Removing the 10 Amp Siren fuse

TESTING AFTER EMBODIMENT

10 Nil.

EFFECT ON WEIGHT

11 Nil.

PUBLICATION AMENDMENTS

NOTE

Necessary amendments will be issued separately.

12 Nil.

**TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION No. 23**

Sponsor:

CSV(Sp) IPT

Publication Agency:

Defence Logistics Organisation
Project No: CSVSp024

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Fitting of a warning label

(Approval No LSTP 12-6683)

INTRODUCTION

1 This instruction details the fitting of a warning label to the shower proof dash cover of WMIK vehicles.

1.1 Limitations on use of equipment. Nil

APPLICABILITY

2 Truck Utility Medium (TUM) HS vehicles fitted with the Weapons Mounted Installation Kit with Asset codes NB5012 3100 and NB5030 3100.

2.1 Fitted to equipment held by user units.

REASON FOR MODIFICATION

3 Code 1 – To improve safety.

PRIORITY

4 Army: Routine
RAF: Class 3

ESTIMATED TIME REQUIRED

5 Embodiment: 0.5 man hrs.

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.

RAF - Units not later than the next routine maintenance and Vehicle Depots before next issue of vehicle.

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action. N/A

ACTION REQUIRED BY

7

7.1 Units and establishment holding equipment.

7.1.1 Examine vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary units with level 2 REME support demand the stores required.

7.1.3 ARMY – on receipt of stores, request REME to modify equipment.

7.1.4 ARMY – Record the modification, subject and the AESP number in equipment documents.

7.1.5 RAF – Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADPMTMS job certification sheet and to follow the procedures laid down in AP 100C - 08A.

7.2 Army units authorised to carry out levels 2, 3 and 4 maintenance and RAF units.

7.2.1 ARMY – When requested by users or during overhaul of equipment on charge without REME level 2 support, obtain the items listed in Para. 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.2.3 Complete AF G1084A when reporting completion of modification to FORWARD (RAF) using the following code.

RAF MODIFICATION CODE: AFN 168

NOTE

RAF units operating STAMA are also to complete ADP MTS job certification sheet and to follow the procedures laid down in 100C - 08A.

7.3 All receipts of this instruction. Add particulars to AESP ref. 2320-D128-811 Mod instr. index.

Stores tools and equipment

8

8.1 Stores to be demanded.

8.1.1 The following set is to be demanded quoting this instruction authority.

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
1	7XD	2540 99 3968975	Warning label	1

Sequence of operations

NOTE

The item numbers in Para 8 are used as references throughout this instruction.

9 Carry out the modification as follows:

9.1 Remove the shower proof cover from the vehicle and place onto a clean flat surface.

9.2 Thoroughly clean area onto which label will be affixed using white spirits and allow to dry (refer to Fig 1).

9.3 Remove the protective backing from the warning label (item 1).

9.4 Affix the label to the vertical face of the shower proof cover using firm pressure, positioning it central and to the left of the opening for the dash shelf (refer to Fig 1).

NOTE

The label should be positioned so that it can be easily read whilst sitting in the passenger seat.

9.5 Wipe down the label and the area around it with a dry soft cloth.

9.6 Refit the shower proof cover to the vehicle.

NOTE

Allow the label a period of time for the adhesive to cure before refitting the cover to the vehicle.

TESTING AFTER EMBODIMENT

10 Nil

EFFECT ON WEIGHT

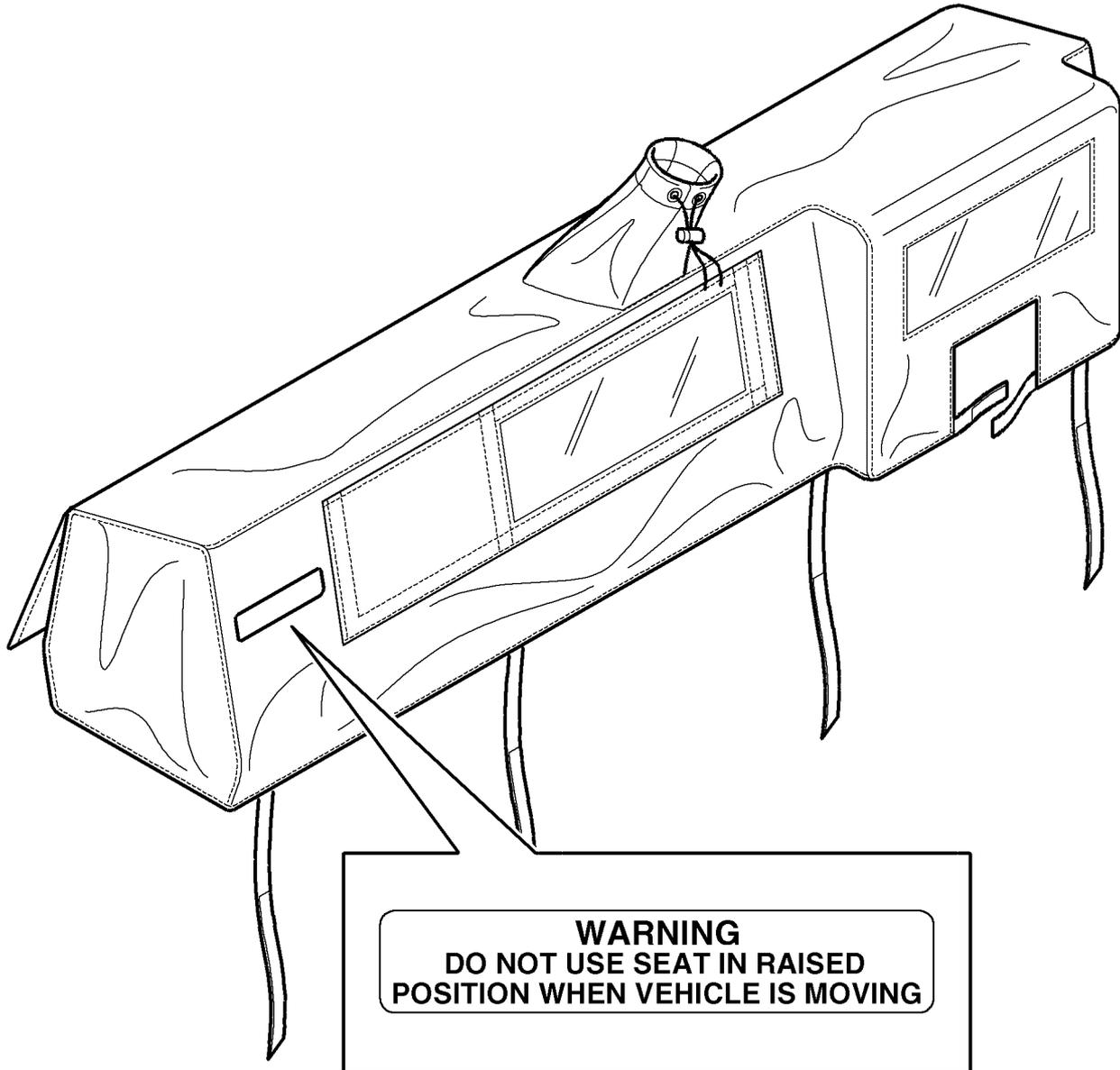
11 Nil

PUBLICATION AMENDMENTS

NOTE

Necessary amendments will be issued separately.

12 Nil



MIL2035

Fig 1 Warning label position

**TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION No. 24**

Sponsor:

CSV(Sp) IPT

Publication Agency:

Defence Logistics Organisation
Project No: CSVSp025

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Fitting of a Trailer Breakaway Attachment Plate
(Approval No LSTP 12-6684)

INTRODUCTION

- 1 This instruction details the fitting of a trailer breakaway attachment plate.
 - 1.1 Limitations on use of equipment. Nil

APPLICABILITY

- 2 All variants of Truck Utility Light (TUL) HS and Truck Utility Medium (TUM) HS vehicles.
 - 2.1 Fitted to equipment held by user units.

REASON FOR MODIFICATION

- 3 Code 2 – To improve operational performance.

PRIORITY

- 4 Army: Routine
RAF: Class 3

ESTIMATED TIME REQUIRED

- 5 Embodiment: 0.5 man hrs.

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.

RAF - Units not later than the next routine maintenance and Vehicle Depots before next issue of vehicle.

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action. N/A

ACTION REQUIRED BY

7

7.1 Units and establishment holding equipment.

7.1.1 Examine vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary units with level 2 REME support demand the stores required.

7.1.3 ARMY – on receipt of stores, request REME to modify equipment.

7.1.4 ARMY – Record the modification, subject and the AESP number in equipment documents.

7.1.5 RAF – Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADPMTMS job certification sheet and to follow the procedures laid down in AP 100C - 08A.

7.2 Army units authorised to carry out levels 2, 3 and 4 maintenance and RAF units.

7.2.1 ARMY – When requested by users or during overhaul of equipment on charge without REME level 2 support, obtain the items listed in Para. 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.2.3 Complete AF G1084A when reporting completion of modification to FORWARD (RAF) using the following code.

RAF MODIFICATION CODE: AFN 169

NOTE

RAF units operating STAMA are also to complete ADP MTS job certification sheet and to follow the procedures laid down in 100C - 08A.

7.3 All receipts of this instruction. Add particulars to AESP ref. 2320-D128-811 Mod instr. index.

Stores tools and equipment

8

8.1 Stores to be demanded.

8.1.1 The following set is to be demanded quoting this instruction authority.

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
1	7XD	2590-99-453-0975	Breakaway attachment plate	1
2	7FW	5310-99-125-9042	Nut, self locking, extended flange	4

Sequence of operations

NOTE

The item numbers in Para 8 are used as references throughout this instruction.

9 Carry out the modification as follows (refer to Fig 1):

WARNING

HEAVY EQUIPMENT. THE ROTATING TOWING HOOK IS A HEAVY ITEM OF EQUIPMENT AND IT IS ADVISABLE TO HAVE THE HELP OF AN ASSISTANT DURING THE FOLLOWING PROCEDURE.

9.1 From under the rear of the vehicle, remove the flanged nuts from the four bolts securing the rotating towing hook to the rear cross member. Discard nuts.

9.2 With assistance to support the weight of the rotating towing hook, withdraw the two lower bolts securing the towing hook to the rear cross member.

9.3 Withdraw the rotating towing hook from the rear cross member complete with the upper bolts and lower to the floor.

9.4 Locate the breakaway attachment plate (item 1) behind the towing hook and hold in position using two bolts in the upper holes.

NOTE

The breakaway attachment plate should be located between the towing hook and the rear cross member when assembled.

9.5 With assistance, lift the assembly and offer it to the upper locating holes in the rear cross member, push the two upper bolts through the rear cross member to locate the assembly.

9.6 Loosely secure the two upper bolts under the rear of the vehicle using new flanged nuts (item 2).

9.7 Locate the two lower bolts through the towing hook, breakaway attachment plate and rear cross member and loosely secure using remaining new flanged nuts (item 2).

9.8 Ensure assembly is correctly aligned on the rear cross member and tighten flanged nuts to 75Nm.

TESTING AFTER EMBODIMENT

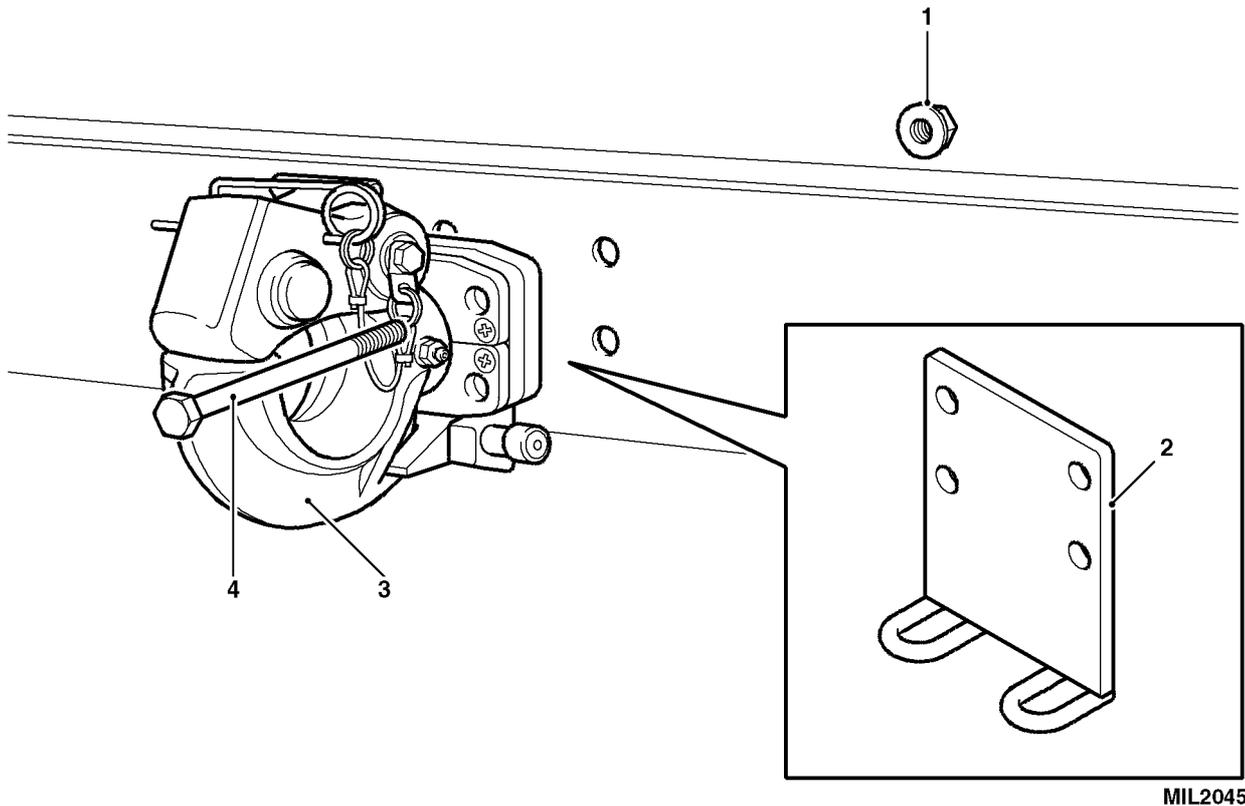
10 Nil.

EFFECT ON WEIGHT

11 Nil.

PUBLICATION AMENDMENTS

12 Nil.



- | | | | |
|---|----------------------------|---|----------------------|
| 1 | Flanged Nut | 3 | Rotating towing hook |
| 2 | Breakaway attachment plate | 4 | Bolt |

Fig 1 Fitting the Breakaway Attachment plate

**TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION No. 25**

Sponsor:

CSV(Sp) IPT

Publication Agency:

Defence Logistics Organisation
Project No: CSVSp026

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Fitting of a spare wheel lifting aid harness

(Approval No LSTP 12-6685)

INTRODUCTION

1 This instruction details the fitting of a spare wheel lifting aid harness to allow single man operation.

1.1 Limitations on use of equipment. Nil

APPLICABILITY

2 All variants of Truck Utility Light (TUL) HS and Truck Utility Medium (TUM) HS vehicles but not including Battle Field Ambulance.

2.1 Fitted to equipment held by user units.

REASON FOR MODIFICATION

3 Code 1 – To improve safety.

PRIORITY

4 Army: Routine
RAF: Class 3

ESTIMATED TIME REQUIRED

5 Embodiment: 0.5 man hrs.

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.

RAF - Units not later than the next routine maintenance and Vehicle Depots before next issue of vehicle.

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action. N/A

ACTION REQUIRED BY

7

7.1 Units and establishment holding equipment.

7.1.1 Examine vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary units with level 2 REME support demand the stores required.

7.1.3 ARMY – on receipt of stores, request REME to modify equipment.

7.1.4 ARMY – Record the modification, subject and the AESP number in equipment documents.

7.1.5 RAF – Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADPMTMS job certification sheet and to follow the procedures laid down in AP 100C - 08A.

7.2 Army units authorised to carry out levels 2, 3 and 4 maintenance and RAF units.

7.2.1 ARMY – When requested by users or during overhaul of equipment on charge without REME level 2 support, obtain the items listed in Para. 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.2.3 Complete AF G1084A when reporting completion of modification to FORWARD (RAF) using the following code.

RAF MODIFICATION CODE: AFN 170

NOTE

RAF units operating STAMA are also to complete ADP MTS job certification sheet and to follow the procedures laid down in 100C - 08A.

7.3 All receipts of this instruction. Add particulars to AESP ref. 2320-D128-811 Mod instr. index.

Stores tools and equipment

8

8.1 Stores to be demanded.

8.1.1 The following set is to be demanded quoting this instruction authority.

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
1	7RU	2540-99-762-5238	Spare wheel lifting aid harness kit	1

Sequence of operations

NOTE

The item numbers in Para 8 are used as references throughout this instruction.

9 Carry out the modification as follows (refer to Fig 1):

9.1 Position the vehicle onto flat, level ground, apply the handbrake and remove the ignition keys.

9.2 With assistance, remove the spare wheel from the carrier on the left hand side of the vehicle.

9.3 Retrieve the 'U' bolt from the spare wheel lifting kit (item 1) and fit a nut on each thread, screwed on approximately two thirds down each thread.

9.4 Place the 'U' bolt over the spare wheel carrier just behind and next to the flange.

9.5 Secure the bracket assembly to the 'U' bolt with two more nuts (ensuring the plain and spring washers are fitted under the bracket) and adjust the 4 nuts so that the assembly grips the circumference of the wheel carrier and is square to the side of the vehicle

NOTE:

Ensure the bracket is secured at right angles to the side of the vehicle otherwise the harness straps will not lift the wheel equally.

9.6 Tighten the nuts enough to secure the bracket assembly to the wheel carrier without it turning on the carrier.

Caution

Torquing the nuts. Take care not to over tighten the nuts and deform the bracket assembly.

9.7 With the harness hanging down from the wheel carrier, release the adjustment cleats and free off the adjustment straps enough to enable the ends of the harness with the black plastic stops fitted to reach the uppermost stud holes in the spare wheel when rolled alongside the harness.

9.8 Ensure the centre of the wheel is facing outwards (as if it were ready to fit to an axle) and push the plastic stops and straps through the wheel stud holes from the back of the wheel.

NOTE:

The plastic stops should be one wheel stud hole apart.

9.9 With the plastic stops secured through the two wheel stud holes, lift the spare wheel off the ground by pulling the harness adjusting straps through the two cleats to meet the metal buckles at the top of the adjusting straps (refer to Fig 2).

9.10 Stow the excess straps in the bag in the centre of the harness assembly.

9.11 With the straps fully adjusted against the metal buckles, take hold of the spare wheel with both hands and lift the lower edge of the spare wheel through 180 degrees so that the centre of the inverted wheel locates up against the wheel carrier on the side of the vehicle (refer to Fig 2).

9.12 If the straps have been adjusted correctly the centre of the wheel should fall slightly short of the top of the wheel carrier. With both hands towards the top of the inverted wheel, push upwards to locate the spare wheel onto the wheel carrier.

WARNING

FALLING OBJECTS. THE SPARE WHEEL MUST ALWAYS BE SUPPORTED IN POSITION ON THE WHEEL CARRIER UNTIL THE CLAMP AND BOLTS ARE FITTED.

9.13 Support the spare wheel in the stowed position whilst the spare wheel clamp and bolts are fitted (refer to Fig 3).

9.14 Tighten the spare wheel clamp bolts.

9.15 To remove the wheel lift harness assembly, reverse this procedure.

TESTING AFTER EMBODIMENT

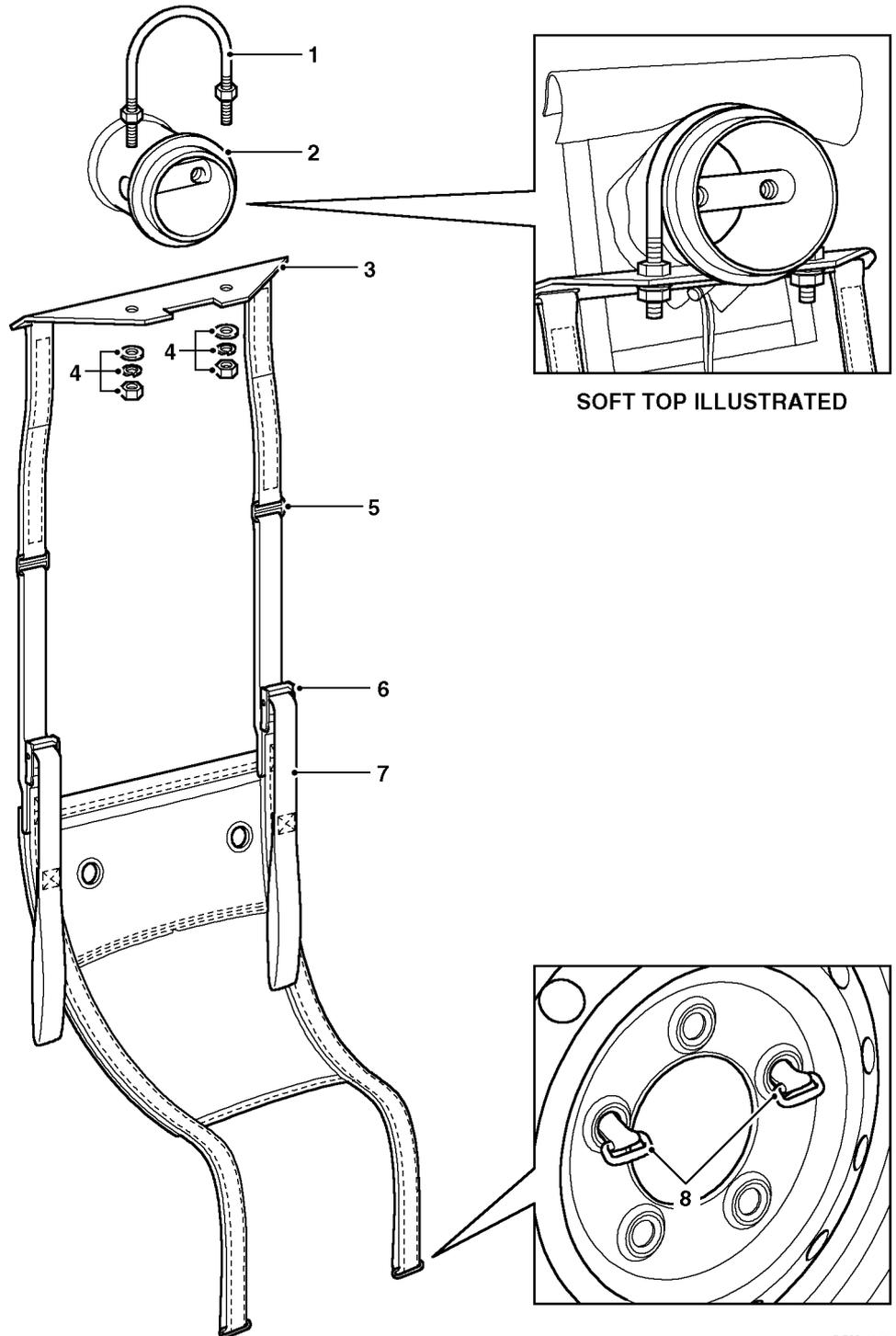
10 Nil.

EFFECT ON WEIGHT

11 Nil.

PUBLICATION AMENDMENTS

12 Nil.

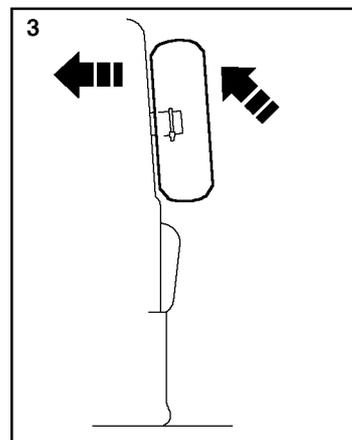
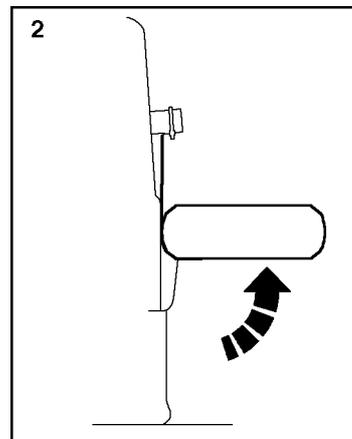
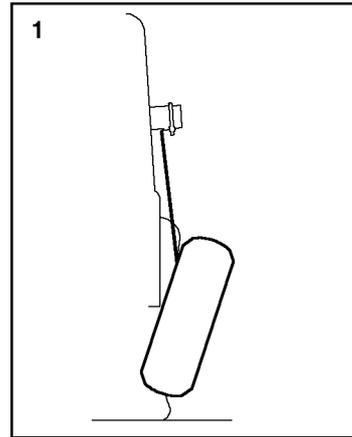
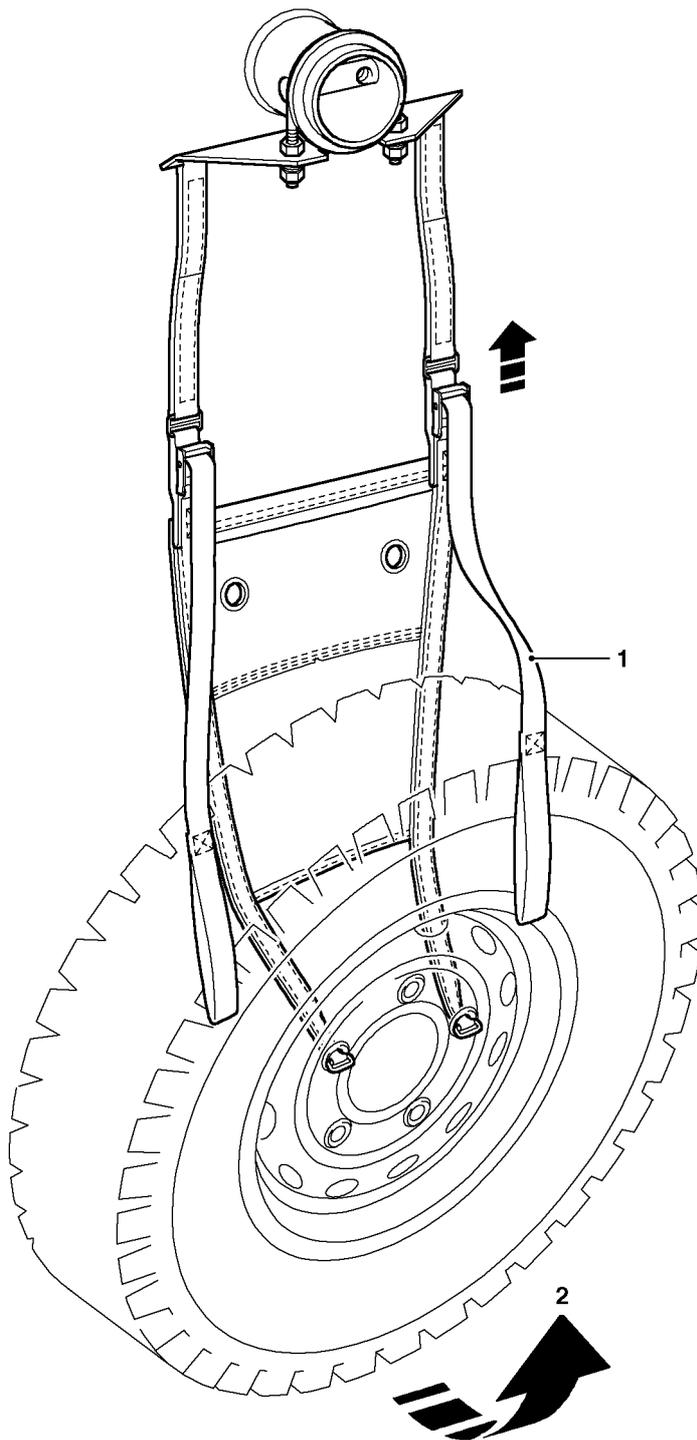


SOFT TOP ILLUSTRATED

MIL2040

- | | | | |
|---|---------------------|---|-------------------|
| 1 | 'U' Bolt | 5 | Harness |
| 2 | Spare wheel carrier | 6 | Adjustment cleats |
| 3 | Bracket | 7 | Adjustment straps |
| 4 | Nuts and washers | 8 | Harness stops |

Fig 1 Fitting the Spare wheel lifting aid harness.

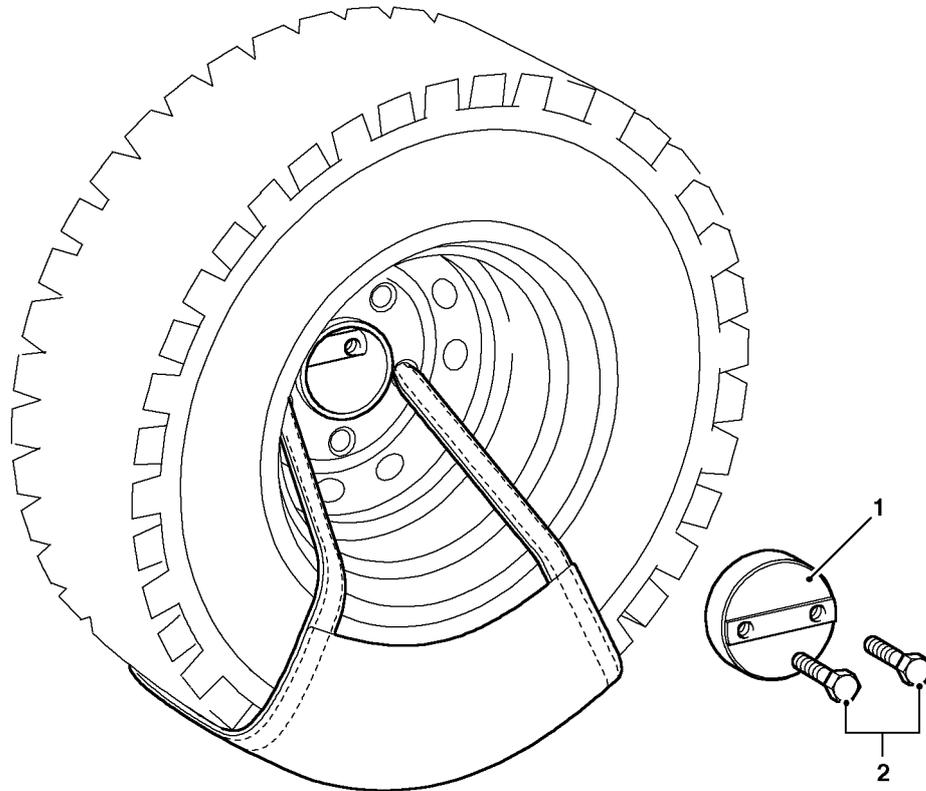


MIL2041

- 1 Use adjustment straps to lift wheel off ground
- 2 Rotate wheel through 180 degrees

- 3 Locate wheel on carrier

Fig 2 Lifting the spare wheel



MIL2042

1 Clamp

2 Bolts

Fig 3 Securing the spare wheel

**TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS**

MODIFICATION INSTRUCTION No. 26

Sponsor: SUV IPT
Project No: CSVS 034
File Ref: SUV /8/25/1B

Publication Authority: TES TI Andover

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Fitting of the stretcher retention strap system to the TUM Battlefield Ambulance
(Approval No. LSTP 12-6686)

INTRODUCTION

1 This instruction details the fitting of the Stretcher Retention Strap System to the Battlefield Ambulance (Mid Life Upgrade). This supersedes and replaces Cat 811 Modification Instruction No. 9.

1.1 Limitations on use of equipment. Nil.

APPLICABILITY

2 Battle Field Ambulance on the authority of Equipment Manager at DLO.

2.1 Fitted to equipment held by user units.

REASON FOR MODIFICATION

3 Code 1 - To improve Safety.

PRIORITY

4 Army: Routine.
RAF: Class 3.

ESTIMATED TIME REQUIRED

5 Embodiment: 3.0 man hrs.

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

6.1.1 ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.

6.1.2 RAF - Depot units when required.

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action. N/A

ACTION REQUIRED BY

7

7.1 Units and establishment holding equipment.

7.1.1 Examine vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary units with level 2 REME support demand the stores required.

7.1.3 ARMY – on receipt of stores, request REME to modify equipment.

7.1.4 ARMY – Record the modification, subject and the AESP number in equipment documents.

7.1.5 RAF – Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADPMTMS job certification sheet and to follow the procedures laid down in AP 100C - 08A.

7.2 Army units authorised to carry out levels 2, 3 and 4 maintenance and RAF units.

7.2.1 ARMY – When requested by users or during overhaul of equipment on charge without REME level 2 support, obtain the items listed in Para. 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.2.3 Complete AF G1084A when reporting completion of modification to FORWARD (RAF) using the following code.

RAF MODIFICATION CODE: AFN 173

NOTE

RAF units operating STAMA are also to complete ADP MTS job certification sheet and to follow the procedures laid down in 100C - 08A.

7.3 All receipts of this instruction. Add particulars to AESP ref. 2320-D128-811 Mod instr index.

Stores tools and equipment

8

8.1 Stores to be demanded.

8.1.1 The following set is to be demanded quoting this instruction authority.

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
	7XD	6530-99-613-6296	Stretcher Retention Strap System Comprising:	1
1	7XD	5340-99-891-7387	Stretcher Retention Strap	(8)
2	7XD	5340-99-147-6494	Velcro Stowage Strap	(12)
3	7XD	2540-99-498-8867	Stowage channel	(6)
4	7XD	2540-99-297-6921	Extension - front right	(2)
5	7XD	2540-99-584-6427	Extension - front left	(2)
6	7XD	2540-99-549-5852	Extension frame - rear	(4)
7			Hex hd screw M8 x 25	(8)
8			Hex hd screw M8 x 20	(12)
9			Hex hd screw M8 x 16	(4)
10			Hex hd screw M6 x 12	(12)
11			Spring washer M6	(12)
12			Spring washer M8	(32)
13			Plain washer M8	(24)
14			Plain washer M6	(12)
15			Rivet – Aluminium 5 x 13	(16)
16			Socket hd cap screw M8 x 35	(8)
17	7XD	7690-99-665-9430	Label - left	(2)
18	7XD	9905-99-666-5621	Label - right	(2)

Sequence of operations

NOTE

The item numbers in Para 8 are used as references throughout this instruction.

9 Carry out the modification as follows

9.1 Moving the upper stretcher racks rear bump-stop brackets.

Refer to Fig 1.

9.1.1 Lower the left upper stretcher rack to gain access to the left rear bump-stop bracket.

9.1.2 Mark out and centre punch the positions of the new rivet holes.

9.1.3 Drill the new rivet holes (5mm dia).

Caution**Drilling. Drill through the inner skin of the vehicle body only**

9.1.4 Drill out the existing rivets and remove the bump-stop bracket.

9.1.5 De-burr all holes.

9.1.6 Attach the bump-stop bracket in the new forward position using 4 rivets (item 15).

9.1.7 Blank off original holes using further 4 rivets (item 15).

9.1.8 Raise and secure the left upper stretcher rack.

9.1.9 Repeat Paras 9.1.1 to 9.1.8 on the right hand side of the vehicle.

9.1.10 Remove all swarf from the vehicle.

9.2 Fitting of the Rear Frame Extensions.

Refer to Fig 2.

NOTE

The Rear Frame Extensions are to be fitted to the lower stretcher racks only.

9.2.1 Mark out and centre punch the positions of the four pairs of holes.

9.2.2 Drill the holes (8.5mm dia).

9.2.3 Deburr all holes.

9.2.4 Fit the 4 off Extension Frame Rear (item 6), using 8 off Hex hd screw M8 x 25 long (item 7), 8 off Plain Washer M8 (item 13) and 8 off Spring Washer M8 (item 12).

9.2.5 Tighten the Hex hd screws to 10Nm.

9.2.6 Remove all swarf from the vehicle.

9.3 Fitting of the Front Frame Extensions

Refer to Fig 3

NOTE

The Front Frame Extensions are to be fitted to the lower stretcher racks only.

9.3.1 Remove and discard the nuts and bolts that retain the spring loaded channel end bracket.

Caution

The End Bracket limits the upward travel of the spring loaded channel against significant force. Take care not to dislodge the End Bracket as difficulty may be experienced in relocating the End Bracket back into its mounting.

9.3.2 Fit 2 off Extension Front Right (item 4) and 2 off Extension Front Left (item 5) using 8 off Socket hd cap screw M8 x 35 long (item 16) and 8 off spring washer M8 (item 12).

9.3.3 Tighten the socket head cap screws to 10Nm.

9.4 Fitting of the Stowage Channels and Stretcher Retention Straps

Refer to Fig 4

NOTE

A total of 6 off Stowage Channels are to be fitted to the Front Frame Extensions (both sides) and the upper stretcher racks (front and rear both sides). Holes are provided in the Front Frame Extensions but new holes must be drilled in the upper stretcher racks.

9.4.1 Lower the upper stretcher racks.

9.4.2 Mark out and centre punch the positions of the four pairs of holes.

9.4.3 Drill the holes (8.5mm dia).

9.4.4 De-burr all the holes.

9.4.5 Fit 6 off Stowage Channels (item 3), 6 off Stretcher Retention Straps (item 1) using 12 off Hex hd screws M8 x 20 long (item 8), 12 off plain washers M8 (item 13) and 12 off spring washers M8 (item 12).

NOTE

For orientation of the Stretcher Retention Straps, refer to Para 9.5.

9.4.6 Tighten the hex head screws to 10Nm.

9.4.7 Raise and secure the upper stretcher racks.

9.4.8 Remove all swarf from the vehicle.

9.5 Fitting of the Stretcher Retention Straps to the Rear Frame Extensions

Refer to Fig 5

NOTES

Proper functioning of the Stretcher Retention Strap System relies on correct orientation of the straps. Ensure that:

- (1) The looped end of the strap (A) is positioned toward the vehicle centreline.
- (2) The buckle release lever (B) is on top of the strap.
- (3) Tensioning is achieved by pulling the free end (C) toward the vehicle centreline.
- (4) The strap (D) is not twisted.
- (5) The strap end anchor plates (E) are fitted level (not twisted around the screw).

9.5.1 Fit 2 off Stretcher retention Straps (item 1) using 4 off Hex hd screw M8 x 16 long (item 9) 4 off plain washer M8 (item 13) and 4 off spring washer M8 (item 12).

9.5.2 Tighten the hex head screws to 10Nm.

9.6 Fitting of the Velcro Stowage Straps to the Stowage Channels

Refer to Fig 6

NOTE

When carrying out the installation of the Stretcher Retention Strap System on a large number of vehicles, it is advisable to fit the Velcro Stowage Straps to the Stowage Channels prior to fitting the Stowage Channels (Para 9.4).

9.6.1 Lower the upper stretcher racks.

9.6.2 Fit 12 off Velcro Stowage Straps (item 2) to the Stowage Channels (item 3) using 12 off Hex hd screws M6 x 12 long (item 10), 12 off plain washers M6 (item 14) and 12 off spring washers M6 (item 11).

9.6.3 Tighten the hex head screws to 5Nm.

9.6.4 Lay the Stretcher Retention Straps (item 1) in the Stowage Channels (item 3) and secure with the Velcro Stowage Straps (item 2).

9.6.5 Raise and secure the upper stretcher racks.

9.7 Fitting of the labels to the stretcher racks

Refer to Fig 7

NOTES

The Labels are handed left and right. Ensure that:

- (1) The Labels are orientated to be read from the rear of the vehicle.
- (2) The labels depict the loose end of the strap being pulled toward the vehicle centreline (Para 9.5).

9.7.1 Ensure the areas where the labels will be fitted are thoroughly free of grease, oil and any other contamination.

9.7.2 Fit 2 off Label – left (item 17) and 2 off Label -right (item 18): one Label at the rear of each of the four stretcher racks.

TESTING AFTER EMBODIMENT

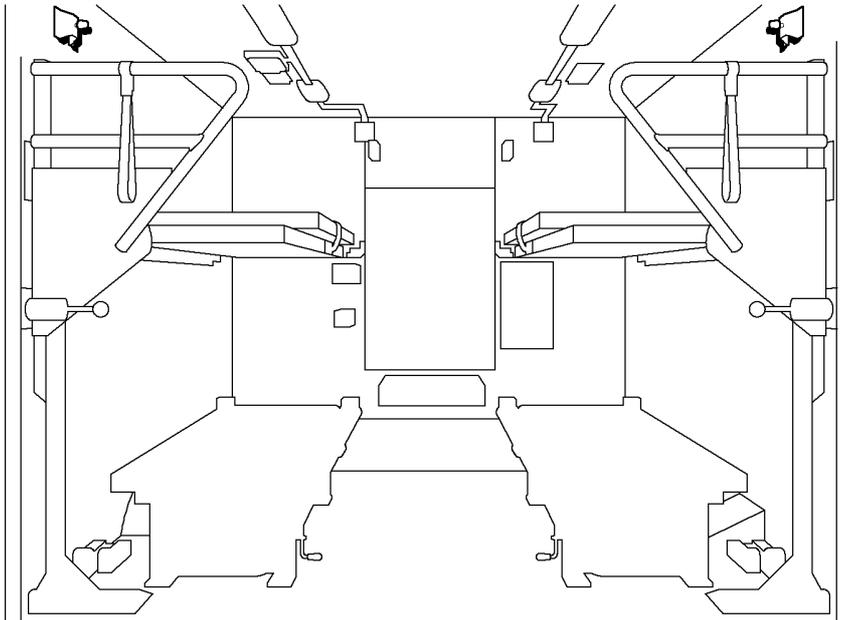
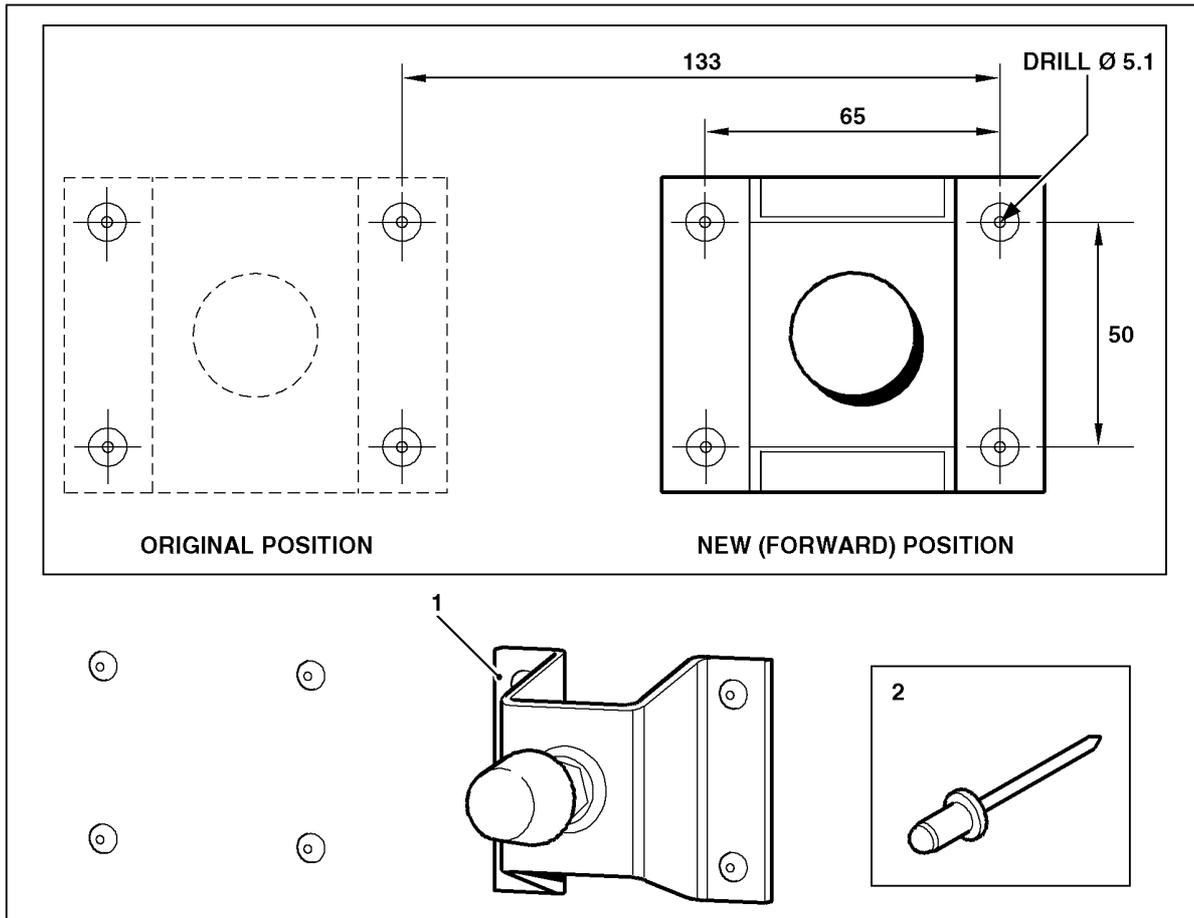
10 Nil.

EFFECT ON WEIGHT

11 Negligible.

PUBLICATION AMENDMENTS

12 Necessary amendments will be issued separately.

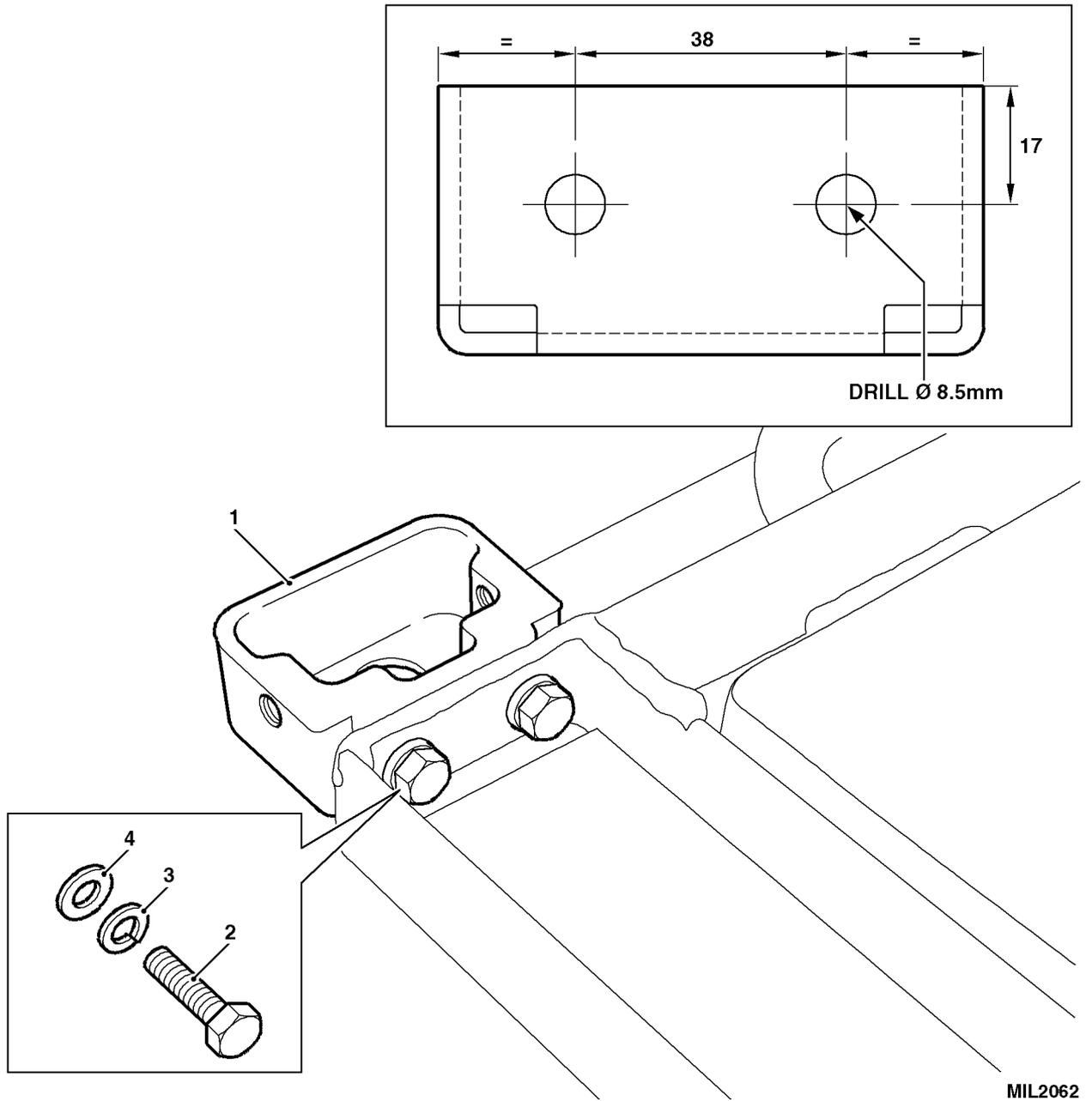


MIL2061

1 Bump stop

2 Rivet

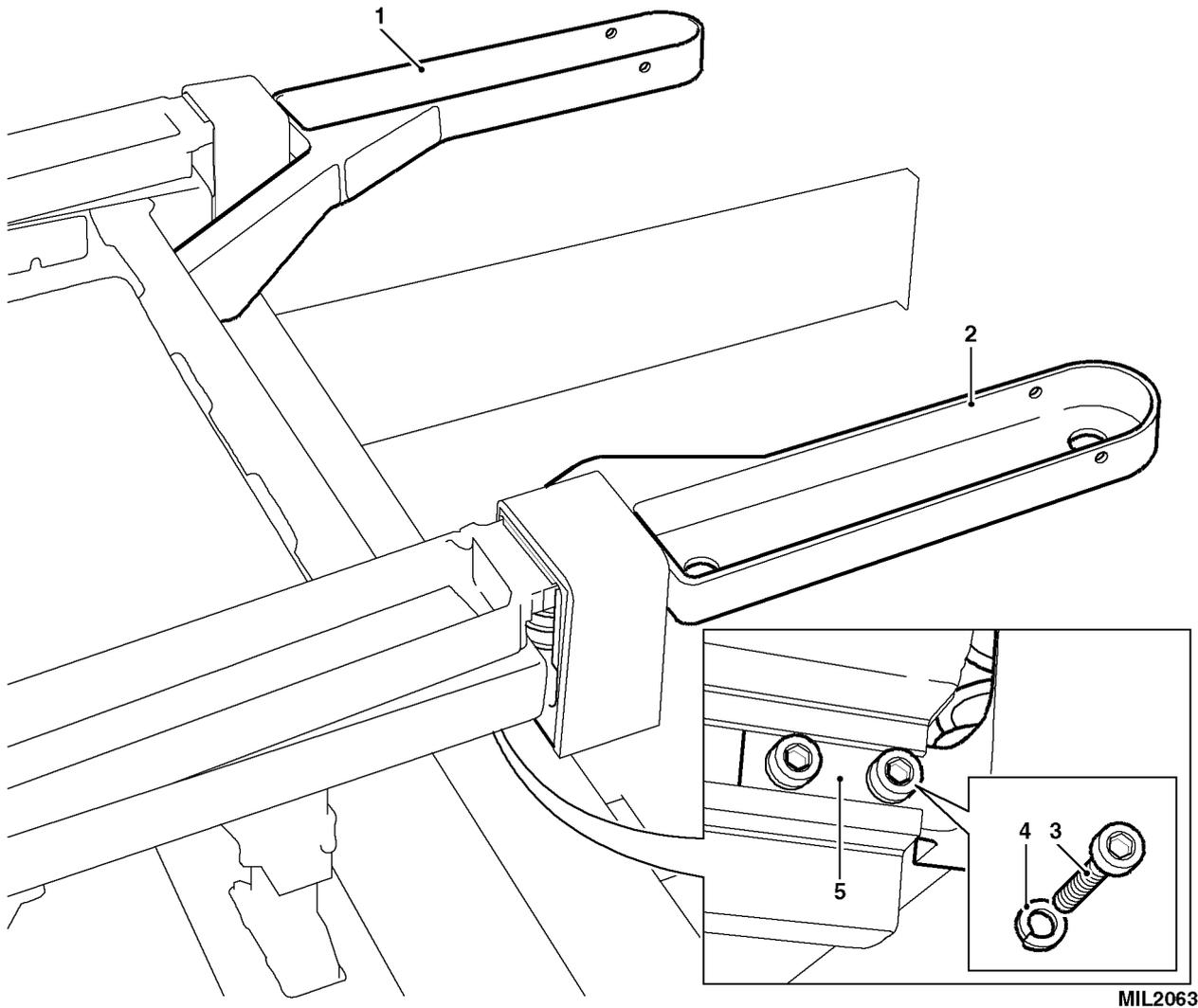
Fig 1 Moving the upper stretcher rack rear bump-stop brackets



MIL2062

- | | | | |
|---|----------------------|---|---------------|
| 1 | Rear Frame Extension | 3 | Spring Washer |
| 2 | Screw | 4 | Plain Washer |

Fig 2 Fitting the Rear Frame Extensions (Lower Stretcher Rack)

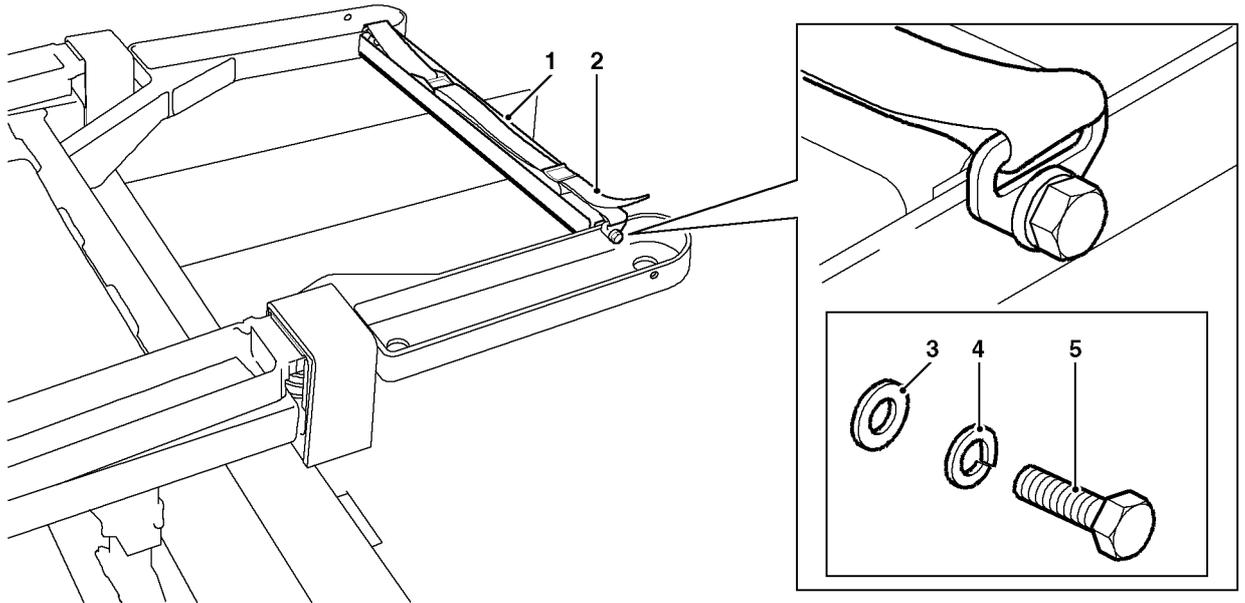


MIL2063

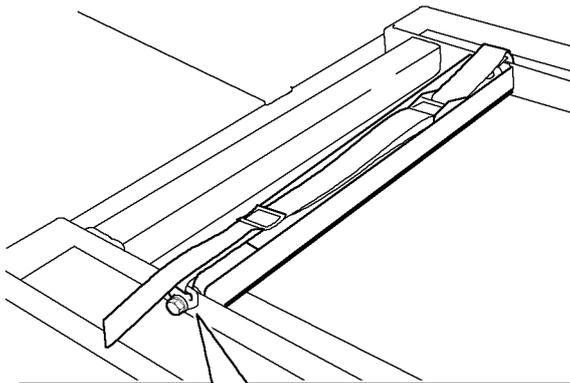
- | | | | |
|---|----------------------------|---|---------------------|
| 1 | Front Frame Extension - LH | 4 | Spring Washer |
| 2 | Front Frame Extension - RH | 5 | Channel End Bracket |
| 3 | Cap screw | | |

Fig 3 Fitting of the Front Frame Extensions (Lower Stretcher Rack)

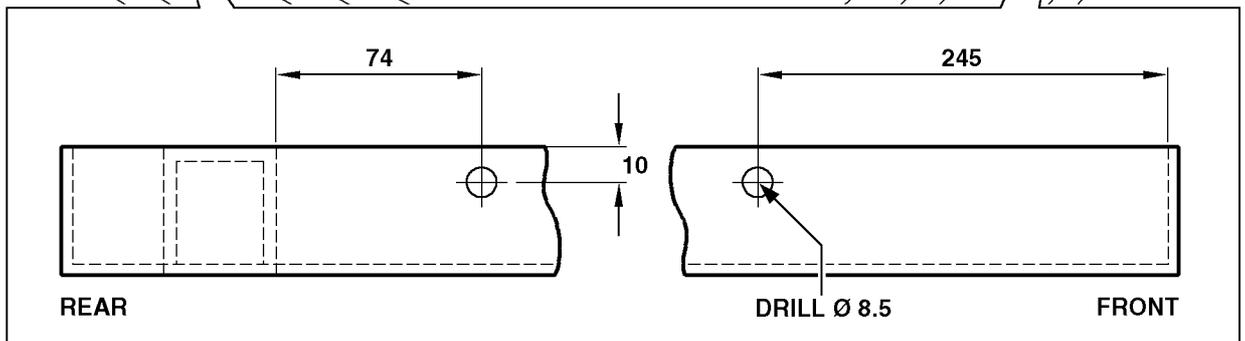
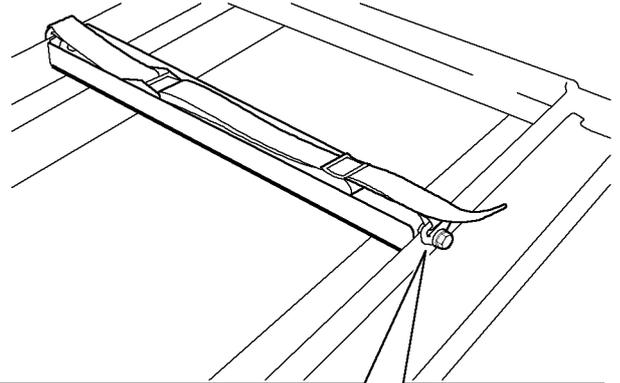
FRONT FRAME EXTENSIONS



UPPER STRETCHER RACK - REAR



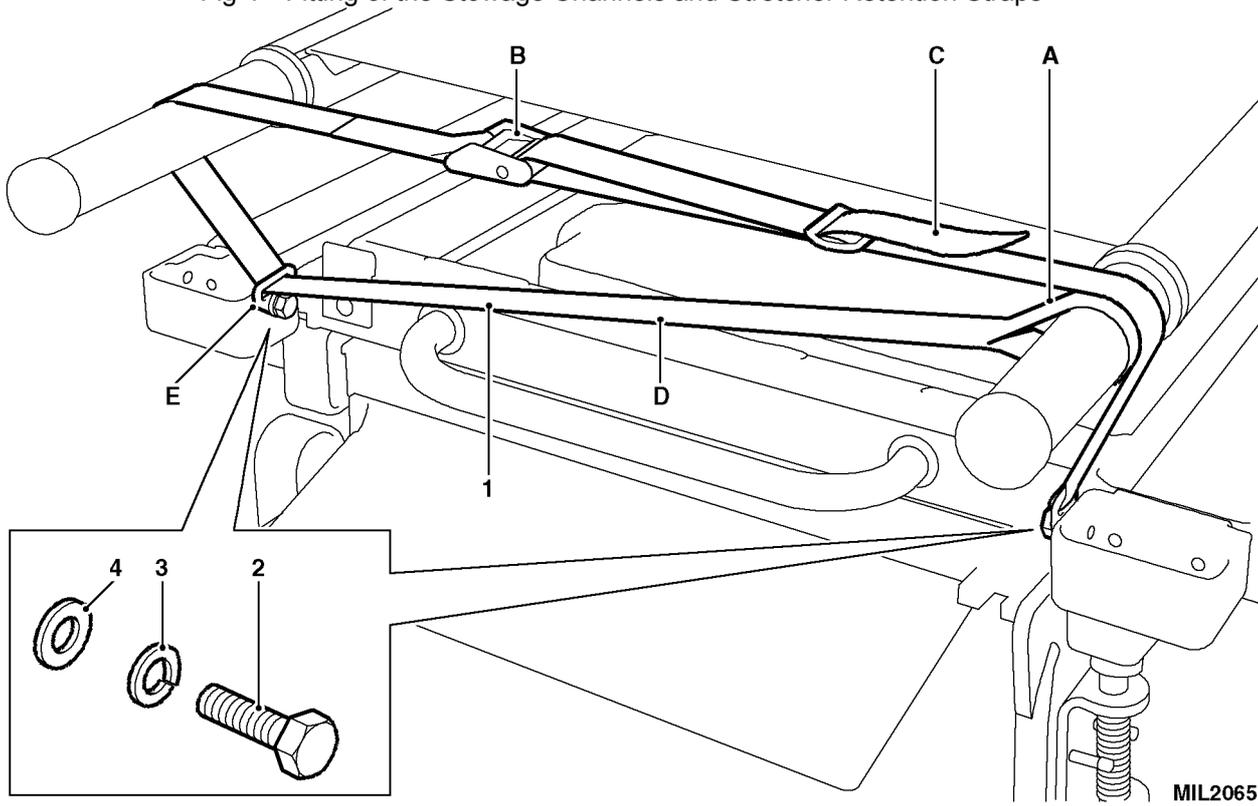
UPPER STRETCHER RACK - FRONT



MIL2064

- | | | | |
|---|---------------------------|---|---------------|
| 1 | Storage Channel | 4 | Spring Washer |
| 2 | Stretcher Retention Strap | 5 | Screw |
| 3 | Plain Washer | | |

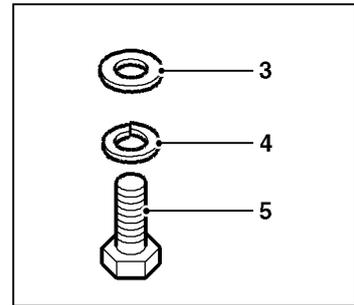
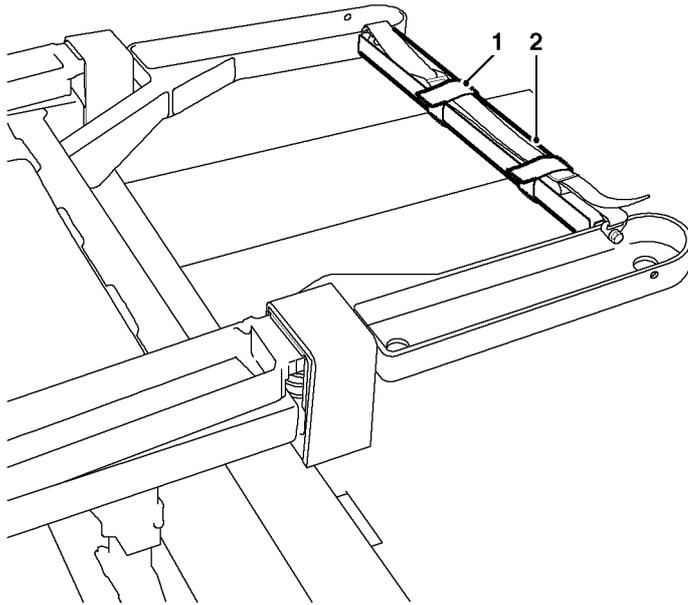
Fig 4 Fitting of the Stowage Channels and Stretcher Retention Straps



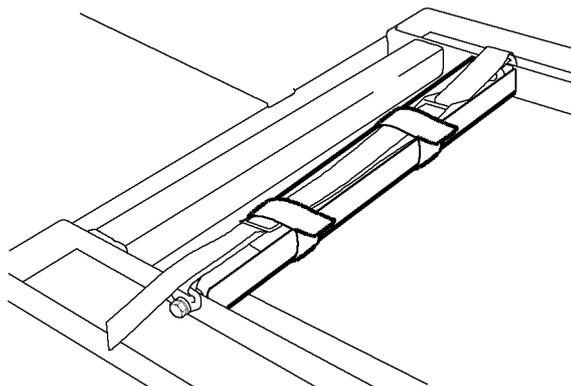
- | | | | |
|---|---------------------------|---|--------------|
| 1 | Stretcher Retention Strap | 4 | Plain Washer |
| 2 | Screw | | |
| 3 | Spring Washer | | |

Fig 5 Fitting of the Stretcher Retention Straps to the Rear Frame Extensions (Lower Stretcher Strap)

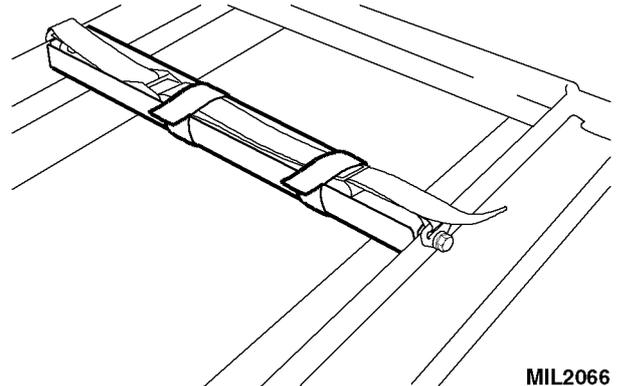
FRONT FRAME EXTENSIONS



UPPER STRETCHER RACK - REAR



UPPER STRETCHER RACK - FRONT

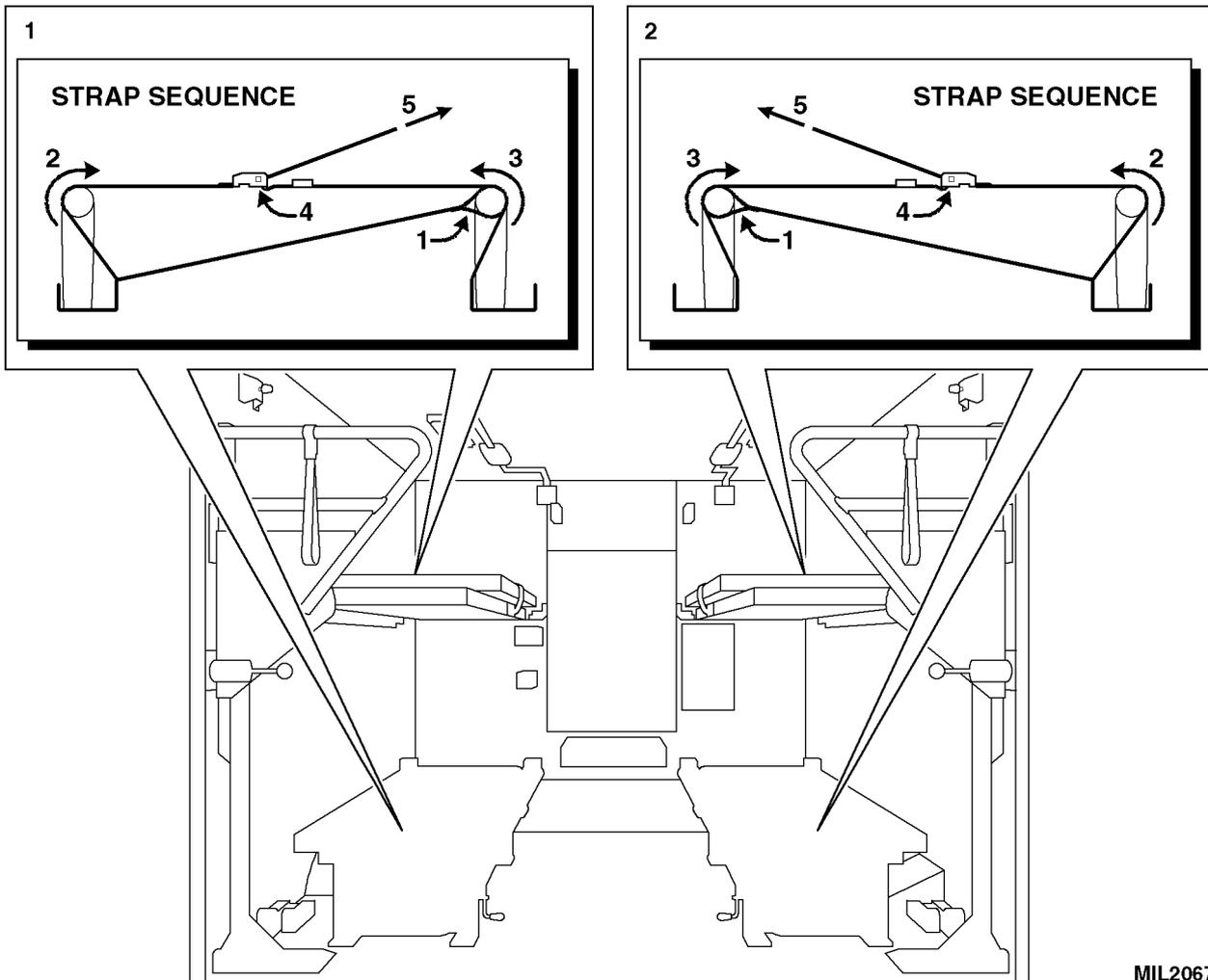


MIL2066

- 1 Velcro Stowage Strap
- 2 Stowage Channel
- 3 Plain Washer

- 4 Spring Washer
- 5 Screw

Fig 6 Fitting of the Velcro Stowage Straps to the Stowage Channels



MIL2067

1 Label - LH

2 Label - RH

Fig 7 Fitting of the Labels to the stretcher racks

TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION No. 27

Sponsor: SUV IPT - DLO Andover
Project No.:
File Ref: SUV/8/25/1B
Publication Authority: CTS TD Andover

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date
1		
2		
3		

Amdt No.	Incorporated By (Signature)	Date
4		
5		
6		

SUBJECT: Input/Output Porthole for communication cables, cover modification

INTRODUCTION

1

1.1 Limitations on use of equipment. Nil.

APPLICABILITY

2 TUL, TUM (HS), FFR, Soft Top and Hard Top vehicles only.

2.1 Fitted to all equipment held by user units.

2.2 Unmodified stock, held at all levels of technical storage.

REASON FOR MODIFICATION

3

3.1 Code 2 – to improve operational performance.

PRIORITY

4

4.1 ARMY: Routine.

4.2 RAF: Class 3

ESTIMATED TIME REQUIRED

5

5.1 Embodiment: 30 minutes

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This instruction is to be implemented by:

6.1.1 ARMY – Units authorized to carry out levels 2, 3 or 4 maintenance.

6.1.2 RAF – Units not later than the next routine maintenance and Vehicle Depots before the next issue of vehicle.

Action required by

7

7.1 Units and establishments holding equipment.

7.1.1 Examine equipment documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary Units with 1st Line REME Support demand the stores required.

7.1.3 ARMY – On receipt of stores, request REME to modify equipment.

7.1.4 ARMY – Record the AESP and instruction number in equipment documents.

7.1.5 RAF – Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADP MTMS Job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

7.2 Army units authorized to carry out levels 2, 3 and 4 maintenance and RAF units.

7.2.1 ARMY – When requested by units or during overhaul of equipment on charge without REME 1st Line Support, obtain the items listed in Para 8 and carry out this modification.

7.2.2 Complete AF G1084A when reporting completion of the modification to FORWARD (RAF) using the following code:

RAF: MODIFICATION CODE: AFN 174

NOTE

RAF units operating STAMA are also to complete ADP MTMS Job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

7.3 All recipients of this instruction. Add particulars to AESP 2320-D-128-811 Instr Index.

Stores, tools and equipment

8

8.1 Stores to be demanded.

8.1.1 The following item(s)/set are/is to be demanded quoting this instruction as the authority.

Item No.	DMC	NSN/Part No.	Designation	Qty per eqpt
	7XD	2590-99-579-7988	Mod set: comprising	2
1		NP	Ferrule	(1)
2		NP	Screw	(1)
3		NP	Washer	(1)
4	7XD	2590-99-261-5406	Porthole Cover	As required
8.2 <u>Stores or suitable equivalent to be obtained locally.</u>				
5	H1ATS	8030-99-224-8261	Loctite 241 (Blue) 10 ml (Loctite 242 / 243 acceptable, if available from stock)	As required
8.3 <u>Tools and stores equipment required.</u>				
6	G1	5133-99-910-8618	HSS Drill 6.00 mm	1

Sequence of operations

NOTE

The item numbers of Para 8 are used as reference throughout this instruction.

9 Carry out this instruction as follows:

9.1 For porthole removal and replacement instructions, Refer to AESP 2320-D-128-811, Mod Inst No 8.

9.2 Remove existing import/export outer porthole sleeve from vehicle body.

9.3 Remove sliding cover from porthole sleeve and retain. Discard self-tapping screw and washer. If cover/s have been lost, demand replacement covers (item 4) as required.

9.4 If porthole cover spigot is still intact, carefully cut off flush to main body. Refer to Fig 1. If spigot has sheared off by rotation of cover, proceed to 9.5.

9.5 Supporting outer porthole sleeve, drill (item 6) through the centre line of the cover spigot.

NOTE

Care must be taken not to enlarge the hole whilst drilling; otherwise the interference fit of the ferrule in the sleeve will be lost. Refer to Fig 2.

9.6 From the inner side of the sleeve, support sleeve and carefully tap ferrule (item 1) into the hole in the porthole sleeve until flush. Refer to Fig 3 and 4.

9.7 Replace porthole cover. Apply Loctite 241 (item 5, or equivalent) to bottom of screw thread (item 2), and secure cover with screw and washer (item 3) to porthole sleeve. Refer to Fig 5.

NOTE

Do **not over tighten** securing screw, as this will rotate ferrule in porthole sleeve.

9.8 Refit porthole sleeve to vehicle. Check porthole cover unlocks and slides to upright position.

TESTING AFTER EMBODIMENT

10 Nil.

EFFECT ON WEIGHT

11 Negligible.

PUBLICATION AMENDMENTS

NOTE

Necessary amendments will be issued separately.

12 Nil.



Fig 1



Fig 2



Fig 3

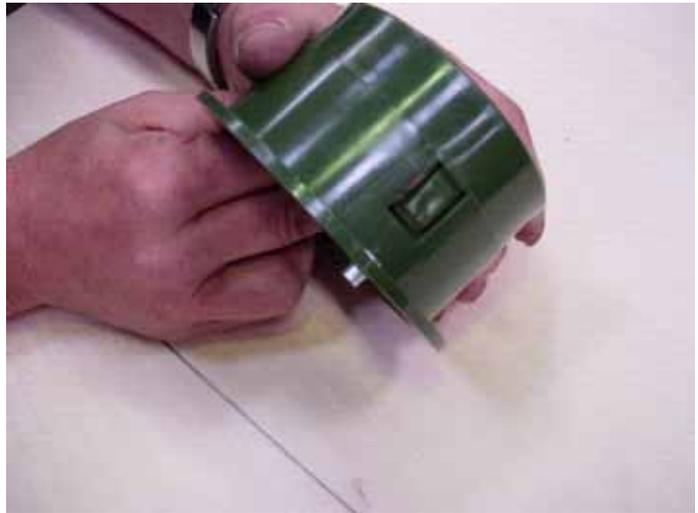


Fig 4



Fig 5

TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION No. 28

Sponsor: SUV IPT
Project No.:
File Ref: SUV /8/25/1B

Publication Authority: TES TI Andover

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date
1		
2		
3		

Amdt No.	Incorporated By (Signature)	Date
4		
5		
6		

SUBJECT: Fitting of Rear Anti-Roll Bar (RARB)

INTRODUCTION

1 Embodiment of the BOWMAN communication system into the Land Rover TUM (HS) FFR and WMIK fleet has raised weight, Centre of Gravity and handling implications. This has resulted in restrictions in the use of the equipments. The fitment of a Rear Anti-Roll Bar (RARB) will allow increased axle loads and an overall payload increase of 150 kg, for the subject vehicles. Embodiment of the RARB modification is being conducted under Project SHOEHORN.

1.1 Limitations on use of equipment. The fitment of the RARB will allow the lifting of previous use and speed restrictions, except those still separately specified in JSP 341.

APPLICABILITY

2

2.1 The following vehicle types will require the SHOEHORN modification:

Asset Code	Designation
5020 3100	TUM (HS) FFR Hard Top
5020 3101	TUM (HS) FFR Hard Top Odette DF VIK
5020 3102	TUM (HS) FFR Hard Top Odette IC VIK
5020 3103	TUM (HS) FFR Hard Top Odette TCAD VIK
5020 8100	TUM (HS) FFR Hard Top LHD
5020 8104	TUM (HS) FFR Hard Top LHD NBC Support
5021 3100	TUM (HS) FFR Hard Top Winterised/Waterproofed
5022 3100	TUM (HS) FFR Hard Top Commanders VIK

Asset Code	Designation
5030 3100	TUM (HS) FFR Soft Top WMIK
5030 3101	TUM (HS) FFR Soft Top Phase 1 WMIK
5030 3102	TUM (HS) FFR Hard Top Phase 1 WMIK
5031 3100	TUM (HS) FFR Soft Top RHD
5031 8100	TUM (HS) FFR Soft Top LHD
5035 3100	TUM (HS) FFR Hard Top Sigs
5042 3100	TUM (HS) GS Hard Top Winterised Heli Support

2.2 Unmodified stock, held at all levels of technical storage.

REASON FOR MODIFICATION

3

3.1 Code 2 - to improve operational performance.

PRIORITY

4

4.1 ARMY: (including RM) Immediate.

4.2 RAF: Class 1.

MODIFICATION IMPLEMENTATION PLAN

5 This instruction is to be implemented by ABRO Workshops only, under the Authority and Control of SUV IPT, DLO Andover, in accordance with the priorities set by Front Line Commands: HQ FLEET, HQ LAND and HQ STC.

Action required by

6

6.1 Units and establishments holding equipment.

6.1.1 Examine equipment documents to see if modification is applicable.

6.1.2 ARMY - Record the AESP and instruction number in equipment documents.

6.1.3 RAF - Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADP MTMS Job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

6.2 Army units authorized to carry out levels 2, 3 and 4 maintenance and RAF units.

6.2.1 Record completion details of modification against appropriate entry in vehicle documents.

6.2.2 Complete AF G1084A when reporting completion of the modification to FORWARD (RAF) using the following code:

RAF: MODIFICATION CODE: AAN 028

NOTE

RAF units operating STAMA are also to complete ADP MTMS Job Certification Sheet and follow the procedures laid down in AP 100C-08A.

6.3 All recipients of this instruction. Add particulars to: AESP 2320-D-128-811 Mod Instr Index.

TESTING AFTER EMBODIMENT

7 Nil.

EFFECT ON WEIGHT

8 Negligible.

PUBLICATION AMENDMENTS

NOTE

Necessary amendments will be issued separately.

9 Nil.

**TRUCK UTILITY LIGHT (TUL) HS TRUCK UTILITY MEDIUM (TUM) HS
AND TUM BATTLEFIELD AMBULANCE HS**

MODIFICATION INSTRUCTION No. 29

Sponsor: SUV IPT
Project No.:
File Ref: SUV/8/25/1B

Publication Authority: TES TI Andover

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date
1		
2		
3		

Amdt No.	Incorporated By (Signature)	Date
4		
5		
6		

SUBJECT: Spare wheel adaptor plates; left and right hand installation

INTRODUCTION

1

1.1 The introduction of the BOWMAN system has highlighted difficulties in the ability to move the spare wheel to either side of the vehicle. This modification details the fitting of spare wheel adaptor plates to both sides of the vehicle, which become a permanent fit. The kit also includes a wheel retaining cylinder that can be easily fitted to either adaptor plate enabling the spare wheel to be moved to either side of the vehicle. This will enable the vehicle to retain the original capability.

1.2 Limitations on use of equipment. Nil.

APPLICABILITY

2

2.1 TUM, (HS), FFR, HT and ST (NB 5020s, NB 5021s and NB 5031s).

2.2 Unmodified stock, held at all levels of technical storage.

REASON FOR MODIFICATION

3

3.1 Code 2 - to retain operational performance.

PRIORITY

4

4.1 ARMY: Immediate

4.2 RAF: Class 1.

ESTIMATED TIME REQUIRED

5

- 5.1 Dismantling: If previously fitted with BOWMAN 1.5 man-hours.
- 5.2 Embodiment: If previously fitted with BOWMAN 1.5 man-hours.
- 5.3 Dismantling: 0.5 man-hours.
- 5.4 Embodiment: 0.75 man-hours.

MODIFICATION IMPLEMENTATION PLAN

6

- 6.1 This instruction is to be implemented by:
 - 6.1.1 ARMY - Units authorized to carry out levels 2, 3 or 4 maintenance.
 - 6.1.2 RAF - Units not later than the next scheduled maintenance.

Action required by

7

- 7.1 Units and establishments holding equipment.
 - 7.1.1 Examine equipment documents to see if modification is applicable.
 - 7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary Units with 1st Line REME Support demand the stores required.
 - 7.1.3 ARMY - On receipt of stores, request REME to modify equipment.
 - 7.1.4 ARMY - Record the AESP and instruction number in equipment documents.
 - 7.1.5 RAF - Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADP MTMS Job Certification Sheet and to follow the procedures laid down in AP 100C-08A.
- 7.2 Army units authorized to carry out levels 2, 3 and 4 maintenance and RAF units.
 - 7.2.1 ARMY - When requested by units or during overhaul of equipment on charge without REME 1st Line Support, obtain the items listed in Para 8 and carry out this modification.
 - 7.2.2 Record completion details of modification against appropriate entry in vehicle documents.
 - 7.2.3 Complete AF G1084A when reporting completion of the modification to FORWARD (RAF) using the following code:

RAF: MODIFICATION CODE: ANN 028.

NOTE

RAF units operating STAMA are also to complete ADP MTMS Job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

7.3 All recipients of this instruction. Add particulars to AESP 2320-D-128-811 Instr Index.

Stores, tools and equipment

8

8.1 Stores to be demanded.

8.1.1 The following item(s)/set are/is to be demanded quoting this instruction as the authority.

Item No.	DMC	NSN/Part No.	Designation	Qty per eqpt
	7XD	2540-99-982-0182	Mod set: comprising	1
1		LR 2420003A	Mounting Bracket, Left Hand	(1)
2		LR 2420004A	Mounting Bracket, Right Hand	(1)
3		LR 2420005A	Spare Wheel Mount	(1)
4		LR 2420007A	Spare Wheel Mount Securing Bolts (M12 x 40 Allen Head)	(3)
5		LR 2420008A	Lock Washer (M12)	(3)
6	7XD	5305-99-454-3492	Mounting Bracket Flanged Bolts (M8)	(4)
7	7XD	5120-99-599-6378	Installation Key (10 mm Allen Key)	(1)
8	7XD	2540-99-149-9435	Hard Top Blanking Plate Kit: comprising	1
9			Hard Top Blanking Plate (with gasket)	(1)
10			'U' Spring Clips	(2)
11			No. 10 Self Tapping Screw	(1)

8.2 Stores to be removed and reduced to scrap.

12	7XD	2590-99-317-5892	Spare Wheel Mounting Bracket	1
13	7XD	2590-99-147-2989	Hard Top Blanking Plate	1

Sequence of operations

NOTE

Where the vehicle has already been through the Bowmanisation programme, the AAC (Automatic Antenna Coupler) will have to be removed and the AAC mounting plate detached from the framework. This will enable the RADHAZ curtain to be partly detached and rolled up to gain access to the original spare wheel mounting plate. (Some variants may have an AAC fitted to both sides). For ST (soft top) variants the soft top can be rolled up from outside to gain access to the mounting plates.

9

9.1 Remove spare wheel from vehicle as per AESP 2320-D-128-201, Chap 4-1, Pages 41 - 45, retain spare wheel clamping plate and bolts for re-use. Remove and discard the hard top blanking plate and fixings (item 13) from the opposite side of the vehicle.

9.2 If vehicle has not been fitted with BOWMAN, or is a ST (see above) proceed to Serial 10.

9.3 Disconnect top earthing braid from the AAC (Automatic Antenna Coupler). Supporting the ACC, remove the four bolts (arrowed) in Fig 1 retaining the AAC, including the lower earth braid and carefully lift the AAC from its mounting plate.

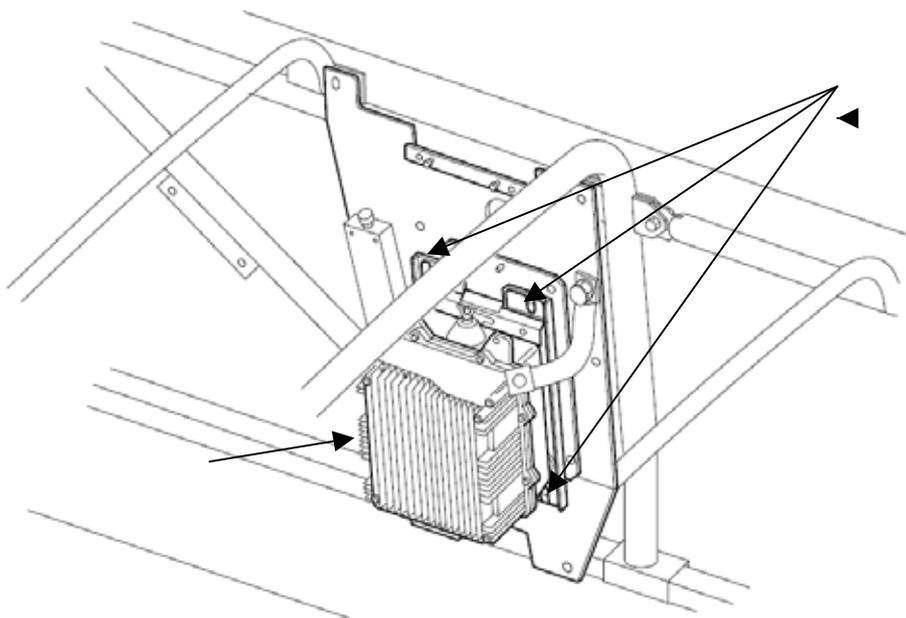


Fig 1

9.4 Remove the AAC AKEE mounting plate by undoing the four bolts (arrowed) in Fig 2.

NOTE

Do not disconnect the wiring attached to the AAC AKEE mounting plate, move plate round and place on adjacent racking during the operation.

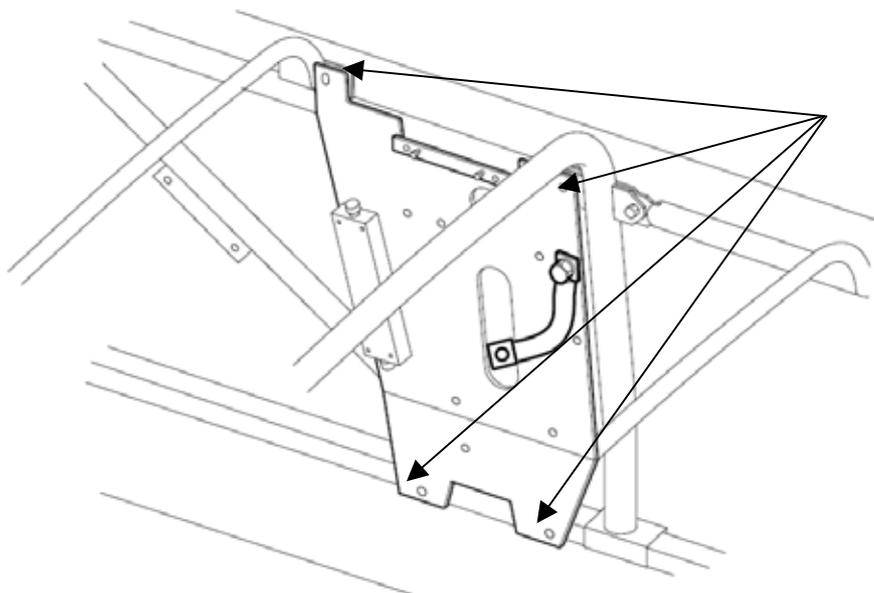


Fig 2

9.5 AESP 2320-D-128-811, Mod Inst No 12 refers to the installation of the RADHAZ curtain. **Take extreme care not to damage the RAZHAD curtain during this operation.** Working from the inside of the vehicle, remove the two lower and the front upper securing screws together with the earthing braid from the front section of the RADHAZ curtain, being careful to retain the metal spacers for reassembly.

9.6 Carefully roll the RADHAZ curtain up between the roll cage and the hard top to gain access to spare wheel mounting plate, and remove the qty 4, M8 flanged bolts (retain for re-use) securing the spare wheel plate to the roll cage.

9.7 Working from the outside of the vehicle, carefully remove the rubber gasket and foam packing. Then from the inside, rotate the spare wheel plate so that it will fit between the roll cage and can be moved outwards so it is flush against the hard top. Wedge the spare wheel plate against the hard top, by using a suitable piece of packing (wood or hard foam) between the plate and the roll cage. The packing dimension will vary due to variations in build standards from the factory.

WARNING

HEALTH AND SAFETY. ENSURE PROTECTIVE CLOTHING AND GOGGLES ARE WORN WHEN CARRYING OUT THE NEXT OPERATION.

9.8 Using a protective shield around the mounting cylinder on the outside of the vehicle, (the rubber gasket can be used provided it is not damaged in the process) to protect the hard top from damage; with the aid of helper supporting the spare wheel mounting cylinder, angle grind the wheel mounting cylinder off the retaining plate. Once the cylinder has been cut from the plate; (being careful of sharp edges and the BOWMAN equipment in the vehicle), working from inside the vehicle manoeuvre the plate into a suitable position, and remove from the vehicle.

Fitting spare wheel adaptor plates

10

10.1 Working from inside the vehicle remove the four bolts securing the original spare wheel mounting bracket, retain gasket, seal and fixings for re-use. Discard old spare wheel mounting bracket (item 12).

NOTE

The new mounting plates are handed, and identified on the outer face with a letter stamp. L = left hand part (item 1). R = right hand part (item 2). Vehicle left and right is based on operator sitting in driving position, facing forward. Remove and discard the qty 8 (green) protective patches before fitting. Once fitted the hole orientation for the spare wheel mounting bracket should appear as shown in Fig 3, on both sides.

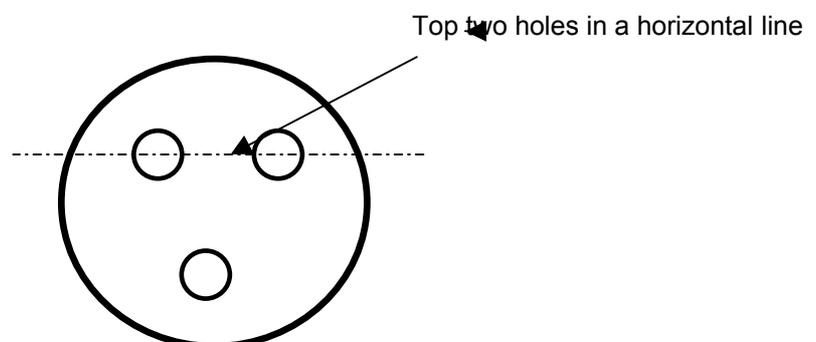


Fig 3

10.2 Fit the two base mounting plates (items 1 and 2) to the existing mounting positions. Use the existing bolts for one side and the four new M8 flanged bolts (item 6) for the other.

10.3 Tighten the mounting bracket securing screws (M8 x 25) four per bracket, to 25 Nm.

10.4 Working from outside the vehicle, feed the body gaskets through the hole in the hard top, ensure the foam seal is against the spare wheel bracket and the larger diameter rubber seal is against the inside of the hard top and both are in-line with the mounting boss. Ensure the fitting is to the correct side for vehicle use.

10.5 Fit the spare wheel mounting bracket (item 3) through the gaskets, over the mounting spigot and align the mounting holes. Supporting the spare wheel mounting bracket install the qty 3 Allen headed fixings (item 4) and washers (item 5), tighten by hand ensuring the gasket is not trapped.

NOTE

Once fitted the spare wheel mounting bracket (item 3) should appear as Fig 4.

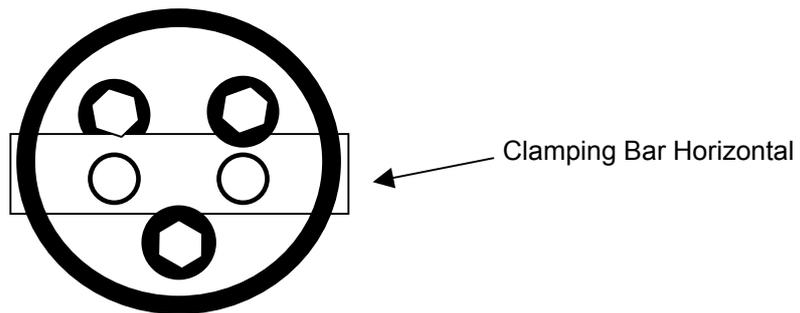


Fig 4

10.6 Using the tool supplied (Installation key, item 7) tighten the three Allen head fixing screws to 110 Nm. **Installation key, item 7 to become part of vehicle CES on completion.**

Re-check torque tightness of all fixings after 100 km.

Fitting hard top blanking plate

11

11.1 Working from outside the vehicle, measure and mark a point 7 mm from the edge of the hole at the "12 o'clock" position. See Fig 5.

WARNING

HEALTH AND SAFETY. ENSURE PROTECTIVE CLOTHING AND GOGGLES ARE WORN WHEN CARRYING OUT THE NEXT OPERATION.

11.2 Using a suitable drill and bit, drill a single 6 mm diameter hole. Be careful not to damage or drill through the rubber gasket or foam seal.

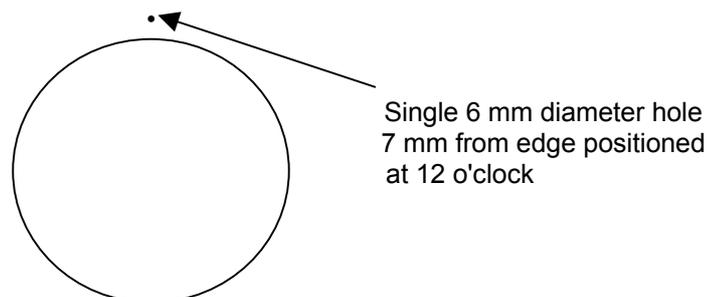


Fig 5

- 11.3 Using a suitable tool, carefully clean the edge of the newly drilled hole to ensure no burrs or sharp edges are present.
- 11.4 Fit one of the 'U' shaped screw clips (item 10) to the roof ensuring that the threaded section is on the inside of the roof and lines up with the drilled hole.
- 11.5 Carry out operation 11.1 to 11.4 on both sides of the vehicle.

Fitting the cover

12

- 12.1 Using a suitable tool pierce the cover gasket to allow the screw to be fitted.
- 12.2 Carefully screw the screw (item 11) provided through the disc from the painted side until it is fully home.
- 12.3 Holding the plate at an angle of approx 30 degrees, with the clip at the bottom and closest to the vehicle, hook the clip inside the roof and slide the cover down while bringing it flush to the side of the roof making sure the screw aligns with the fixing hole. Take care when installing the cover so as not to damage the foam seal.
- 12.4 Using the correct screwdriver fully tighten the screw.
- 12.5 Refit the spare wheel as described in AESP 2320-D-128-201, Chap 4-1, Pages 41-45.

13 Refit RADHAZ Curtain, AAC and mounting plates in reverse order, ensuring all earthing braids are connected correctly.

14 Re-check torque tightness of all fixings after 100 km.

EFFECT ON WEIGHT

15 3 kg.

PUBLICATION AMENDMENTS

16 Publications will be amended to reflect changes.

**TRUCK UTILITY LIGHT (TUL) HS TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) BATTLEFIELD AMBULANCE HS**

MODIFICATION INSTRUCTION No. 30

Sponsor: SUV IPT
Project No.:
File Ref: SUV/8/25/1B

Publication Authority: TES TIG Andover

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date
1		
2		
3		

Amdt No.	Incorporated By (Signature)	Date
4		
5		
6		

SUBJECT: Front Seat Belt Protection Sleeves

INTRODUCTION

1

1.1 When the occupant/s exit from the vehicle, it is possible for the seat belt to become caught in the door lock mechanism. This can damage, the integrity of the seat belt requiring its eventual replacement. Fitting the seat belt protector will prevent the seat belt(s) from becoming damaged. Even though WMIK variants do not have doors fitted, the protection sleeves are to be fitted.

1.2 Limitations on use of equipment. Nil.

APPLICABILITY

2

2.1 TUL (HS), TUM (HS) inc. WMIK, and Battle Field Ambulance. All variants.

2.2 Unmodified stock, held at all levels of technical storage.

REASON FOR MODIFICATION

3 Code 1 - to improve safety

PRIORITY

4

4.1 ARMY: Immediate

4.2 RAF: Class 1.

ESTIMATED TIME REQUIRED

5 Embodiment: 0-30 man-hours per qty 2 seat belt protectors.

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This instruction is to be implemented by:

6.1.1 ARMY - Units authorized to carry out levels 2, 3 or 4 maintenance.

6.1.2 RAF - Units not later than the next maintenance and Vehicle Depots before issue of vehicle.

Action required by

7

7.1 Units and establishments holding equipment.

7.1.1 ARMY - On receipt of stores, request REME to modify equipment.

7.1.2 ARMY - Record the AESP and instruction number in equipment documents.

7.1.3 RAF - Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADP MTMS Job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

7.2 Army units authorized to carry out levels 2, 3 and 4 maintenance and RAF units.

7.2.1 ARMY - When requested by units or during overhaul of equipment on charge without REME 1st Line Support, obtain the items listed in Para 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in vehicle documents.

7.2.3 Complete AF G1084A when reporting completion of the modification to FORWARD (RAF) using the following code:

RAF: MODIFICATION CODE: AFN 175

NOTE

RAF units operating STAMA are also to complete ADP MTMS Job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

7.3 All recipients of this instruction. Add particulars to AESP 2320-D-128-811 Mod Instr Index.

Stores, tools and equipment

8

8.1 Stores to be demanded.

8.1.1 The following item(s) are to be demanded quoting this instruction as the authority.

Item No.	DMC	NSN/Part No.	Designation	Qty per eqpt
	7XD	2540-99-244-0638	Mod set comprising:	2
1			Seat Belt Protector	(1)
2	46MT4	5340-99-119-6086	Cable tie	(1)

Sequence of operations

NOTE

The item numbers of Para 8 are used as reference throughout this instruction.

9 Carry out this instruction as follows:

9.1 Before fitting the seat belt protectors, ensure there is no damage to the seat belts; which will be hidden when the protectors are in place. Any damaged belts are to be replaced as per the AESP before fitting the protection sleeves.

9.2 Carefully slide the two halves of the protector (item 1) apart.

9.3 Place the two sections of the seat belt protector on either side of the seat belt webbing; ensuring the holes in the protector sleeve are at the bottom and face toward the rear of the vehicle, snap the two halves together and slide to bottom of seat belt. As shown in Fig 1



Fig 1

9.4 Secure seat belt protector to the lower anchorage point using the small cable tie (item 2), ensuring the cable tie is fitted as shown in Fig 2. Trim excess tail from cable tie.



Fig 2

9.5 Carry out this operation on both front seat belts.

TESTING AFTER EMBODIMENT

10 Check seat belt returns to correct position after releasing buckle.

EFFECT ON WEIGHT

11 Nil.

PUBLICATION AMENDMENTS

NOTE

Necessary amendments will be issued separately.

12 Cat 711 will be amended to include NSN: for Seat Belt protector.

**TRUCK UTILITY LIGHT (TUL) HS TRUCK UTILITY MEDIUM (TUM) HS
AND TUM BATTLEFIELD AMBULANCE HS**

**MODIFICATION INSTRUCTION No. 31
(Completely revised)**

Sponsor: SUV IPT
Project No.:
File Ref: SUV/8/30/3

Publication Authority: TES TIG Andover

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date
1		
2		
3		

Amdt No.	Incorporated By (Signature)	Date
4		
5		
6		

SUBJECT: Cover for Blue Flashing Beacon (Battle Field Ambulance and RMP TUL/TUM variants)

INTRODUCTION

1

1.1 AESP 2320-D-128-811, Mod Inst No. 22, Para 9.9 directs users to disable the Blue Flashing Beacons by removing them from the roof mounting, and storing them in the stowage compartment under the right hand front seat. Mod Inst No. 31 supersedes this instruction with the provision of detachable beacon covers. The requirement to disable the siren remains extant.

1.2 This instruction also applies to TUL / TUM variants, used by the RMP (Royal Military Police) which are fitted with a Blue Flashing Beacons; which may also require covering.

1.3 The covers will enable the beacons to remain fitted to the vehicle. The covers can then be removed when operation of the beacons is required.

1.4 Limitations on use of equipment. Nil.

APPLICABILITY

2

2.1 TUL (HS), TUM (HS), RMP equipped vehicles and Battle Field Ambulance.

2.2 Unmodified stock, held at all levels of technical storage.

REASON FOR MODIFICATION

3 Code 2 - to improve operational performance.

PRIORITY

4

4.1 ARMY: Immediate.

4.2 RAF: Class 1.

ESTIMATED TIME REQUIRED

5 Embodiment 0.30 man hours (to include the fitting of the lamps).

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This instruction is to be implemented by:

6.1.1 ARMY - Units authorized to carry out levels 2, 3 or 4 maintenance.

6.1.2 RAF - Units not later than the next maintenance and Vehicle Depots before issue of vehicle.

Action required by

7

7.1 Units and establishments holding equipment.

7.1.1 ARMY - On receipt of stores, request REME to modify equipment.

7.1.2 ARMY - Record the AESP and instruction number in equipment documents.

7.1.3 RAF - Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADP MTMS Job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

7.2 Army units authorized to carry out levels 2, 3 and 4 maintenance and RAF units.

7.2.1 ARMY - When requested by units or during overhaul of equipment on charge without REME 1st Line Support, obtain the items listed in Para 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in vehicle documents.

7.2.3 Complete AF G1084A when reporting completion of the modification to FORWARD (RAF) using the following code:

RAF: MODIFICATION CODE: AFN 176

NOTE

RAF units operating STAMA are also to complete ADP MTMS Job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

7.3 All recipients of this instruction. Add particulars to AESP 2320-D-128-811 Instr Index.

Stores, tools and equipment

8

8.1 Stores to be demanded.

8.1.1 The following items are to be demanded quoting this instruction as the authority.

Item No.	DMC	NSN/Part No.	Designation	Qty per eqpt
1	7XD	6240-99-968-4815	Cover Blue Beacon	2

Sequence of operations

WARNING PERSONAL INJURY

CARE SHOULD BE TAKEN WHEN WORKING ON THE ROOF OF THESE VEHICLES

NOTE

The item numbers of Para 8 are used as reference throughout this instruction.

9 Carry out this instruction as follows:

9.1 Fit and secure the Blue Flashing Beacons to the vehicle; ensuring correct operation.

9.2 Slide beacon cover (item 1) over the Blue Flashing Beacon and secure with slip cord at the base of the beacon.

9.3 Repeat operation on second beacon.

9.4 When beacons are required, remove covers and store in stowage compartment under driver's seat. Replace covers after use.

TESTING AFTER EMBODIMENT

10 Nil.

EFFECT ON WEIGHT

11 Nil.

PUBLICATION AMENDMENTS

NOTE

Necessary amendments will be issued separately.

12 AESP 2320-D-128-711 will be amended to include NSN: for Beacon Cover.

**TRUCK UTILITY LIGHT (TUL) HS TRUCK UTILITY MEDIUM (TUM) HS
AND TUM BATTLEFIELD AMBULANCE HS**

MODIFICATION INSTRUCTION No. 32

Sponsor: SUV IPT
Project No.:
File Ref: SUV/8/25/1B

Publication Authority: TES TIG Andover

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Project SHOEHORN Revised weight data plate

INTRODUCTION

1 Following the introduction of the BOWMAN communication system to the Land Rover fleet, it was found that some TUM (HS) variants were over weight. To address this issue SUV IPT tasked ABRO to modify specific vehicles (project SHOEHORN); this involved the fitting of a rear anti-roll bar. This has given the vehicle an additional 150 kg weight capability, increasing the GVW from 3350 kg to 3500 kg. In order to comply with legislation an additional data plate indicating the vehicles GVW has to be fitted to the modified vehicle. The original data plate (located under the bonnet adjacent to the brake servo) is **not** to be removed.

1.1 Limitations on use of equipment. Nil.

APPLICABILITY

2

2.1 The following vehicle types will require the SHOEHORN additional data plate:

Asset Code	Designation
5020 3100	TUM (HS) FFR Hard Top
5020 3101	TUM (HS) FFR Hard Top Odette DF VIK
5020 3102	TUM (HS) FFR Hard Top Odette IC VIK
5020 3103	TUM (HS) FFR Hard Top Odette TCAD VIK
5020 8100	TUM (HS) FFR Hard Top LHD
5020 8104	TUM (HS) FFR Hard Top LHD NBC Support
5021 3100	TUM (HS) FFR Hard Top Winterised/Waterproofed
5022 3100	TUM (HS) FFR Hard Top Commanders VIK
5030 3100	TUM (HS) FFR Soft Top WMIK
5030 3101	TUM (HS) FFR Soft Top Phase 1 WMIK

Asset Code	Designation
5030 3102	TUM (HS) FFR Hard Top Phase 1 WMIK
5031 3100	TUM (HS) FFR Soft Top RHD
5031 8100	TUM (HS) FFR Soft Top LHD
5035 3100	TUM (HS) FFR Hard Top Sigs
5042 3100	TUM (HS) GS Hard Top Winterised Heli Support

REASON FOR MODIFICATION

3 Code 6 – To comply with legislation.

PRIORITY

4

4.1 ARMY: Immediate. (Legislative Requirement).

4.2 RAF: Class 1. (Legislative Requirement).

ESTIMATED TIME REQUIRED

5 Embodiment: 0.25 man hours.

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This instruction is to be implemented by:

6.1.1 ARMY - Units authorized to carry out levels 2, 3 or 4 maintenance.

6.1.2 RAF - On receipt of spares and Vehicle Depots before next issue of vehicle.

Action required by

7

7.1 Units and establishments holding equipment.

7.1.1 ARMY - On receipt of stores, request REME to modify equipment.

7.1.2 ARMY - Record the AESP and instruction number in equipment documents.

7.1.3 RAF - Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADP MTMS Job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

7.2 Army units authorized to carry out levels 2, 3 and 4 maintenance and RAF units.

7.2.1 ARMY - When requested by units or during overhaul of equipment on charge without REME 1st Line Support, obtain the items listed in Para 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in vehicle documents.

7.2.3 Complete AF G1084A when reporting completion of the modification to FORWARD (RAF) using the following code:

RAF: MODIFICATION CODE: AFN 180

NOTE

RAF units operating STAMA are also to complete ADP MTMS Job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

7.3 All recipients of this instruction. Add particulars to AESP 2320-D-128-811 Instr Index.

Stores, tools and equipment

8

8.1 Stores to be demanded.

8.1.1 The following items are to be demanded quoting this instruction as the authority.

Item No.	DMC	NSN/Part No.	Designation	Qty per eqpt
1	7XD	9905-99-728-4806	Weight data plate	1
2			Pop rivet	2

Sequence of operations

NOTE

The item numbers of Para 8 are used as reference throughout this instruction.

9 Carry out this instruction as follows:

WARNING

HEALTH AND SAFETY. ENSURE APPROPRIATE CLOTHING AND GOGGLES ARE WORN WHEN DRILLING.

NOTE

Ensure there is nothing that will be damaged by the drill passing through the seat base.

9.1 Position the additional data plate (item 1) horizontally to the left of the nomenclature plate (located on the driver's seat base).

9.2 Using the data plate as a template, mark and drill two 3.2 mm ($\frac{1}{8}$ ") holes through the seat base.

9.3 Attach the data plate to the seat base using the two pop rivets (item 2). See Fig 1.



Fig 1

TESTING AFTER EMBODIMENT

10 None.

EFFECT ON WEIGHT

11 Nil.

PUBLICATION AMENDMENTS

12 Necessary amendments to the publications will be issued in due course.

**TRUCK UTILITY LIGHT (TUL) HS TRUCK UTILITY MEDIUM (TUM) HS
AND TUM BATTLEFIELD AMBULANCE HS**

MODIFICATION INSTRUCTION No. 33

Sponsor: SUV IPT
Project No.:
File Ref: SUV/8/25/1B

Publication Authority: TES TIG Andover

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date
1		
2		
3		

Amdt No.	Incorporated By (Signature)	Date
4		
5		
6		

SUBJECT: Rear door black out blind (FFR variants only)

INTRODUCTION

1

1.1 The introduction of the BOWMAN Communication System has raised the requirement for the rear compartment of the vehicle be a Class 1 Container (JSP 440, Issue 3.5, Part 7, Section 2, Chapter 1, Paragraph 14.).

1.2 Limitations on use of equipment. Nil.

APPLICABILITY

2

2.1 TUL (HS), TUM (HS), **Hard Top, BOWMAN, FFR variants only.**

2.2 Unmodified stock, held at all levels of technical storage.

REASON FOR MODIFICATION

3

3.1 Code 2 - to improve operational performance and security.

PRIORITY

4

4.1 ARMY: Routine.

4.2 RAF: Class 1.

ESTIMATED TIME REQUIRED

5

- 5.1 Embodiment: 1.00 man-hour (both variants).

MODIFICATION IMPLEMENTATION PLAN

6

- 6.1 This instruction is to be implemented by:

6.1.1 ARMY - Units authorized to carry out levels 2, 3 or 4 maintenance.

6.1.2 RAF - Units not later than the next scheduled maintenance and Vehicle Depots before issue of vehicle.

Action required by

7

- 7.1 Units and establishments holding equipment.

7.1.1 ARMY - On receipt of stores, request REME to modify equipment.

7.1.2 ARMY - Record the AESP and instruction number in equipment documents.

7.1.3 RAF - Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADP MTMS Job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

- 7.2 Army units authorized to carry out levels 2, 3 and 4 maintenance and RAF units.

7.2.1 ARMY - When requested by units or during overhaul of equipment on charge without REME 1st Line Support, obtain the items listed in Para 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in vehicle documents.

7.2.3 Complete AF G1084A when reporting completion of the modification to FORWARD (RAF) using the following code:

RAF: MODIFICATION CODE: AFN 181

NOTE

RAF units operating STAMA are also to complete ADP MTMS Job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

- 7.3 All recipients of this instruction. Add particulars to AESP 2320-D-128-811 Instr Index.

Stores, tools and equipment

8

- 8.1 Stores to be demanded.

8.1.1 The following item(s) are to be demanded quoting this instruction as the authority.

Item No.	DMC	NSN/Part No.	Designation	Qty per eqpt
			Mod set: comprising	
	7XD	2540-99-424-0861	Door Blind for Old Style Door see Fig 1	1
	7XD	2540-99-408-9226	Door Blind for New Style Door see Fig 1	1
1			Black out blind	(1)
2			Studs	(4)
3			Self tapping screws	(4)
4			Velcro – cut to suit	A/R
5			Pop rivets	(4)
6			Washers	(4)



Old Style Door



New Style Door

Fig 1

Sequence of operations

NOTE

The item numbers of Para 8 are used as reference throughout this instruction.

9 Carry out this instruction as follows:

9.1 Remove the rear door pull handle. On **old style doors** remove the screws retaining the rear door panel and remove the door panel. On **new style doors** with the moulded panel, remove the snap-in panel under the interior door latch and carefully ease the panel off the door by inserting a flat blade under the panel adjacent to the plastic retaining studs around the panel. Care must be exercised when removing the moulded panel not to split the panel around the retaining studs.

9.2 Offer the door blind to the rear door and carefully mark the position in the centre of the top rail, for the four studs that retain the blind in the raised position.

9.3 Drill four (3 mm) holes in the centre of the top rail in the marked positions, and using self tapping screw (item 3) screw in place the four retaining studs (item 2). See Fig 2.



Fig 2



Fig 3

9.4 Fasten the blind in position using the top four studs, and smooth into position. Mark the Velcroed area of blind on the sides of frame. Apply self adhesive Velcro strip to the centre of both sides of the door frame, adjusting as required to suit the length of the blind and ensure complete coverage.

NOTE: On the later type door, do not bring the Velcro below the top edge of the panel, as this will prevent the panel studs from being re-fitted correctly. Drill a hole (3 mm) one cm from the each end of the Velcro strip and install pop rivet (item 5) and washer (item 6) to prevent strip lifting. See Fig 3.

9.5 With the blind in the raised position, ensure correct location of the blind on the top studs and Velcro side panels. Carefully replace the door panel ensuring that the blind fits smoothly underneath, and that the roll down retaining strips are not trapped beneath. On the **new style door** ensure that the pre cut holes in the blind are aligned. See Fig 4.

9.6 Refit the panel with either the screws (on **old style doors**, the blind material will have to be carefully pierced) or studs that were previously removed (pre-cut holes). Refit door handle. Check that blind rolls down and can be secured using retaining strips. See Fig 5, (new door featured).



Fig 4



Fig 5

TESTING AFTER EMBODIMENT

10 Nil.

EFFECT ON WEIGHT

11 Nil.

PUBLICATION AMENDMENTS

NOTE

Necessary amendments will be issued separately.

12 Cat 711 will be amended to include NSN for door blinds.

TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION NO. 34

Sponsor: SUV IPT
Project No.: LR060
File Ref: SUV/8/25/2

Publication Authority: SUV IPT, Abbey Wood

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Improved Rear Pannier Latch Assembly
(Approval No LSTP 12-6690)

INTRODUCTION

1 The current 'Anti- Luce' catches fitted to the rear pannier on 'E' WMIK vehicles have proven difficult to operate and access from inside the vehicle. To assist personnel to exit the vehicle more easily, an improved latch assembly has been designed overcoming the original difficulties in operating the latches from inside the vehicle.

APPLICABILITY

- 2 TUM (HS), 'E' WMIK. only. (Asset code: NB 5032-3180)
- 2.1 Fitted to equipment held by user units.

REASON FOR MODIFICATION

- 3 Code 2- to improve operational performance.

PRIORITY

- 4 ARMY: Routine
RAF: Class 3

ESTIMATED TIME REQUIRED

- 5 Embodiment: 1 hr.

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This instruction is to be implemented by:

ARMY - Units authorized to carry out levels 2, 3 or 4 maintenance.

RAF - Units not later than the next maintenance and Vehicle Depots before issue of vehicle.

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action. N/A

Action required by

7

7.1 Units and establishments holding equipment.

7.1.1 ARMY - On receipt of stores, request REME to modify equipment.

7.1.2 ARMY - Record the AESP and instruction number in equipment documents.

7.1.3 RAF - Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADP MTMS Job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

7.2 Army units authorized to carry out levels 2, 3 and 4 maintenance and RAF units.

7.2.1 ARMY - When requested by units or during overhaul of equipment on charge without REME 1st Line Support, obtain the items listed in Para 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in vehicle documents.

7.2.3 Complete AF G1084A when reporting completion of the modification to FORWARD (RAF) using the following code:

RAF MODIFICATION CODE: AFN186

NOTE

RAF units operating STAMA are also to complete ADP MTMS Job Certification Sheet and to follow the procedures laid down in AP 100C-08A.

7.3 All recipients of this instruction. Add particulars to AESP 2320-D-128-811 Instr Index.

Stores, tools and equipment

8

8.1 Stores to be demanded.

8.1.1 The following items are to be demanded quoting this instruction as the authority.

Item No.	DMC	NSN/Part No.	Designation	Qty per eqpt
	7XD	2540-99-573-1481	Kit rear pannier latch, comprising:	1
1	7XD	5340-99-253-4359	Latch mounting	(1)
2	7XD	5340-99-562-6675	Hasp plate	(1)
3	7XD	5340-99-958-2435	Handle, manual control	(1)
4	7XD	5365-99-701-1114	Packer	(1)
5	7XD	5340-99-898-6029	Clevis	(1)
6	7XD	5307-99-617-4286	Rod	(1)
7	7XD	3120-99-253-6668	Bush	(1)
8	7XD	5340-99-356-7342	Latch Modified	(1)
9	7XD	5340-99-159-5233	Clevis	(1)
10	7XD	5340-99-551-5572	Spring Clip	(1)
11	7XD	5340-99-849-1120	Spring Clip	(1)
12	7XD	5340-99-613-3372	Striker Bolt	(1)
13			Soc Cap Hd Screw M10x25 Lg Zp	(2)
14			Washer Plain M10 Zp	(5)
15			Nut Nyloc M10 Zp	(2)
16			Washer Plain M6 Zp	(4)
17			Soc But Hd Screw M6x35 Lg Zp	(2)
18			Nut Nyloc M6 Zp	(3)
19			Full Nut M4 Zp	(2)
20			Hex Hd Bolt M6x70 Lg Zp	(1)
21			Thin Nut Nyloc 3/8" UNC Zp	(1)
22			Zinc Primer	A/R
23	H1	8010-99-131-2563	NATO Green Paint. 50ml patch repair	A/R

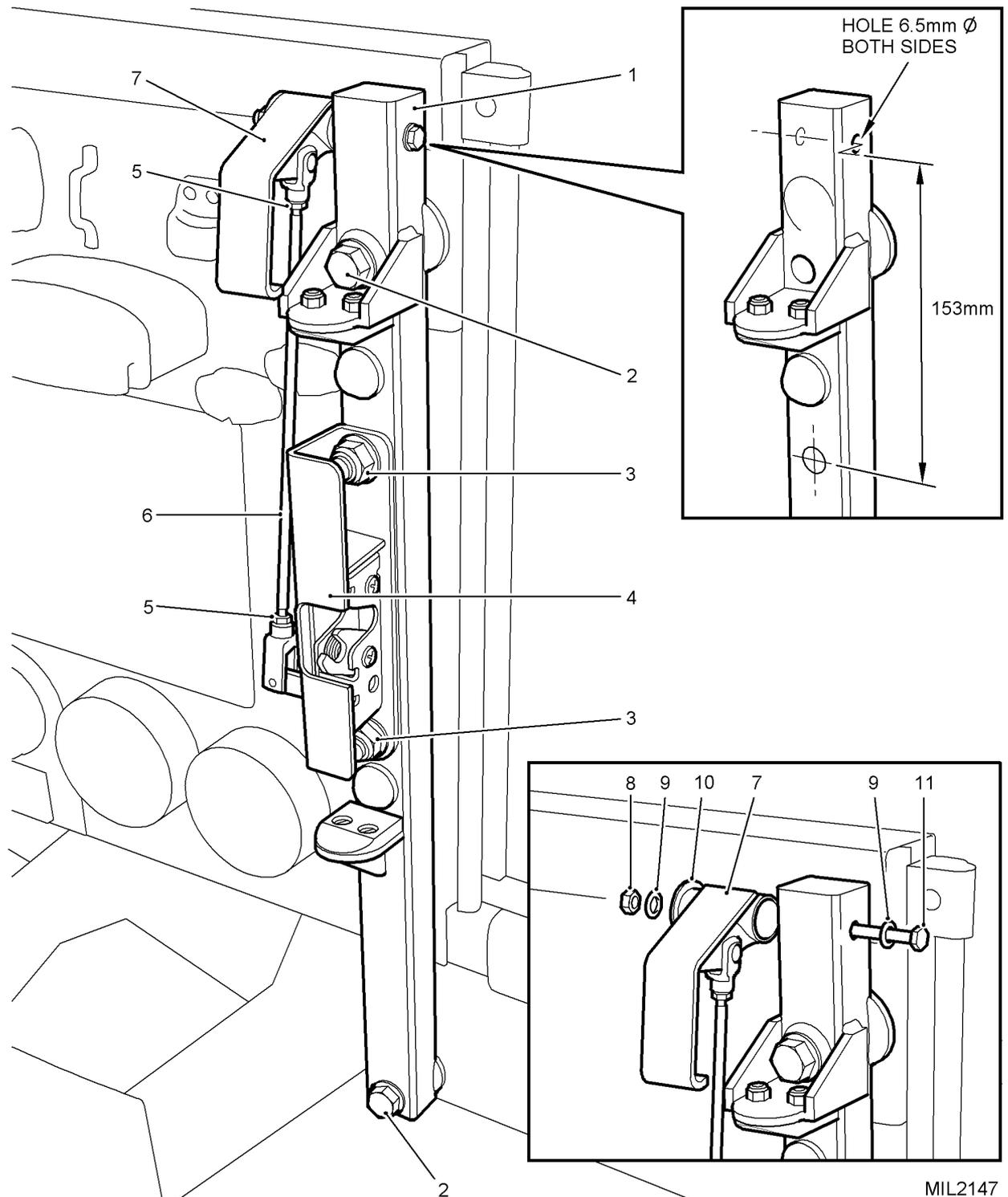
Sequence of operations

NOTE

The item numbers of para 8.1 are used as reference throughout this instruction.

9 Carry out the modification as follows:

- 9.1 Remove pannier post and 'Anti-Luce' fasteners.
- 9.2 Drill \varnothing 6.5 mm hole in pannier post (refer to Fig 1) and treat with zinc primer (item 22, para 8), apply NATO Green top coat (item 23, para 8). Alternatively treat bare metal with anti-corrosive paint.
- 9.3 Fit latch mounting (item 1) to pannier post.
- 9.4 Refit pannier post.
- 9.5 Remove existing hasp plate from pannier.
- 9.6 Drill \varnothing 30 mm hole in pannier (refer to Fig 2), and treat with zinc primer (item 22, para 8), apply NATO Green top coat (item 23, para 8). Alternatively treat bare metal with anti-corrosive paint.
- 9.7 Using existing fasteners fit new hasp (item 2) loosely, adjust hasp plate to fit between stop blocks on pannier and tighten.
- 9.8 Fit striker (item 12) in forward most position and tighten.
- 9.9 Fit modified latch (item 8) and packer (item 4) loosely using screws (item 17), washers (item 16) and nuts (item 18). Close pannier and adjust latch position and tighten.
- 9.10 Adjust position of striker (item 12) to ensure bump stops are compressed slightly and pannier is secure.
- 9.11 Fit release handle assembly (item 3) and bush (item 7) using bolt (item 20), washers (item 16) and nut (item 16).
- 9.12 Fit rod (item 6) and adjust length so that release handle lies against pannier post when latch lever is in free position, secure locknuts (item 19).

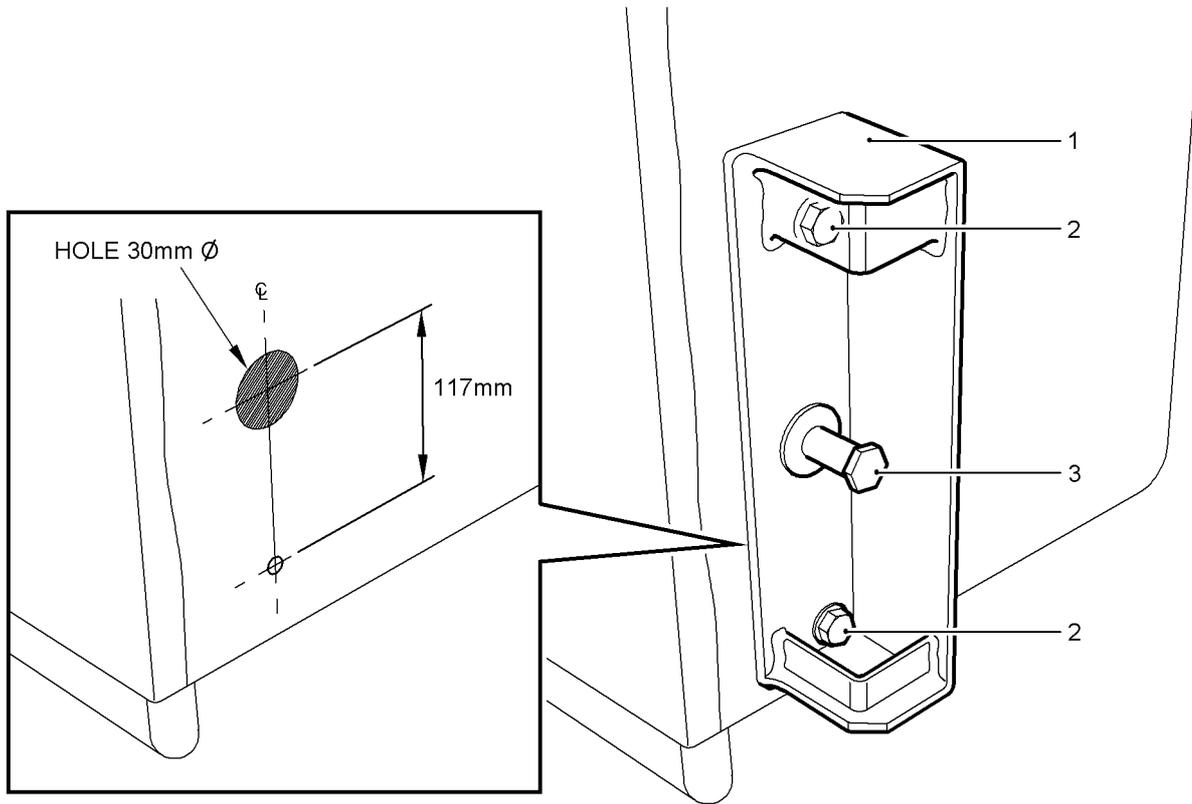


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- 1 Pannier post
- 2 Pannier post fixings
- 3 Latch fixings
- 4 Latch
- 5 Locknuts
- 6 Rod

- 7 Release handle
- 8 Nut
- 9 Washer
- 10 Bush
- 11 Bolt

Fig 1 Pannier post



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- | | |
|---|-----------------------|
| <p>1 Hasp
2 Existing hasp fixings</p> | <p>3 Striker bolt</p> |
|---|-----------------------|

Fig 2 Pannier hasp

TESTING AFTER EMBODIMENT

10 Check for correct and smooth operation.

EFFECT ON WEIGHT

11 Nil.

PUBLICATION AMENDMENTS

12 Nil.

**TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION NO. 35**

Sponsor: SUV IPT
Project No.: LR049
File Ref: SUV/8/25/1B

Publication Authority: SUV IPT, Abbey Wood

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Fitting of an Emergency Hammer

(Approval No LSTP 12-6687)

INTRODUCTION

1 This instruction details the fitting of an Emergency Hammer.

1.1 Limitations on use of equipment. Nil

APPLICABILITY

2 Hard top variants of Truck Utility Light (TUL) HS and Truck Utility Medium (TUM) HS vehicles but not including Battle Field Ambulance.

2.1 Fitted to equipment held by user units.

REASON FOR MODIFICATION

3 Code 1 – To improve safety.

PRIORITY

4 Army: Immediate
RAF: Class 1

ESTIMATED TIME REQUIRED

5 Embodiment: 0.25 man hrs.

Stores tools and equipment

NOTE

Items not codified, if required, should be demanded using the manufacturer's part numbers through the normal system.

8

8.1 Stores to be demanded.

8.1.1 The following set is to be demanded quoting this instruction authority.

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
	7XD	4240 99 725 3396	Emergency Hammer assembly comprising:	1
1			Hammer	1
2			Hammer holder	1
3			Velcro strap	1

8.2 Stores or suitable equivalent to be obtained locally.

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
4*	G1	5305 99 135 0600	Bolts, 4mm x 25mm	2
5*	G1	5310 99 122 3408	Flat washers, 4mm	4
6*	G1	5310 99 122 5643	Locking nut, 4mm	2

NOTE

Should the vehicle be fitted with Heli-Lift Protection (Modification No. 3) the fixings shown above should be replaced with a suitable woodscrew to secure the hammer holder in place.

8.3 Sequence of operations

NOTE

The item numbers in Para 8 are used as references throughout this instruction.

9 Carry out the modification as follows (refer to Fig 1):

WARNINGS

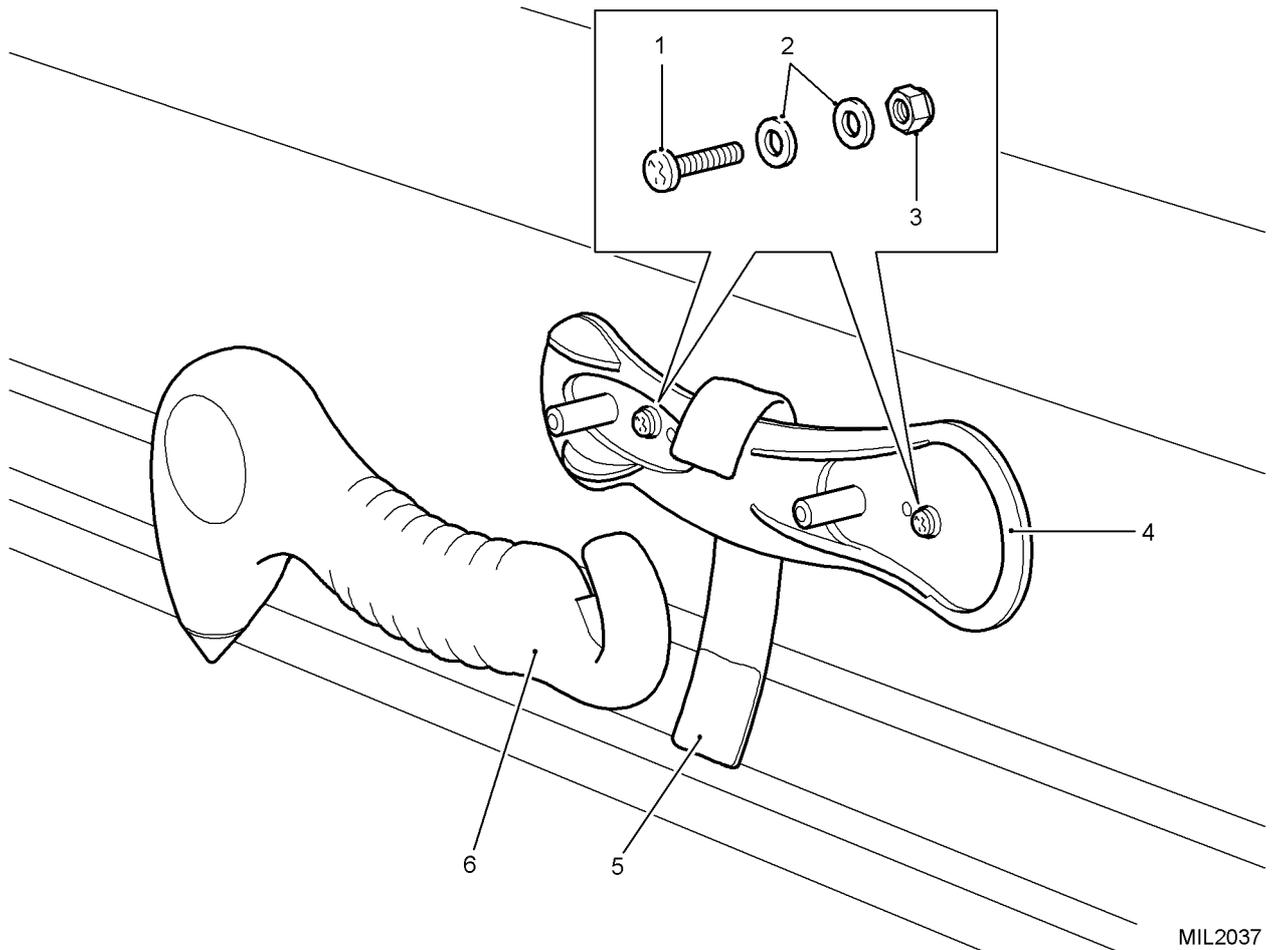
HEALTH AND SAFETY. ENSURE APPROPRIATE CLOTHING AND GOGGLES ARE WORN WHEN DRILLING.

HEALTH AND SAFETY. WHEN CUTTING HOLES IN THE HOOD, GOOGLES AND MASK MUST BE WORN TO PREVENT INHALATION OF HARMFUL DUST AND TO PROTECT EYES.

CAUTION

When drilling ensure there is nothing that will be damaged by the drill passing through the panel.

- 9.1 Position the vehicle onto flat, level ground, apply the handbrake and remove the ignition keys.
- 9.2 Enlarge the mounting holes on the emergency hammer holder (2) using a 4mm drill bit and drill.
- 9.3 Position the hammer holder centrally above the rear door on the inside vertical face of the hard top.
- 9.4 Mark the position of the mounting holes.
- 9.5 Drill the holes using a 4mm drill bit and drill.
- 9.6 Secure the hammer holder (2) to the hard top using M4 bolts (4) and washers (5) fitted from inside the vehicle and with washers (5) and locking nuts (6) on the outside.
- 9.7 Cut the protruding ends off the bolts using a hacksaw. Taking care not to damage the hard top.
- 9.8 Locate emergency hammer (1) on holder (2) and secure with Velcro strap (3).



- 1 Screw
- 2 Washers
- 3 Nut
- 4 Hammer holder
- 5 Velcro strap
- 6 Emergency Hammer

Fig 1 Fitting the Emergency Hammer.

TESTING AFTER EMBODIMENT

10 Nil.

EFFECT ON WEIGHT

11 Negligible.

PUBLICATION AMENDMENTS

12 Nil.

**TRUCK UTILITY LIGHT (TUL) HS TRUCK
UTILITY MEDIUM (TUM) HS
AND TUM BATTLEFIELD AMBULANCE HS
MODIFICATION INSTRUCTION NO. 36**

Sponsor: SUV IPT
Project No.: LR049 2.2
File Ref: SUV/8/25/1B

Publication Authority: SUV IPT, Abbey Wood

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Marathon Runflat System

(Approval No LSTP 12-6688)

INTRODUCTION

CAUTION

VEHICLE RECORD BOOK. This instruction AESP 2320-D-128-821 must be retained with the vehicle record book.

1 This instruction details the fitting/removal of Marathon Runflat Inserts to standard wheels and should only be undertaken by trained personnel.

1.1 Standard wheels fitted with Runflat inserts will assist a driver to maintain control if a tyre should fail at speed. Because the vehicle drops onto the roller insert instead of directly onto the wheel, a higher level of control is possible than if no insert is fitted.

1.2 A driver can continue travelling to a place of safety with a deflated tyre/s so that the damaged wheel/s can be changed. The Marathon System is designed to give up to 30 km (19 miles) (dependant on surface) at speeds up to 50km/hr (31 mph) with one or more tyres deflated. With two front tyres deflated steering should be adequate to clear an area of hazard at a lower speed. In a serious emergency, traction and control can be maintained at speeds of up to 50 km/hr (31 mph) with all four tyres deflated.

1.3 Limitations on use of equipment. As detailed in previous paragraph.

WARNING

UNDER-INFLATED AND FULLY DEFLATED TYRES FITTED WITH RUNFLAT INSERTS BEHAVE DIFFERENTLY TO FULLY INFLATED TYRES AND THE HANDLING OF THE VEHICLE IS MARKEDLY DIFFERENT. AN UNDER-INFLATED REAR TYRE IS MORE DANGEROUS THAN AN UNDER-INFLATED FRONT TYRE. THEREFORE DO NOT ATTEMPT VIOLENT MANOEUVRES OR SUDDEN CHANGES IN DIRECTION WITH ONE OR MORE TYRES DEFLATED. ALL USERS SHOULD BE FAMILIARISED WITH THE DIFFERENT HANDLING CHARACTERISTICS OF RUNFLAT ASSEMBLIES.

APPLICABILITY

2 Runflat Inserts are primarily to be fitted to LandRover TUM (HS) with Weapon Mounted Installation Kit (WMIK) as authorised by the ESM, SUV IPT, DLO Andover (94391 7417).

REASON FOR MODIFICATION

3 Code 2 - to improve operational performance.

PRIORITY

4 Army: Immediate
RAF: Class 1

ESTIMATED TIME REQUIRED

5 Embodiment: 0.50 man-hours per wheel.

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This instruction is to be implemented by:

ARMY - With assets deployed on operations as authorised by DLO. Operatives and fitters to be suitable trained.

RAF - With assets deployed on operations as authorised by DLO. Operatives and fitters to be suitable trained.

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action: NA

Action required by

7

7.1 Units and establishment holding equipment.

7.1.1 Examine vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary units with level 2 REME support demand the stores required.

7.1.3 ARMY – on receipt of stores, request REME to modify equipment.

7.1.4 ARMY – Record the modification, subject and the AESP number in equipment documents.

7.1.5 RAF – Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADPMTMS job certification sheet and to follow the procedures laid down in AP 100C - 08A.

7.2 Army units authorised to carry out levels 2, 3 and 4 maintenance and RAF units.

7.2.1 ARMY – When requested by users or during overhaul of equipment on charge without REME level 2 support, obtain the items listed in Para. 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.2.3 Complete AF G1084A when reporting completion of modification to FORWARD (RAF) using the following code.

RAF MODIFICATION CODE: AFN188

NOTE

RAF units operating STAMA are also to complete ADP MTS job certification sheet and to follow the procedures laid down in 100C - 08A.

7.3 All receipts of this instruction. Add particulars to AESP ref. 2320-D128-811 Mod instr. index.

Stores, tools and equipment.

8 Stores to be demanded.

8.1 The following items are for the repair of wheels fitted with Marathon Runflat Systems and are to be demanded as required quoting this instruction as the authority.

Item No.	DMC	NSN/Part No.	Designation	Qty per eqpt
EQUIPMENT / SPARES REQUIRED FOR MAINTAINING RUN FLATS AND CHANGING TYRES				
1	7XD	5310-99-920-1356	Double Sided Locking Washer.	A/R
2	7XD	5305-99-188-5490	Securing Bolt (M10 x 65mm)	A/R
3	7XD	2530-99-323-1109	Fitment Sticker (one per wheel)	A/R
4	6MT14	2640-99-801-0172	Metal Clamp In Valve	A/R
5	POL	9150-99-838-1808	Lithium Grease XG 291	A/R
6	H4	8030-99-253-6699	Loctite 243 (or 242)	A/R
7	H21	4020-99-942-8540	Assembly Cord	A/R
8	7XD	5120-99-147-9510	Torque Limiting Tool	A/R
9	F1A	5120-99-139-8718	Fitting Tool	A/R
10	7XD	5120-99-000-4732	Bead Lifting Tool	A/R
11	H1C1	2640-99-836-0805	Buffing Solution	A/R
12	7XD	2530-99-410-4098	Dash Panel Decal	A/R
13	7XD	2530-99-212-9682	Rivet Nut Insert	A/R

continued

14	7XD	2530-99-264-0608	Clamping Plate	A/R
15	7XD	2530-99-498-9071	Wedge Units	A/R
16	F1	5120-99-794-4363	Torque Wrench 50 Nm	A/R
17	F1	5120-99-910-6316	6 inch Extension ($\frac{3}{8}$ " sq. drive)	A/R
18	7XD	5120-99-760-9883	M8 Ballpoint T Bar (General use)	A/R
19	7WMK	2530-99-958-1907	Self adhesive balance weights WMIK alloy wheel only	A/R

REPLACEMENT MARATHON SYSTEM SHOULD FITMENT BECOME DAMAGED

20	7XD	2530-99-305-2142	Marathon Run Flat System for Defender (HS) steel wheel rim only.	A/R
21	7WMK	2640-99-551-4652	Marathon Run Flat System for RWMIK, Alloy wheel rim only.	A/R

Sequence of operations

CAUTION

Use of a general purpose T bar will facilitate assembly, not to be used for torque purposes.

NOTE

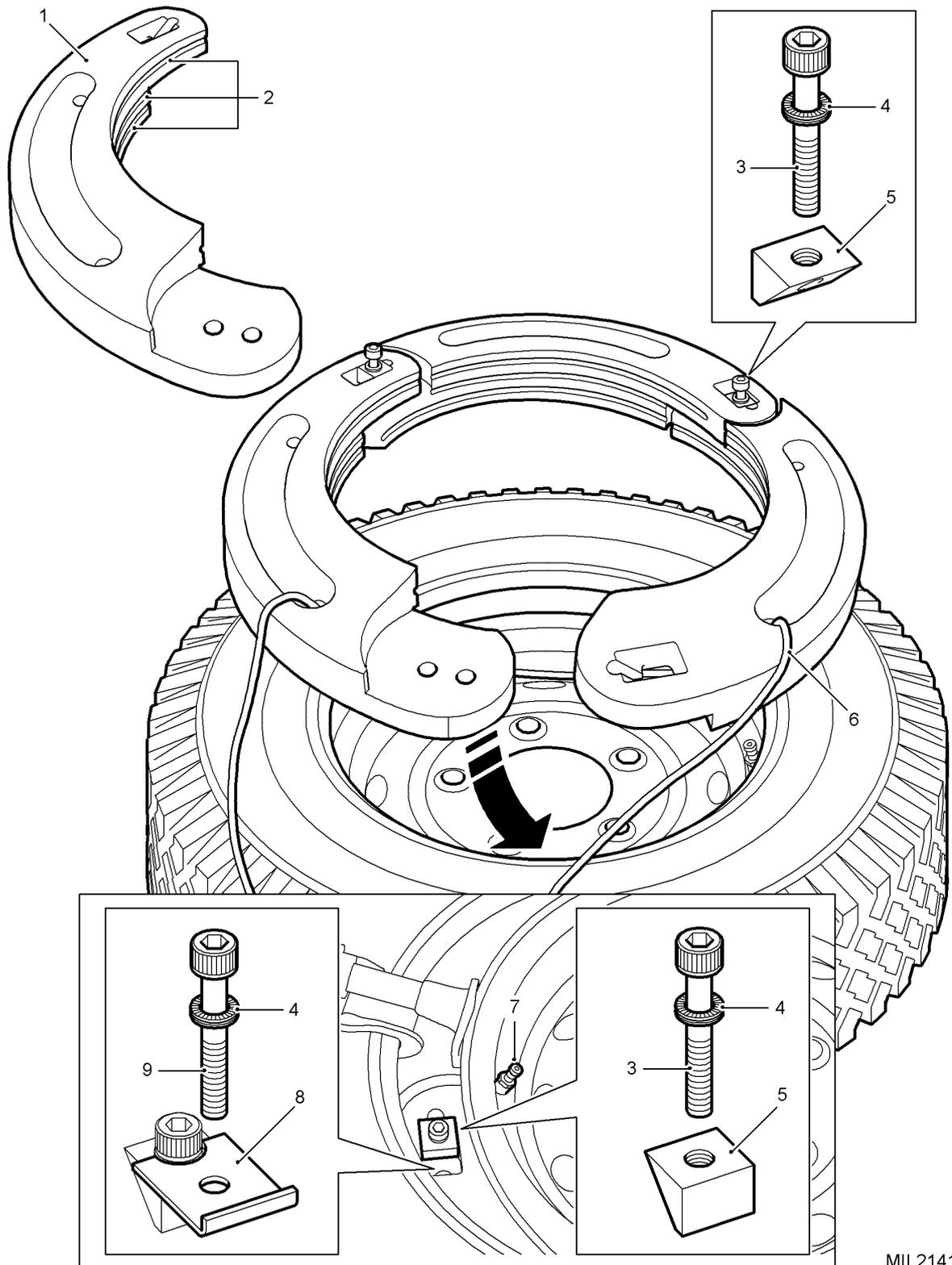
The item numbers of Para 8 are used as reference throughout this instruction.

- 9 To install Runflat tyre inserts carry out the following:
 - 9.1 Remove valve core and deflate tyre. Break both beads and fit on tyre fitting machine with valve side uppermost.
 - 9.2 Ensuring valve area is clean, replace rubber snap in valve (if fitted) with metal clamp-in valve (item 4) and tighten clamping nut to 4 Nm.
 - 9.3 Disassemble Marathon Runflat System. Grease (item 5) underside of roller segments, making sure grease slots are completely full of grease.

CAUTION

Double sided washers (Item 1) must be replaced every time runflat insert is removed

- 9.4 Apply Loctite thread adhesive (item 6) to wedge bolt making sure double sided locking washers (item 1) are under head of each bolt. Connect 3 roller segments inserting bolts four or five threads. Leave final joint unconnected. Pass cord through holes adjacent to final position.
- 9.5 Lift top bead of tyre, holding up if necessary with wooden blocks. Insert roller segments, wedge slot uppermost, making sure wedges sit at top of wedge bolts.
- 9.6 Using cord (item 7), pull ends of roller together. It may be necessary to lift up tyre to bring marathon system into well of wheel. When roller ends are pulled together pull roller round so that joint sits both sides of valve with ends of roller overlapping.

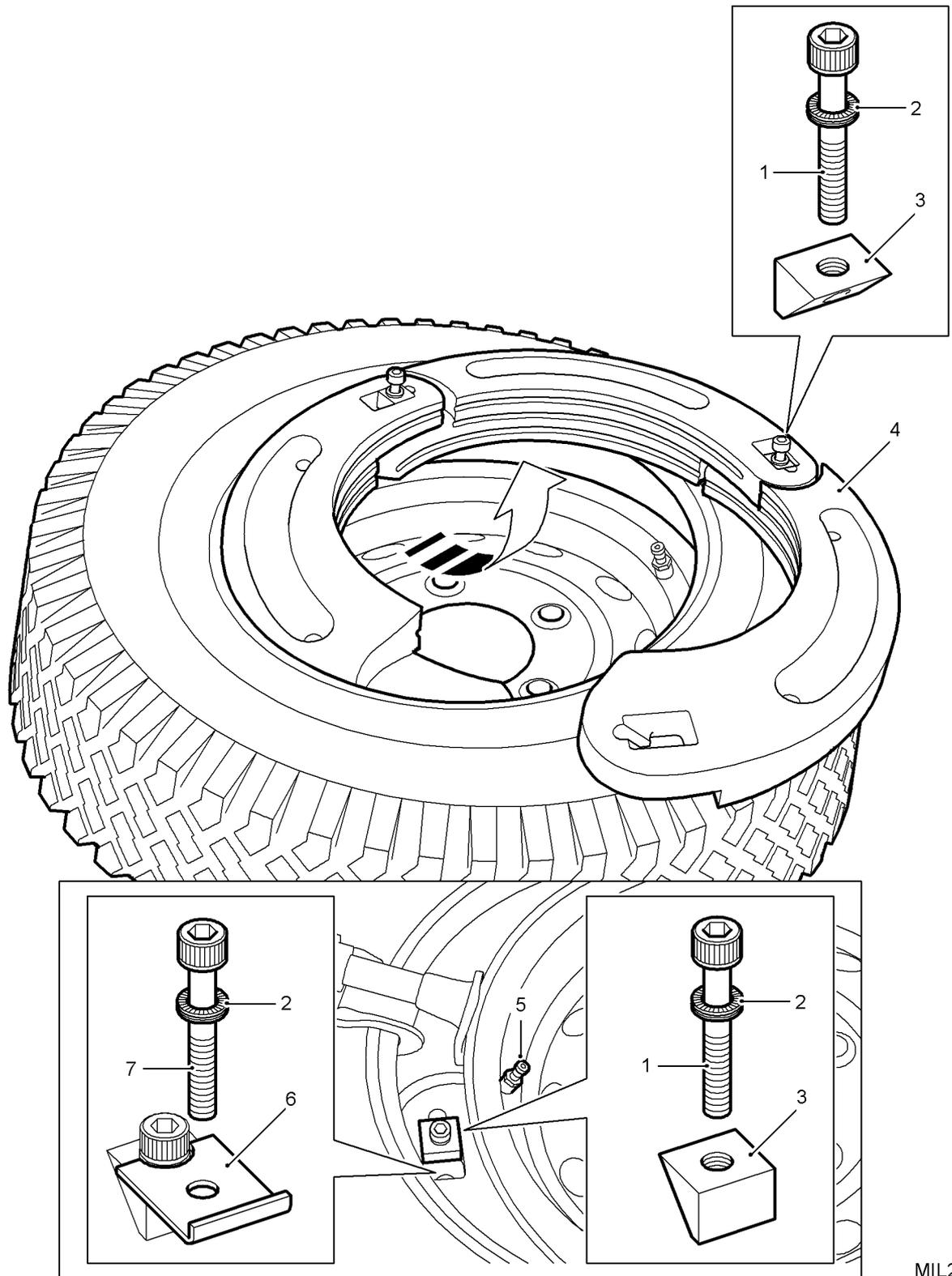


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| 1 | Roller segment | 6 | Cord |
| 2 | Grease slots | 7 | Metal valve |
| 3 | Wedge bolt | 8 | Clamping plate bolt |
| 4 | Double locking washer | 9 | Clamping plate |
| 5 | Wedge unit | | |

Fig 1 Refitting the Runflat tyre inserts

- 9.7 Secure ends of cord (item 7) in mounting bolt holes to keep roller in correct position. Clean off top of tyre.
- 9.8 Pull over top bead of tyre in area of valve with tyre lever or bead spreader. Using bead lifting tool (item 10), hold tyre away from wheel. Apply Loctite (item 6) to wedge bolt and insert wedge unit (item 15) making sure double sided locking washers (item 1) are under head of the bolt. Tighten down wedge bolt so that wedge unit top is level with top of wedge slot and the gaps between the roller ends are equal. Remove the assembly cord after the final wedge bolt has been fitted.
- 9.9 Check that joint sits both sides of valve. Tighten down wedges in turn so that top of each wedge sits just below top of wedge slot. Use torque limiting tool (item 8) to tighten each wedge bolt to 12 Nm.
- 9.10 Apply Loctite to clamping plate bolts and fit clamping plates (item 14) at each joint position making sure the double sided locking washers (item 1) are under the head of the bolts. Tighten clamping bolts to 25 Nm (item 16).
- 9.11 Mount top bead of tyre, clean top bead and wheel rim with buffing fluid (item 11) to remove all traces of grease. Inflate and balance wheel/tyre as a regular wheel assy. Clean small area of wheel rim with buffing fluid adjacent to inflation valve, and attach rim decal (item 3) advising that the wheel is fitted with Runflat Insert.
- 9.12 Fix dash board decal (item 12) in a suitable position informing users that Runflat Inserts are fitted.
- 9.13 Place a copy of this instruction with the vehicle docs and the Runflat Fitting Manual.
- 10 To remove Runflat tyre inserts carry out the following:
- 10.1 Remove wheel from vehicle.
- 10.2 Remove valve core and deflate tyre.
- 10.3 Unseat both beads of the tyre and secure the wheel on a tyre fitting machine with valve side uppermost.
- 10.4 Pull over top bead of tyre with tyre lever or bead spreader adjacent to the valve. Insert wooden block to hold tyre away from wheel if necessary.
- 10.5 Remove clamping plate bolts, double locking washers (item 1) and clamping plates (item 14) from the roller segments.
- 10.6 Remove wedge bolt and double locking washer (item 1) from wedge unit (item 15) adjacent to the valve (item 4).
- 10.7 Loosen the remaining wedge bolts on the wedge units (item 15).
- 10.8 Withdraw the roller assembly from the tyre.
- 10.9 Remove the tyre in the normal way.
- 10.10 Clean any grease from the wheel.



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|---|-----------------------|---|---------------------|
| 1 | Wedge bolt | 5 | Metal valve |
| 2 | Double locking washer | 6 | Clamping plate |
| 3 | Wedge unit | 7 | Clamping plate bolt |
| 4 | Roller segment | | |

Fig 2 Removing the Runflat tyre inserts

INSPECTION OF AND RE-USE OF MARATHON SYSTEMS AFTER RUNFLAT OPERATION**CAUTION**

Marathon securing bolts can be re-used, but all traces of Loctite must be removed before re-applying. The double sided lock washers (item 2) must be replaced every time the bolts are removed or re-used.

11 Marathon tyre inserts are designed to be returned to service after runflat use, subject to the following conditions.

11.1 If the system has been subject to any form of ballistic or explosive attack the assembly must be inspected by REME. On no account should it be returned to service without this inspection process. If necessary refer to SUV IPT.

11.2 If the runflat operation led to any noticeable damage to the tyre, the Marathon insert must also be inspected by REME, as above.

11.3 If there is no apparent damage to the tyre after the runflat incident the following measures must be carried out by the workshop controller.

11.4 The system(s) involved in the runflat operation should be cleaned and examined carefully for cracks, fissures or any mechanical damaged sustained during the runflat use. If there is any sign of damage the assembly must be inspected by REME, as above.

11.5 If there is no sign of surface damage, the system(s) should be fitted to a bare wheel (wheel with no tyre) from the vehicle to which the systems were originally fitted. The wedge fixing bolts should be tightened to the recommended torque setting. If the assembly can be rotated on the wheel the system should be replaced (item 20 or 21).

11.6 If there is no movement of the unit on the wheel, remove it, re-grease (item 5) and fit to the original wheel with new fixing bolts (item 2) and double sided washers (item 1).

TESTING AFTER EMBODIMENT

12 Nil. User to be made aware of Runflat fitment and specialised fitting required.

EFFECT ON WEIGHT

13 Each Marathon Runflat System weighs 10 kg. Total vehicle weight (qty 5 systems) = 50 kg

PUBLICATION AMENDMENTS

14 Nil

TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION NO. 37

Sponsor: SUV IPT
Project No.: LR060
File Ref: B37/03

Publication Authority: SUV IPT, Abbey Wood

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Fitting Glow plug timer interface harness

(Approval No LSTP 12-6689)

INTRODUCTION

1 This instruction details the fitting of the glow plug timer interface harness.

1.1 Limitations on use of equipment. Nil

APPLICABILITY

2 Basic Wolf, Winter Water and Snatch 2 vehicles.

2.1 Fitted to equipment held by user units.

REASON FOR MODIFICATION

3 Code 3 – to improve reliability

PRIORITY

4 ARMY: Immediate
RAF: Class 1

NOTE

Vehicles are not to be classed as VOR whilst awaiting modification.

ESTIMATED TIME REQUIRED

5 Embodiment: 0.25 man hrs.

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.

RAF - Units not later than the next routine maintenance and Vehicle Depots before next issue of vehicle.

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action. N/A

Action required by

7

7.1 Units and establishment holding equipment.

7.1.1 Examine vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary units with level 2 REME support demand the stores required.

7.1.3 ARMY – on receipt of stores, request REME to modify equipment.

7.1.4 ARMY – Record the modification, subject and the AESP number in equipment documents

7.1.5 RAF – Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADPMTMS job certification sheet and to follow the procedures laid down in AP 100C - 08A.

7.2 Army units authorised to carry out levels 2, 3 and 4 maintenance and RAF units.

7.2.1 ARMY – When requested by users or during overhaul of equipment on charge without REME level 2 support, obtain the items listed in Para. 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.2.3 Complete AF G1084A when reporting completion of modification to FORWARD (RAF) using the following code.

RAF MODIFICATION CODE: AFN190

NOTE

RAF units operating STAMA are also to complete ADP MTS job certification sheet and to follow the procedures laid down in 100C - 08A.

7.3 All receipts of this instruction. Add particulars to AESP ref. 2320-D128-811 Mod instr. index.

Stores tools and equipment

NOTE

Items not codified, if required, should be demanded using the manufacturer's part numbers through the normal system.

8

8.1 Stores to be demanded.

8.1.1 The following set is to be demanded quoting this instruction authority.

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
1		6150-99-799-8866	Glow plug interface harness kit comprising: Interface harness	1 (1)
2		ERR 4085	Glow plug timer	(1)
3			Cable tie	(1)

8.2 Stores or suitable equivalent to be obtained locally.

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
4			Cable tie	A/R

Sequence of operations

NOTE

The item numbers in Para 8 are used as references throughout this instruction.

9 Carry out the modification as follows:

9.1 Position the vehicle onto flat, level ground, apply the handbrake and remove the ignition keys.

10 Basic Wolf Vehicles (refer to Fig 1):

10.1 Disconnect the negative lead from the battery.

10.2 Disconnect the Glow plug timer located on the engine side of the bulkhead.

10.3 Remove screw securing the existing glow plug timer from the bulkhead.

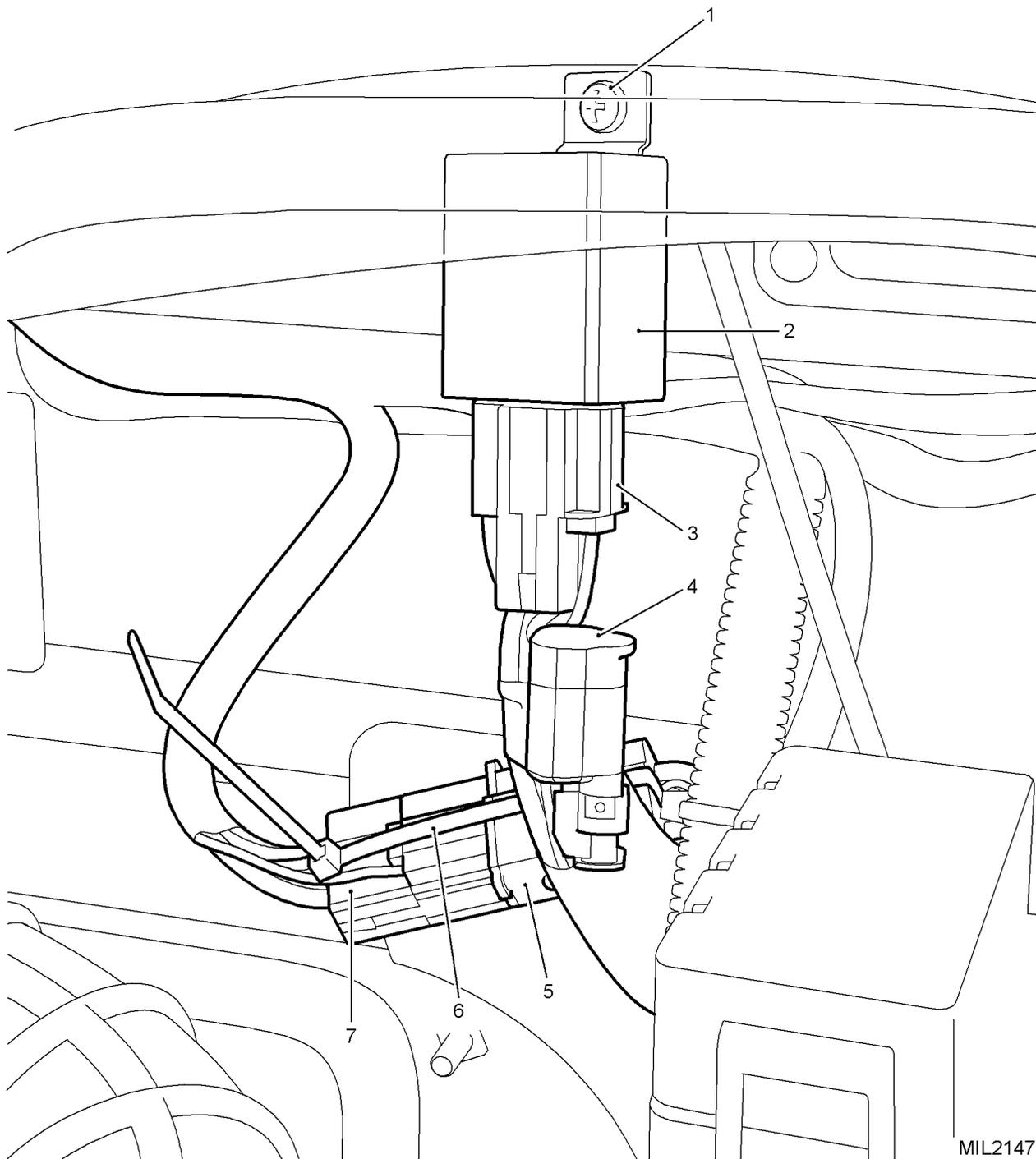
10.4 Replace with the new glow plug timer and interface harness.

10.5 Connect the main harness socket to the interface harness plug.

10.6 Using the cable tie (item 3) secure the plug and socket together.

10.7 If required, any excess main or interface harness should be looped and cable tied up to the dash wiring use a cable tie (item 4).

10.8 Reconnect the negative lead to the battery.



- | | | | |
|---|--------------------------|---|------------------------|
| 1 | Screw | 5 | Interface harness plug |
| 2 | Glow plug timer | 6 | Cable tie |
| 3 | Interface harness socket | 7 | Main harness plug |
| 4 | Spark suppressor | | |

Fig 1 Fitting the Glow plug timer interface cable – Basic Wolf

11 Winter Water Vehicles (refer to Fig 2 and 3):

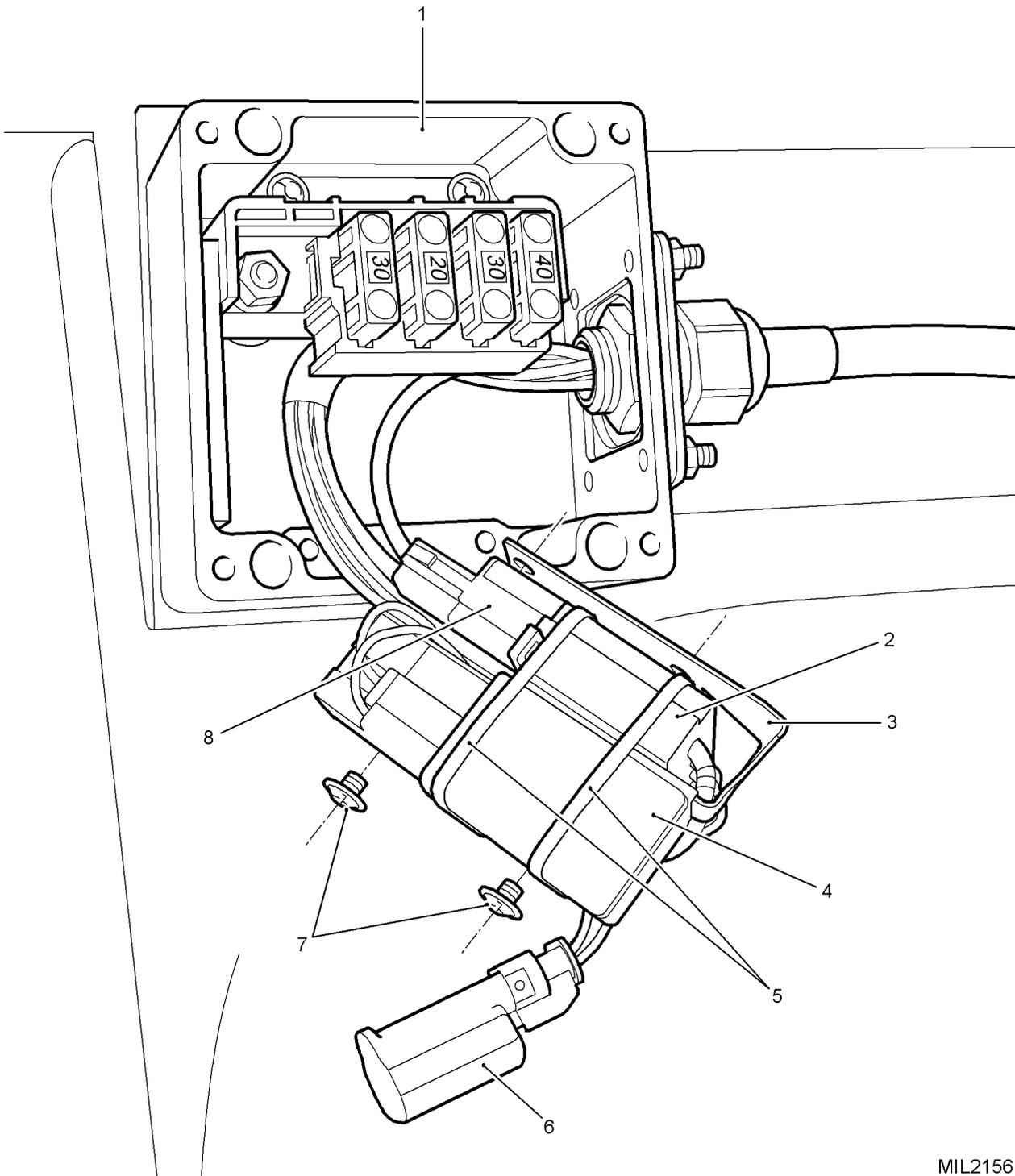
- 11.1 Disconnect the negative lead from the battery.
- 11.2 Undo the four screws and remove the fuse box cover from the Main harness fuse box located on cab side of the lower dash.
- 11.3 Remove the mounting bracket from the new Glow plug timer.
- 11.4 Remove the tape securing the Spark Suppressor to the interface harness.

either

- 11.5 Remove the two screws securing the glow plug timer mounting bracket to the inside of the fuse box.
- 11.6 Attach the Glow plug timer and Interface harness onto the mounting bracket, secure with two cable ties (item 4) (refer to fig 2).
- 11.7 Carefully shape the harness by hand to enable fitment into the fuse box.
- 11.8 Connect the Glow plug timer Interface harness plug to the main harness socket.
- 11.9 Secure the mounting bracket to the fuse box with the existing screws.
- 11.10 Install the Spark suppressor and connecting wires into the fuse box (refer to Fig 3).
- 11.11 Fit the fuse cover and gasket.
- 11.12 Reconnect the negative lead to the battery.

or

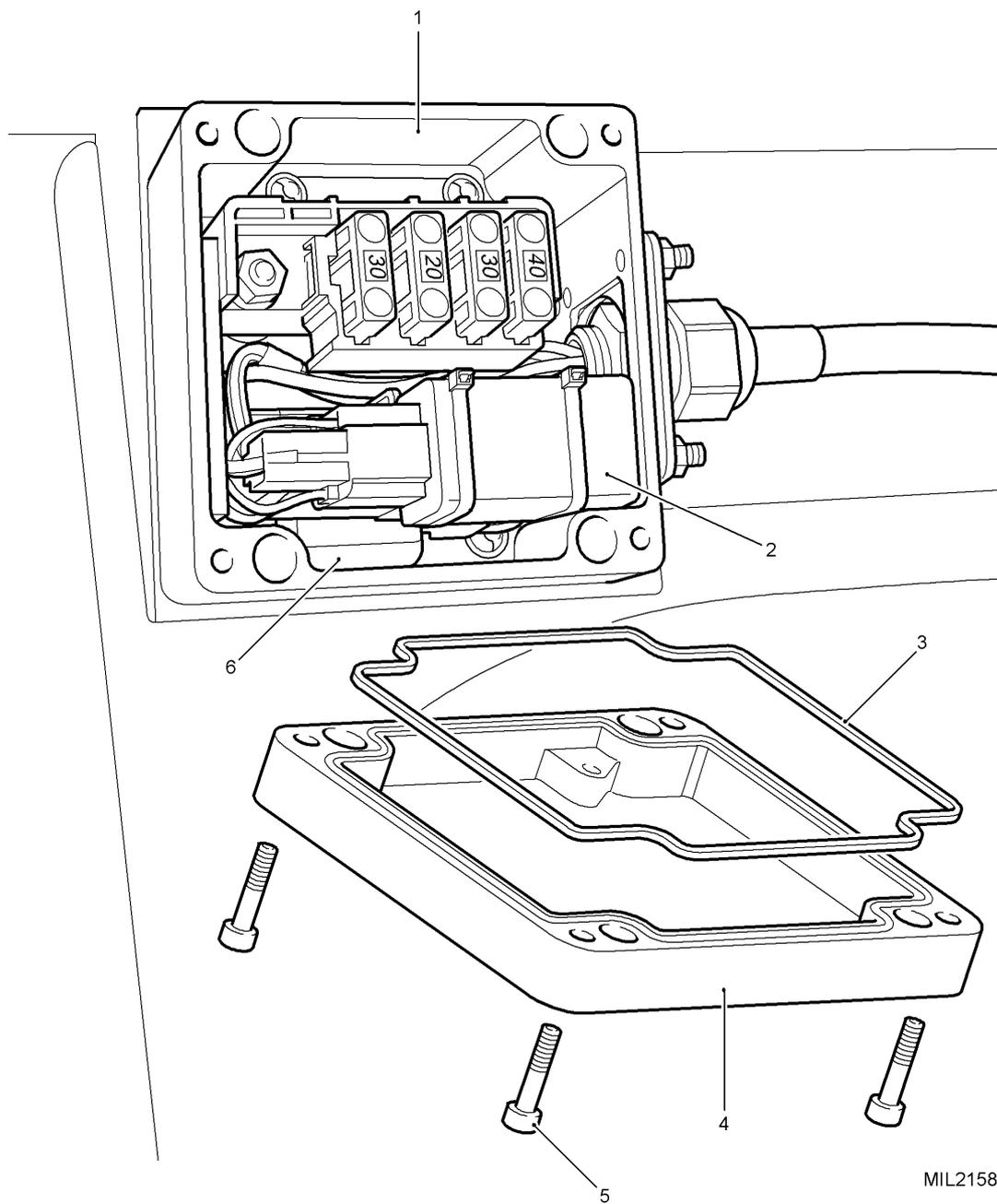
- 11.13 Attach the Glow plug timer to the Interface harness, secure with two cable ties (item 4).
- 11.14 Carefully shape the harness by hand to enable fitment into the fuse box.
- 11.15 Connect the Glow plug timer Interface harness plug to the main harness socket.
- 11.16 Install the Glow plug timer Interface harness to the mounting bracket in the fuse box.
- 11.17 Install the Spark suppressor and connecting wires into the fuse box (refer to Fig 3).
- 11.18 Fit the fuse cover and gasket.
- 11.19 Reconnect the negative lead to the battery.



MIL2156

- | | | | |
|---|----------------------------------|---|---------------------|
| 1 | Main harness fuse box | 5 | Cable ties |
| 2 | Interface harness plug | 6 | Spark suppressor |
| 3 | Glow plug timer mounting bracket | 7 | Screws |
| 4 | Glow plug timer | 8 | Main harness socket |

Fig 2 Fitting the Glow plug timer interface cable – Winter Water

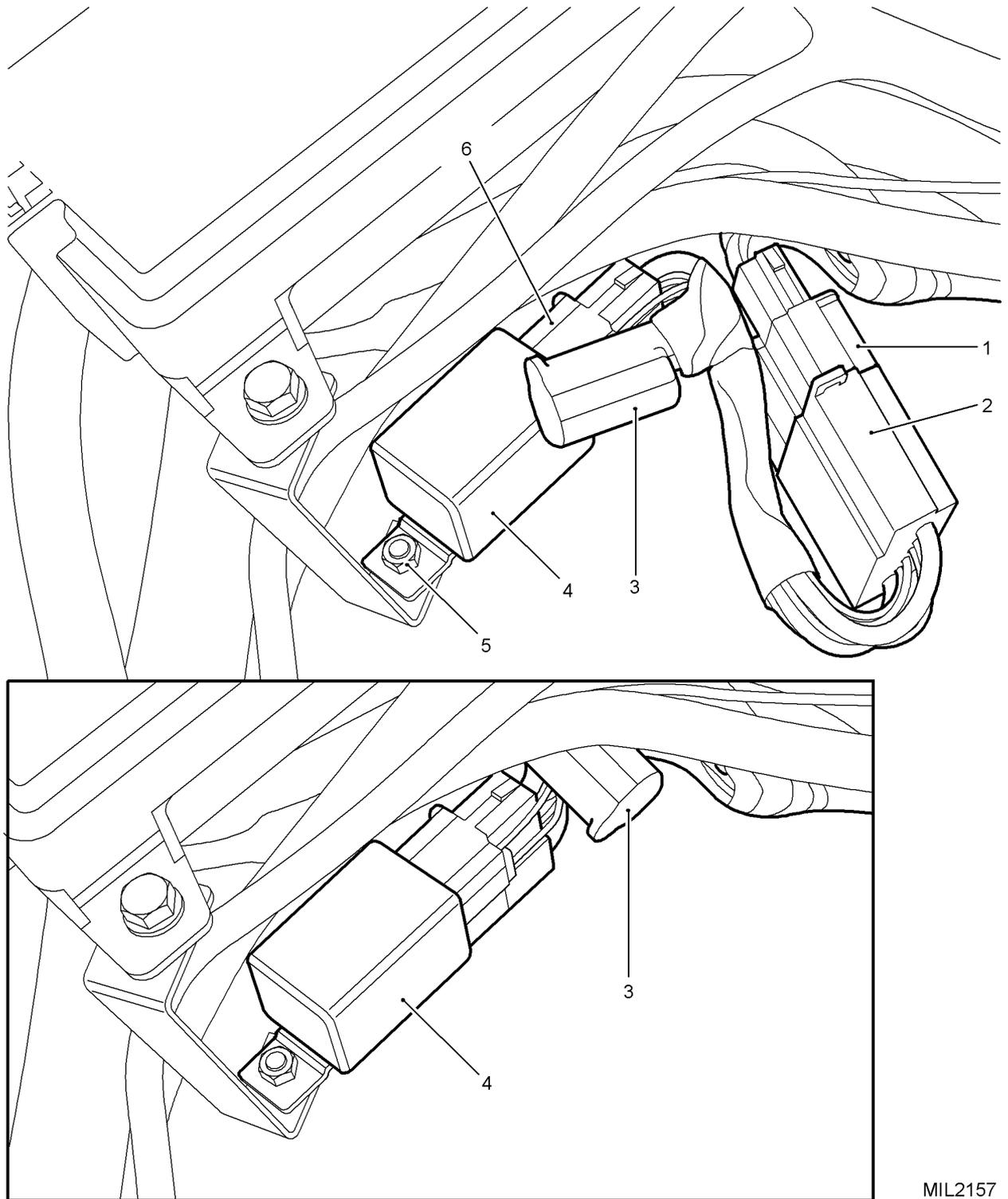


- | | | | |
|---|-----------------------|---|------------------|
| 1 | Main harness fuse box | 4 | Fuse box cover |
| 2 | Glow plug timer | 5 | Screws |
| 3 | Gasket | 6 | Spark suppressor |

Fig 3 Fitting the Glow plug timer interface cable – Winter Water

12 Snatch 2 and Military Core Vehicles (refer to Fig 4):

- 12.1 Disconnect the vehicle batteries (refer to Cat 522, Chap 13).
- 12.2 Remove the vehicle battery closest to the under seat fuse box.
- 12.3 Remove plug from existing Glow plug timer.
- 12.4 Remove nut securing existing Glow plug timer.
- 12.5 Remove Glow plug timer and bracket.
- 12.6 Install new Glow plug timer, bracket and interface harness.
- 12.7 Connect interface harness plug to the main harness socket.
- 12.8 Position Glow plug timer interface harness underneath the existing harness.
- 12.9 Refit vehicle battery.
- 12.10 Reconnect the vehicle batteries.



- | | | | |
|---|------------------------|---|------------------------|
| 1 | Main harness socket | 4 | Glow plug timer |
| 2 | Interface harness plug | 5 | Nut |
| 3 | Spark suppressor | 6 | Glow plug timer socket |

Fig 4 Fitting the Glow plug timer interface cable – Snatch 2 and Military Core Vehicles

TESTING AFTER EMBODIMENT

13 Nil.

EFFECT ON WEIGHT

14 Nil.

PUBLICATION AMENDMENTS

15 Nil.

TRUCK UTILITY LIGHT (TUL) HS
TRUCK UTILITY MEDIUM (TUM) HS
AND (TUM) AMBULANCE HS
MODIFICATION INSTRUCTION NO. 38

Sponsor: GSV PT
Project No.:
File Ref:

Publication Authority: GSV PT, Abbey Wood

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Fitting of a new Import/Export box mounting bracket
(Approval No LSTP)

INTRODUCTION

1 This instruction details the fitting of a new import/export bracket. On vehicles fitted with the Bowman side mounted equipment rack access to the Import/export box cover is not possible unless the box is removed with its bracket. Access to the existing bracket mounting bolts is difficult. The new bracket allows easy access to the mounting bolts, enabling removal of the Import/export box cover. The fitting of the new bracket is easier prior to installation of the side rack therefore if possible fit prior to side rack.

1.1 Limitations on use of equipment. Nil

APPLICABILITY

2 TUM(HS) Vehicles only

2.1 Fitted to equipment held by user units.

REASON FOR MODIFICATION

3 Code 4 – to improve maintainability.

PRIORITY

4 Army: Routine
RAF: Class 3

ESTIMATED TIME REQUIRED

5 Embodiment: 1.5 man hrs.

Stores tools and equipment

NOTE

Items not codified, if required, should be demanded using the manufacturer's part numbers through the normal system.

8

8.1 Stores to be demanded.

8.1.1 The following set is to be demanded quoting this instruction authority.

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
1		2590-99-479-6353	Mounting bracket	1

Sequence of operations

NOTE

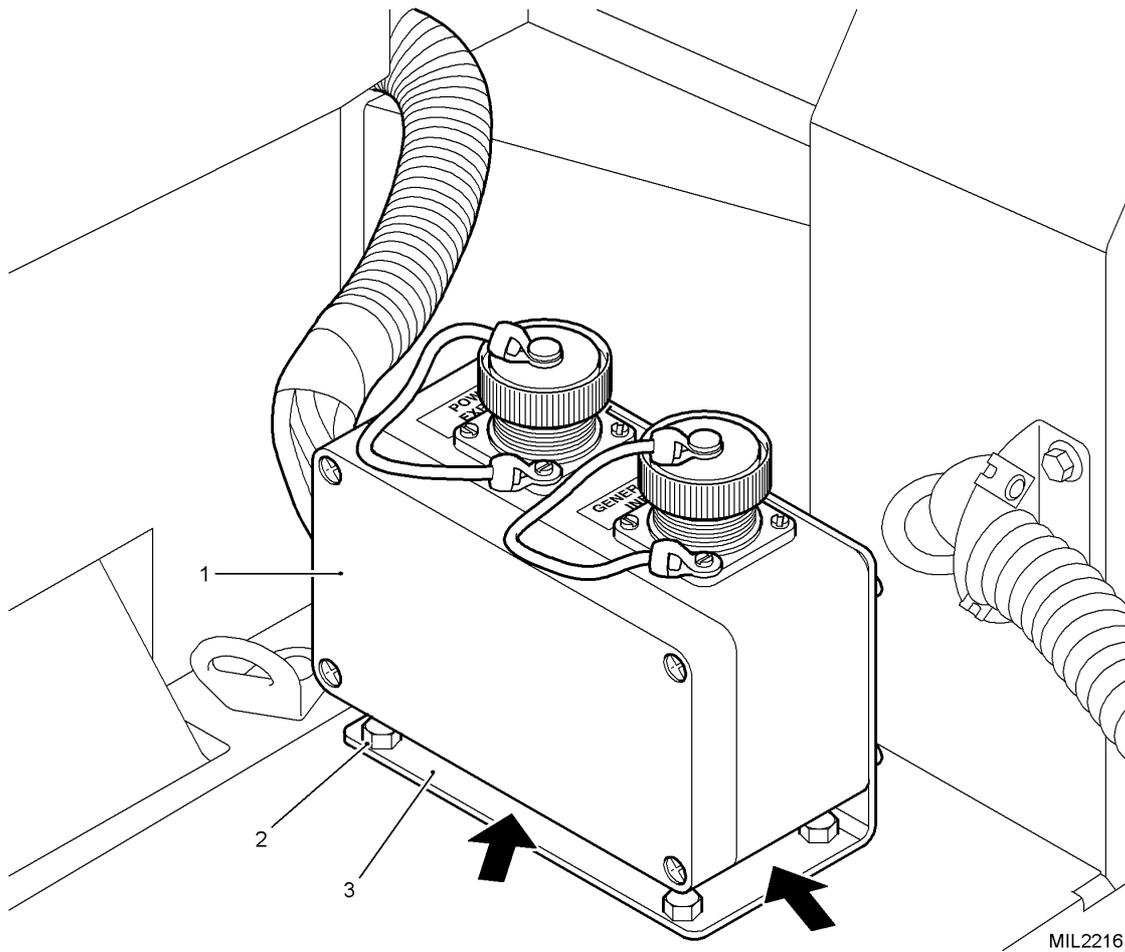
The item numbers in Para 8 are used as references throughout this instruction.

NOTE

It is easier to fit the new mounting bracket prior to the side rack being fitted. Where this is not possible follow the following instructions.

9 Carry out the modification as follows (refer to Fig 1 and 2):

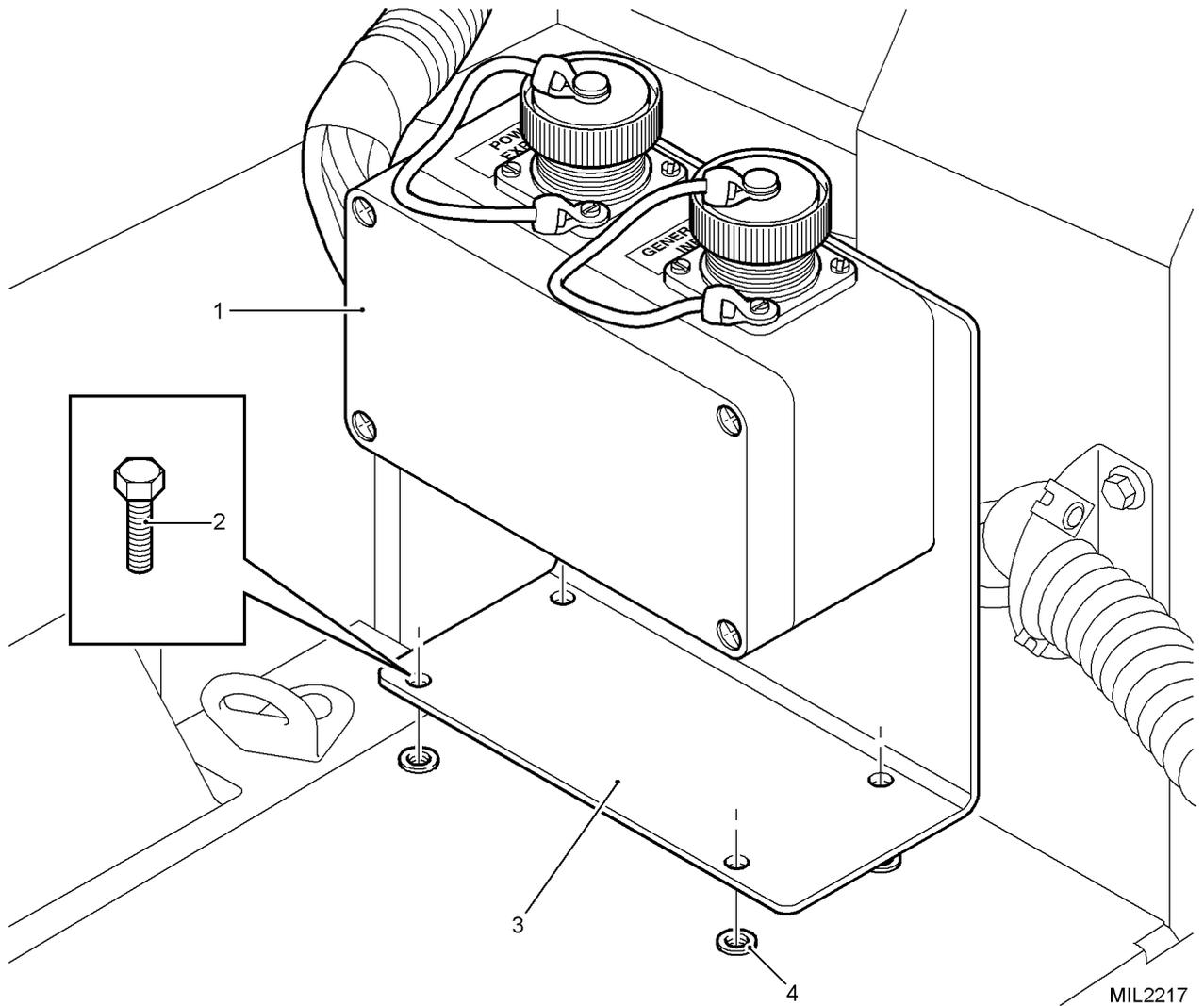
- 9.1 Position the vehicle onto flat, level ground, apply the handbrake and remove the ignition keys.
- 9.2 Disconnect the vehicle batteries.
- 9.3 Remove the Import/export box mounting bracket fixing bolts securing the bracket to the vehicles wheel box, using an open ended spanner on the bolt heads. Access to these bolts between the Import/export box and the bracket, whilst difficult, is possible.
- 9.4 Remove the four screws securing the cover to the Import/export box.
- 9.5 Remove the cover.
- 9.6 Remove the four screws and washers securing the Import/export box to the mounting bracket. Discard the bracket.
- 9.7 Using the existing screws and washers secure the new mounting bracket (1) to the Import/export box.
- 9.8 Refit the cover using the four screws.
- 9.9 Install the Import/export box and mounting bracket to the vehicle using the existing bolts and rivnuts.



1 Import/export box
2 Bolt

3 Bracket

Fig 1 Removal of the Import/export box mounting bracket



- 1 Import/export box
- 2 Bolt

- 3 Bracket
- 4 Rivnut

Fig 2 Fitting the Import/export box mounting bracket

TESTING AFTER EMBODIMENT

10 Nil.

EFFECT ON WEIGHT

11 Negligible.

PUBLICATION AMENDMENTS

12 Nil.

**TRUCK UTILITY MEDIUM (TUM) HS
& TRUCK UTILITY LIGHT (TUL) HS**

MODIFICATION INSTRUCTION NO. 39

Sponsor: OSVP PT
Project No.:
File Ref:

Publication Authority: OSVP PT, Abbey Wood

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: TUM(HS) & TUL(HS) REMUS 1 - SAFETY AND LEGISLATIVE COMPLIANCE PROGRAMME.

(Approval No LSTP 12-6690)

INTRODUCTION

1 This instruction details the vehicle enhancements carried out under the REMUS 1 Safety and Legislative Compliance Programme.

1.1 Front Roll Over Protection System (FROPS). Replacement B hoop and a new front roll cage, comprising of front legs and a screen rail. Dexion racking modification (FFR vehicles only).

1.2 Fitting of new acoustic matting.

1.3 Fitting auto retractor rear seat belts (Not applicable to FFR vehicles without fixed seating).

1.4 Vehicle Corrosion Protection in accordance with AESP2300-A-310-201-B-VEHICLE CORROSION PREVENTION.

APPLICABILITY

2 TUL(HS) and TUM(HS) Vehicles with the following Asset codes:

NB 4225 3100; NB 4225 8100; NB 4226 3100; NB 4229 3100; NB 4232 3100; NB 5006 3100; NB 5007 3100; NB 5008 3100; NB 5008 3160; NB 5009 3100; NB 5009 3160; NB 5009 3170; NB 5010 3100; NB 5010 3101; NB 5010 3160; NB 5010 3161; NB 5010 3170; NB 5010 3171; NB 5010 3199; NB 5010 8100; NB 5010 8160; NB 5010 8170; NB 5017 3100; NB 5017 3160; NB 5017 3190; NB 5017 8100; NB 5020 3100; NB 5020 3101; NB 5020 3102; NB 5020 3103; NB 5020 3104; NB 5020 3105; NB 5020 3106; NB 5020 3107; NB 5020 3160; NB 5020 3161; NB 5020 3170; NB 5020 3180; NB 5020 3190; NB 5020 8100; NB 5020 8101; NB 5020 8102; NB 5020 8103; NB 5020 8104; NB 5020 8160; NB 5020 8170; NB 5020 8180; NB 5020 8190; NB 5021 3100; NB 5021 3160; NB 5021 3170; NB 5021 3180; NB 5021 3190; NB 5022 3100; NB 5031 3100; NB 5031 3160; NB 5031 3170; NB 5031 3180; NB 5031 8100; NB 5031 8160; NB 5035 3100; NB 5040 3100; NB 5041 3100; NB 5041 3101; NB 5042 3100.

REASON FOR MODIFICATION

3 Code 1 - to improve Safety and Legislative Compliance.

PRIORITY

4 RM/Army: Routine.
RAF: Class 3.

ESTIMATED TIME REQUIRED

5 Embodiment: 22-30 man hrs, GS/FFR.

MODIFICATION IMPLEMENTATION PLAN

6

6.1 UK Based Units: Units will not embody the modification; the programme will be delivered by DSG working to DE&S / FLC.

6.2 Germany based Units: Units will not embody the modification; the programme will be delivered by ESS(G) using Civilian Workshops and authorised Contractors.

6.3 Overseas Units: Embodiment modification kits will be issued to authorised Units for local embodiment in accordance with a specific DE&S / FLC programme.

6.4 Modification plate strike action. N/A

Action required by

7

7.1 REMUS 1 is only applicable to TUM(HS) & TUL(HS) vehicles and does not include BFA vehicles.

7.1.1 Examine JAMES / Vehicle Documents to see if modification is applicable.

7.1.2 Input Standards. The User is responsible for the following before the vehicle is submitted to the CRB responsible for implementing this modification instruction:

7.1.2.1 The thorough cleaning of the interior and exterior (incl. underside) of the vehicle.

7.1.2.2 The removal of any Radio Equipment / LRU's fitted to the vehicle.

7.1.3 Upon completion of embodiment, units are responsible for recording the modification, subject and the AESP number in JAMES and equipment records.

Stores tools and equipment

NOTE

Units will not be able to demand kits under cover of the Modification Instruction. Parts will be issued under the direction of DE&S/FLC.

8

8.1 Stores to be supplied.

8.1.1 The following set is to be demanded quoting this instruction authority.

Item No	DMC	NSN	MPN	Designation	Qty per eqpt
		2510-99-151-5723	RBL241 7SSS	FROPS kit, Comprising:	1
1		2510-99-433-4917		B Hoop	(1)
2		2510-99-613-4846		Front leg, RH (labelled FL RH)	(1)
3		2510-99-813-1637		Front leg, LH (labelled FL LH)	(1)
4		2590-99-842-0693		Under body bracket, RH (with fitting plate)	(1)
5		2590-99-350-9009		Under body bracket, LH (with fitting plate)	(1)
6		2510-99-387-2351		Screen rail	(1)
		2510-99-551-8050		Fitting kit Comprising:	(1)
7	G1B	5306-99-122-4911		M10 x 30, hex hd bolt	((20))
8	G1	5310-99-941-6371		M10, nyloc nut	((20))
9	G1C	5310-99-122-6476		M10, washer	((40))
10	G1A	5305-99-162-2764		M8x 30, hex hd bolt	((2))
11	G1	5310-99-941-3199		M8, nyloc nut	((2))
12	G1C	5310-99-613-2182		M8, washer	((2))
13	G1A	5306-99-477-6711		M6 x 35 hex hd bolt	((4))
14	7XD	5310-99-215-9928	1MA6/ZG	M6, flat washer	((4))
15		5310-99-241-6614		M6, spring washer	((4))
16		5365-99-897-3169		Spacers (for sun visors)	((4))
		2540-99-597-0077		R380 Cab Interior Moulded Matting kit Comprising:	1
17		2590-99-412-1802	EXD00084	Cab Bulkhead trim	(1)
18		2590-99-851-0681	EXD00082	Cab Seat Base trim	(1)
19		2590-99-996-0861	EXD00083	Cab Floor Mat	(1)
20		2540-99-667-0110		110 Rear Load Area Acoustic Matting	1

Item No	DMC	NSN	MPN	Designation	Qty per eqpt
		2540-99-834-8997		Auto Retracting Seat Belt Kit Comprising, per kit:	2,4 or 8*
21		NP		Auto Retracting Seat Belt (ARB) Reel	(1)
22		NP		Seat Belt Buckle	(1)
23		NP		Mounting Bracket	(3)
24	G1	5306-99-941-0328		Bolt 7/16 UNF x 40 (Seat belt reels to Brkt)	(1)
25	G1	5305-99-941-0553		Bolt 7/16 UNF x 20 (seat belt buckle to Brkt)	(2)
26	G1	5305-99-941-0555		Bolt 7/16 UNF x 25 (bracket to floor)	(3)
27		NP		Spacer (fitted between buckles)	(1)
28	G1	5310-99-941-0927		Nut 7/16 UNF	(3)
29	G1C	5310-99-120-6046		Shake-proof washer	(3)
30a		8030-12-381-9366		Dinitrol wax 3850 (60 Litre Drum) (Used for internal floor & exterior chassis and exposed under body panels)	A/R
30b		8030-99-340-2982		Dinitrol liquid 4942 (20 Litres) (Used for protection of chassis and body Box Sections)	A/R

NOTE * =
 (2) All FFR
 (4) TUL(HS) GS
 (8) TUM(HS)

8.2 Stores to be obtained locally.

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
31			Pop Rivet (1/8")	8
32			M8 Nyloc nut	8
33			Tube, 50mm diameter	1
34			Pop Rivet (3/16")	A/R

Sequence of operations

8.3 The Item numbers in para 8 are to be used as references throughout this instruction.

8.4 Sequence of operations to be carried out as follows:

8.4.1 FIRST. Clean and Degreasing Power Wash (in preparation for Corrosion Protection Treatment) Refer to para 9.1.

8.4.2 SECOND. FROPS Installation Refer to para 9.2.

8.4.3 THIRD. Acoustic Matting Installation Refer to para 9.10.

8.4.4 FOURTH. Seat Belt Installation Refer to para 9.15.

8.4.5 LAST. Anti Corrosion Treatment Refer to para 9.16.

9

9.1 Preparation

9.1.1 As the vehicle will be treated with a Corrosion Preventative Compound (CPC) as the last process of REMUS 1, the underside of the vehicle must be thoroughly power cleaned and dried prior to the application of Dinitrol (item 30a).

9.2 Removing the existing B hoop (refer to Fig 1)

NOTE

To allow the removal of the components and only were absolutely necessary the cable ties securing the BOWMAN cables can be unclipped or cut. The cables are not to be removed from the vehicle/BOWMAN frames. Cables are to be checked and refitted/secured back in place by a BOWMAN Maintainer who is to carry out a BIT on the installation once the vehicle is back in Unit Lines.

9.2.1 Position the vehicle onto flat, level ground, apply the handbrake and remove the ignition keys.

9.2.2 Disconnect the vehicle batteries.

9.2.3 Remove the side mounted spare wheel along with any other external fittings. Retain fasteners for reassembly.

9.2.4 Remove the roof (Soft or Hard top) completely. Retain fasteners for reassembly.

9.2.5 Remove sun visors.

9.2.6 Unbolt the upper seat belt mounting from the B hoop and move aside. Retain fasteners for reassembly.

9.2.7 Remove the rifle mount and all other ancillaries attached to the B hoop. Discard the U bolt, but retain the plate.

9.2.8 Remove spare wheel mount(s). Retain fasteners for reassembly.

NOTE

For FFR vehicles remove the radio mount dexion racking. The racking will need to be modified to accommodate the B hoop diagonal braces prior to refitting. Refer to para 9.14.

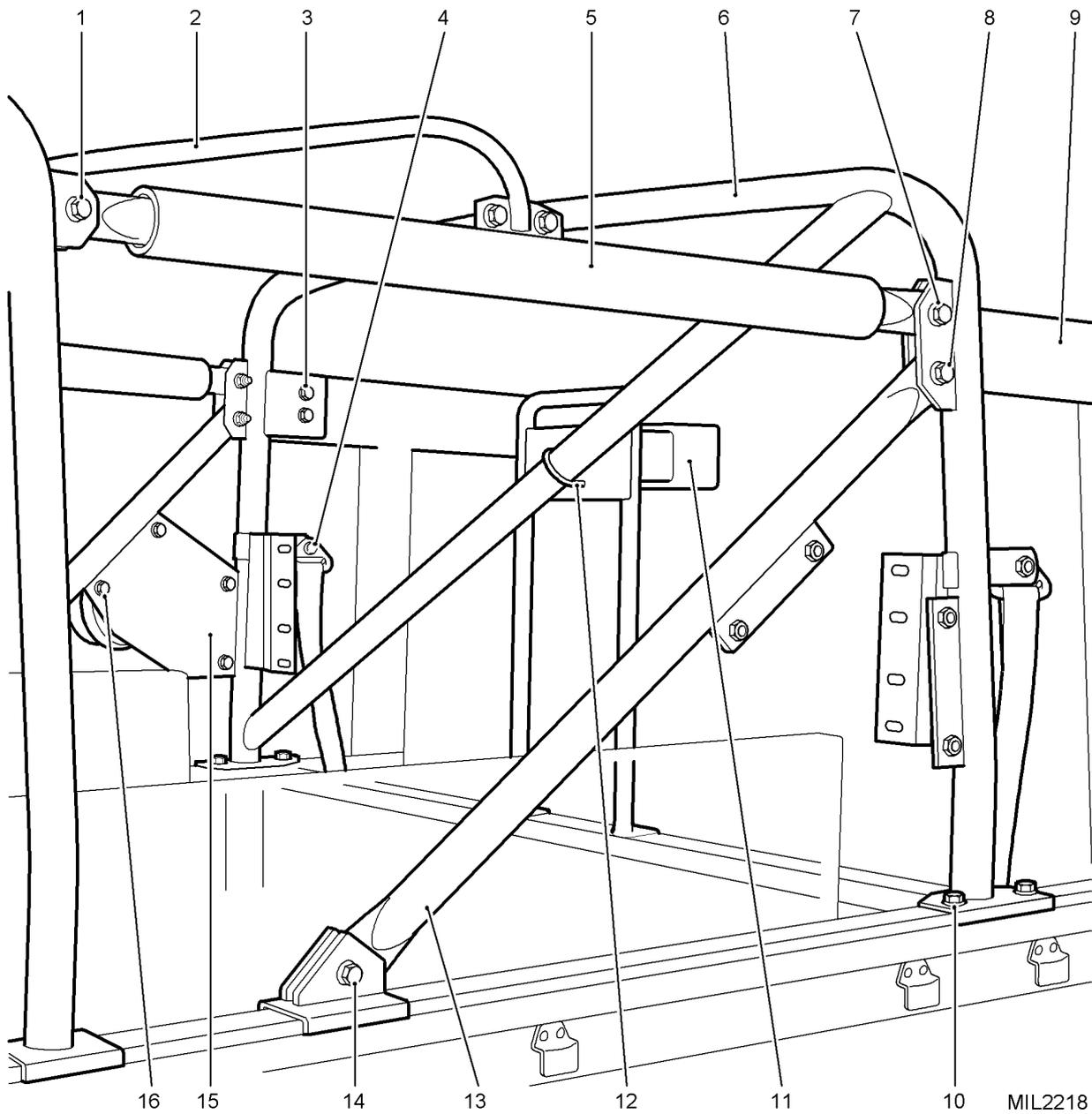
9.2.9 Remove the foremost bolt and loosen the rearmost bolt in each front cant rail, leaving hood stick bolted in position. The complete assembly can be pivoted upwards out of the way. Retain fasteners for reassembly.

9.2.10 Remove upper and loosen the lower bolts in each backstay. These can also be pivoted rearwards out of the way. Retain fasteners for reassembly.

9.2.11 Remove 4 bolts (2 each side) from the B hoop capping plate. Retain fasteners for reassembly.

9.2.12 Remove 4 bolts (2 each side) from the upper B hoop plate, where the door frames mount. Retain fasteners for reassembly.

9.2.13 The B hoop should then be lifted directly upwards and clear of the vehicle.



- | | | | |
|---|----------------------|----|--------------------------|
| 1 | Rear cant rail bolt | 9 | Door frame |
| 2 | Hood stick | 10 | B hoop bolt |
| 3 | Door frame bolt | 11 | Rifle mount |
| 4 | Seat belt bolt | 12 | U bolt |
| 5 | Cant rail | 13 | Back stay |
| 6 | B hoop | 14 | Back stay lower bolt |
| 7 | Front cant rail bolt | 15 | Spare wheel carrier |
| 8 | Back stay upper bolt | 16 | Spare wheel carrier bolt |

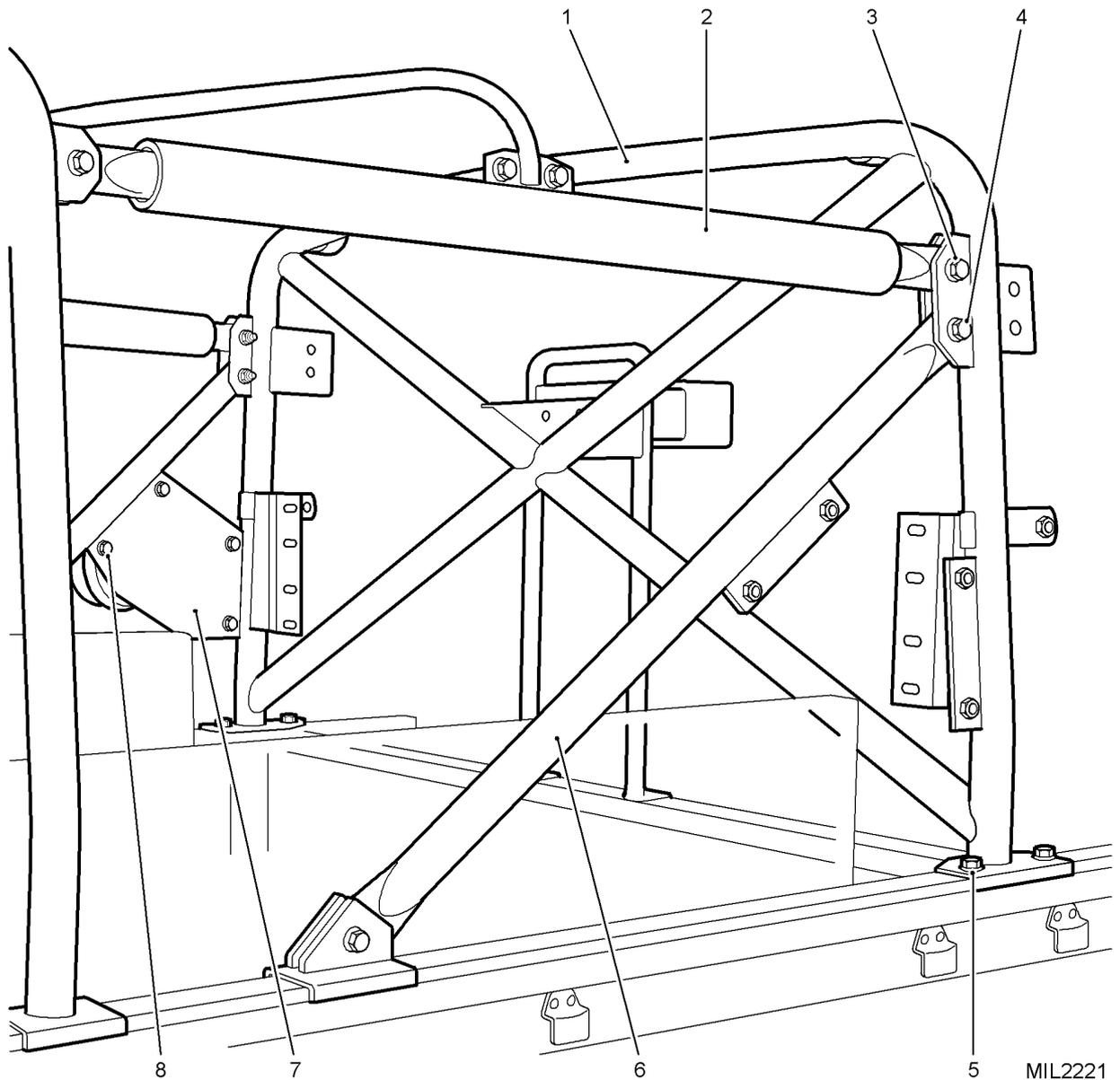
Fig 1 Removal of the B hoop

9.3 Fitting the new B hoop and front cage (refer to Fig 2)

9.3.1 Insert new B hoop into the existing position. If this does not locate directly into the corner brackets they may need to be removed and refitted once the hoop is in position.

9.3.2 Bolt the B hoop loosely into position where it mounts to the capping, using original fasteners.

9.3.3 The cant rail assembly, backstays and spare wheel mounts should then be refitted to the new B hoop and bolted together loosely using original fasteners.



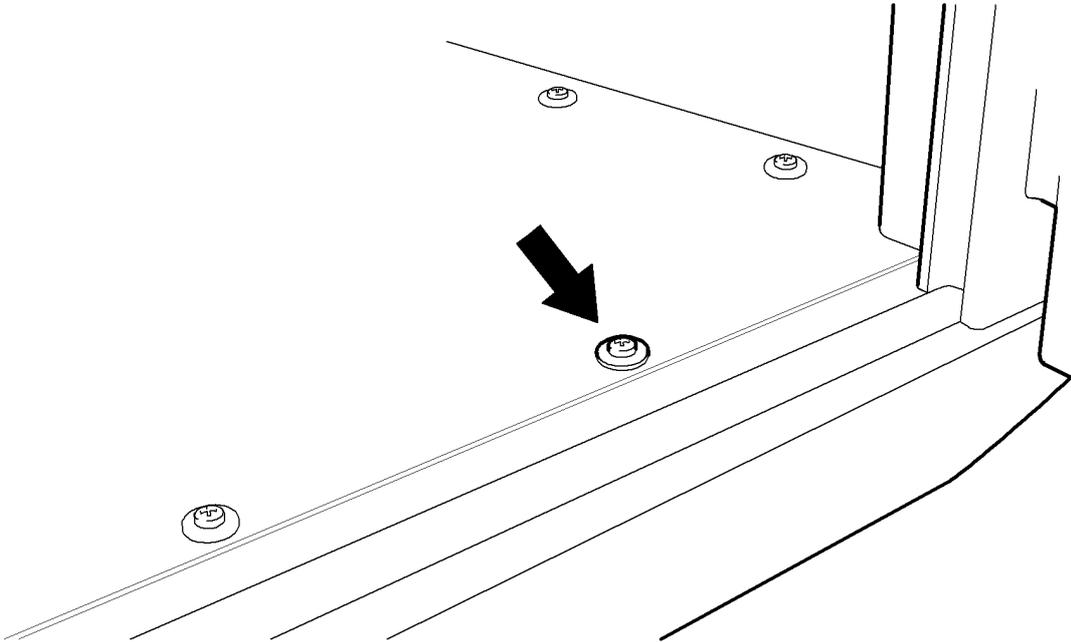
MIL2221

- | | | | |
|---|----------------------|---|--------------------------|
| 1 | B hoop | 5 | B hoop bolt |
| 2 | Cant rail | 6 | Back stay |
| 3 | Front cant rail bolt | 7 | Spare wheel carrier |
| 4 | Back stay upper bolt | 8 | Spare wheel carrier bolt |

Fig 2 Fitting the new B hoop

9.4 Under body Bracket fitting - Part A

9.4.1 Remove and discard the bolt highlighted, as it will not be reused (RHS shown). Drill the existing hole out to 11mm (refer to Fig 3).



MIL2219

Fig 3 Fitting the under body bracket

NOTE

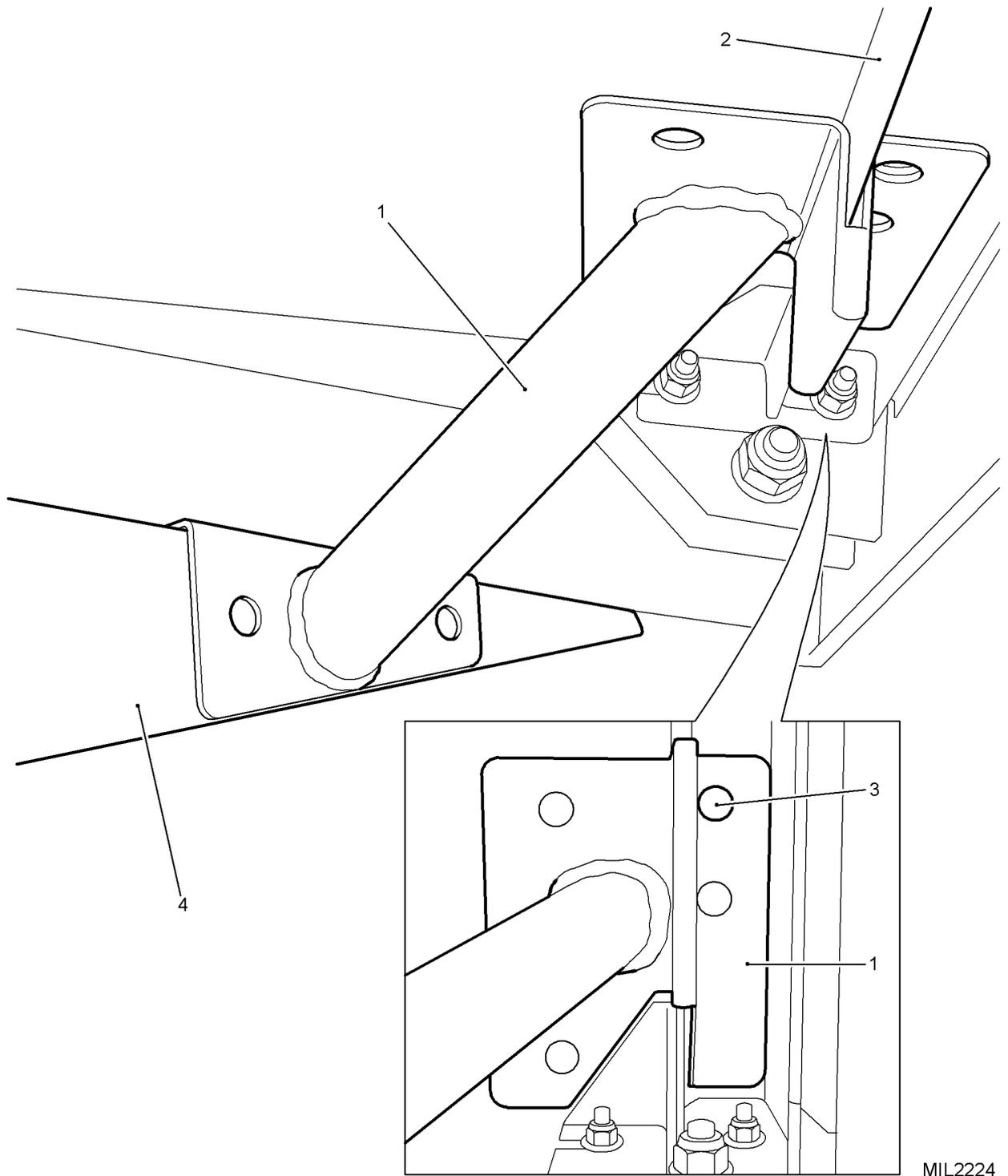
Ensure any holes drilled are suitably primed and painted to protect against corrosion.

NOTE

Ensure that the undersides of the floor pan and chassis outriggers are clear of any dirt and debris where the bracket will be mounted.

9.4.2 Position the under body bracket (item 4 or item 5) onto the seam beneath the floor, then tap forwards using a soft mallet until it sits against the chassis outrigger. These are handed brackets for each side of the vehicle.

9.4.3 It is important that the top plate of this bracket sits in between the floor and the existing bracket on the vehicle. The hole drilled through the floor pan in step 9.4.1 must align with the rearmost outer hole in the under body bracket (refer to Fig 4).



MIL2224

- 1 Under body bracket RH
- 2 Seam

- 3 Hole
- 4 Outrigger

Fig 4 Fitting the under body bracket

9.5 Dash modification - Driver's side

9.5.1 Working on the end of the dash, check the heater controls are operating correctly. If the movement is very stiff or ceased then they should be repaired before progressing any further with the installation.

9.5.2 Remove the complete heater control assembly from the end of the dash. Be careful not to lose any fasteners or spacers (if fitted) as these will need to be refitted.

9.5.3 Remove the black plastic handles and screws from the heater control arms and store carefully.

9.5.4 Remove the trim panel from the heater control arm assembly.

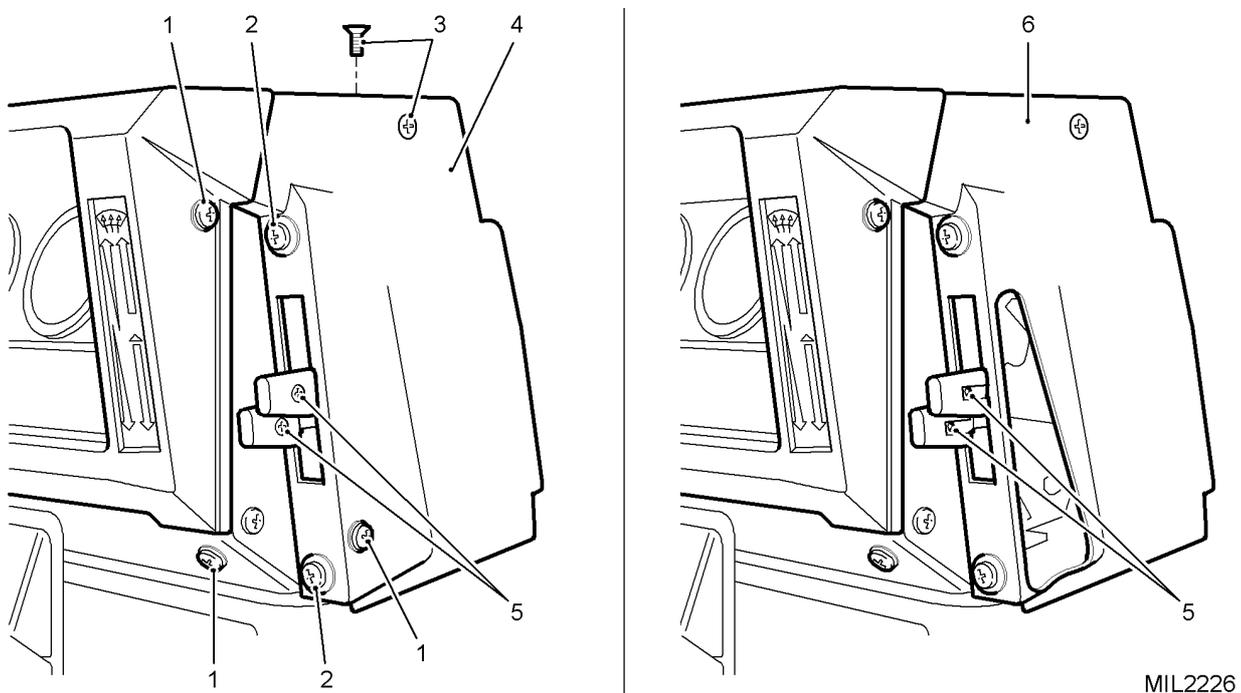
9.5.5 Cut out the template (supplied as an appendix at the end of this mod instruction) and lay onto the trim panel.

NOTE

This template should be used as a guide only; additional trimming may be required to suit each individual installation due to variances between vehicles.

9.5.6 Carefully mark the section to be removed and cut out using an air saw or a pair of tin snips. The edges should be smoothed using a file.

9.5.7 Refit the modified trim panel to the heater control arm assembly using existing fasteners and spacers.



- | | | | |
|---|---|---|-----------------------|
| 1 | Trim panel retaining screws | 4 | Trim panel |
| 2 | Heater control mechanism retaining screws | 5 | Control handle screws |
| 3 | Trim panel counter sunk screws | 6 | Modified trim panel |

Fig 5 Driver's Side Dash modification

9.5.8 Refit the black plastic handles with the screw now facing outwards (they faced inwards originally).

9.5.9 Refit the entire assembly onto the end of the dash. Check the operation of the controls again at this point to ensure there are no problems.

9.6 Front Legs & Screen Rail fitting

9.6.1 Position a front leg (item 2 or item 3) onto the floor and locate using the existing hole (refer to para 9.4.1) as a datum point - insert a single M10 x 30mm bolt (item 7) to maintain this position. Locate the front leg bracket onto the B hoop (item 1) and insert 2 x M10 x 30mm bolts (item 7), washers (item 9) and nyloc nuts (item 8). These should only be finger tight at this point (refer to Fig 6).

9.6.2 Mark the positions of the remaining holes onto the floor.

9.6.3 Remove the front leg and centre punch the positions marked.

9.6.4 Drill through the 3 new positions with a 5/6mm pilot drill, then open all holes to 11mm.

NOTE

Ensure any holes drilled are suitably primed and painted to protect against corrosion.

9.6.5 Repeat processes 9.6.1 to 9.6.4 for the opposing side of the vehicle.

NOTE

For Winter Water vehicles only, the wiper box will need to be re-moulded to accommodate the fitting of the left front leg (item 3). Refer to step 9.9 for details.

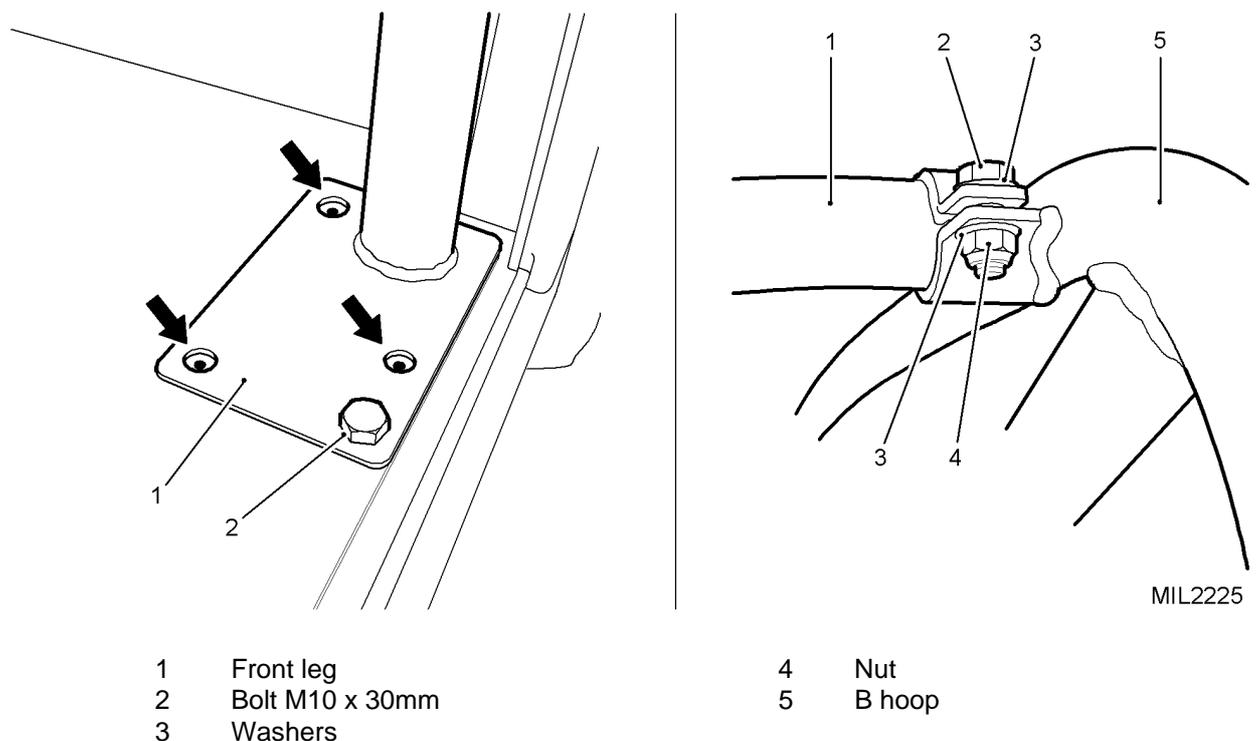


Fig 6 Fitting the front legs

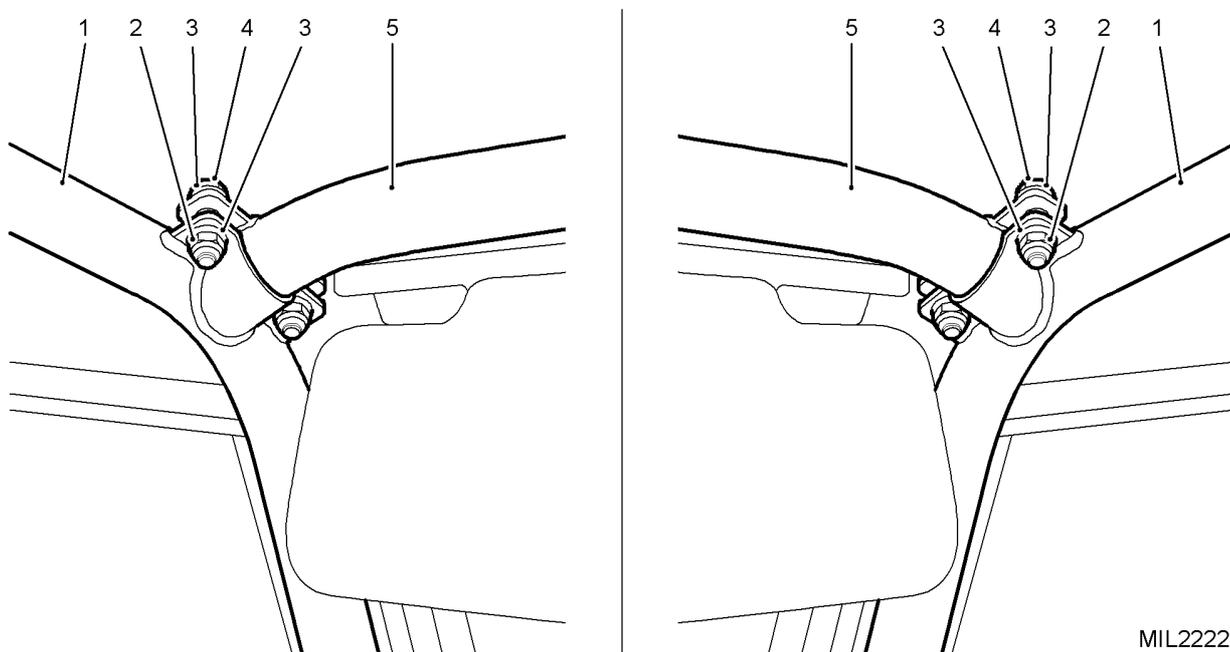
9.6.6 Reposition the front legs and bolt loosely to the floor and onto the B hoop. The bolts should only be finger tight to hold the parts in position.

9.6.7 Position the screen rail (item 6) between the front legs (item 2 and item 3) and bolt together with 2 x M10 x 30mm bolts (item 7), washers (item 9) and nyloc nuts (item 8) on the passenger side only. The bolts should only be finger tight to hold the parts in position.

9.6.8 Insert the remaining 2 x M10 x 30mm bolts (item 7), washers (item 9) and nyloc nuts (item 8) into the driver's side of the screen rail. The bolts should only be finger tight to hold the parts in position.

CAUTION

If there is any difficulty inserting these screen rail bolts into position, the heater control assembly must be removed for additional trimming (see step 9.5.6). This process should be repeated as many times as required to ensure that suitable clearance is achieved. It should not be necessary to 'lever' the bolt holes for correct alignment.



MIL2222

1 Front leg
2 Nut
3 Washers

4 Bolt M10 x 30mm
5 Screen rail

Fig 7 Fitting the screen rail

9.6.9 Gently tighten the 8 x M10 x 30mm bolts inserted in steps 9.6.1, 9.6.6, 9.6.7 and 9.6.8, fastening the front legs to the B hoop and screen rail. The bolts should only be tightened sufficiently in order to remove 'play' in the assembly.

CAUTION

When tightening the saddle bracket joints it is important that the side with the largest gap is tightened first to ensure that the gaps on each side are more even.

9.6.10 Gently tighten the 8 x M10 x 30mm bolts inserted in step 9.6.6, fastening the front legs to the vehicle floor. The bolts should only be tightened sufficiently in order to remove 'play' in the assembly.

9.7 Under body Bracket fitting - Part B (where outrigger is not predrilled)

9.7.1 G clamp the under body bracket (item 4 or item 5) down onto the chassis outrigger.

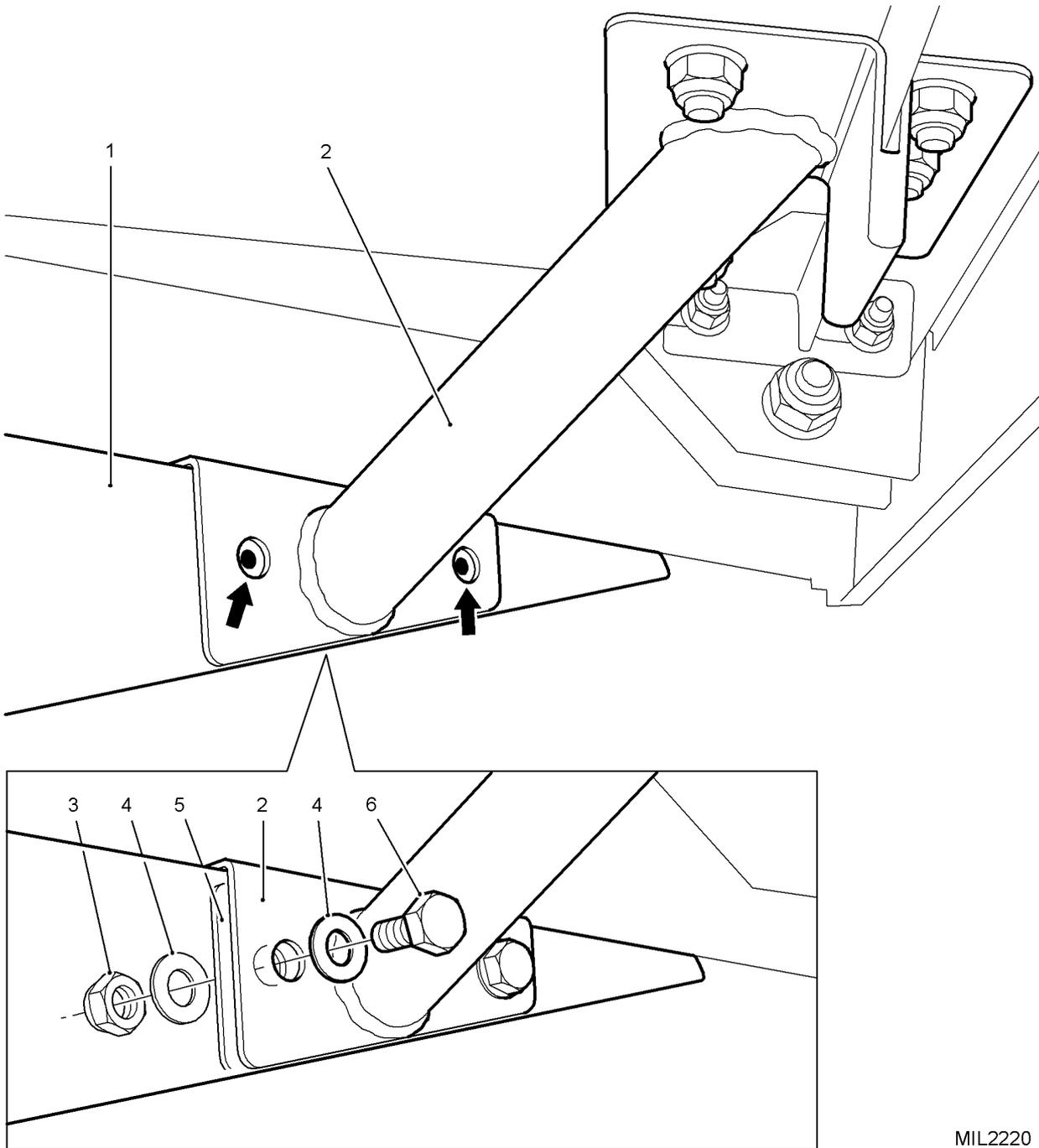
9.7.2 Drill through chassis outrigger with 11mm drill.

NOTE

Ensure any holes drilled are suitably primed and painted to protect against corrosion.

9.7.3 Bolt the under body mount (item 4 or item 5) to the chassis outrigger using 2 x M10 x 30mm bolts along with washers and Nyloc nuts each side, ensuring the fitting plate is correctly located behind.

9.7.4 Repeat processes 9.7.1 - 9.7.3 for the other side of the vehicle.



MIL2220

- | | | | |
|---|-------------------|---|-----------------|
| 1 | Chassis outrigger | 4 | Washers |
| 2 | Under body plate | 5 | Fitting plate |
| 3 | Nut | 6 | Bolt M10 x 30mm |

Fig 8 Fitting the under body bracket

9.8 B Hoop fitting - Part B

9.8.1 The rifle mount should now be refitted using the original 2 x lower fixings only.

9.8.2 Clamp the upper part of the rifle mount against the triangulating plate of the B hoop.

9.8.3 Drill through the rifle mount plate in 2 positions with a 9mm drill.

NOTE

Ensure any holes drilled are suitably primed and painted to protect against corrosion.

9.8.4 Bolt the rifle mount to the B hoop using 2 x M8 x 30mm bolts (item 10), washers (item 12) and nyloc nuts (item 11), ensuring the fitting plate (from step 9.2.6) is positioned on the rifle mounts forward face (refer to Fig 9).

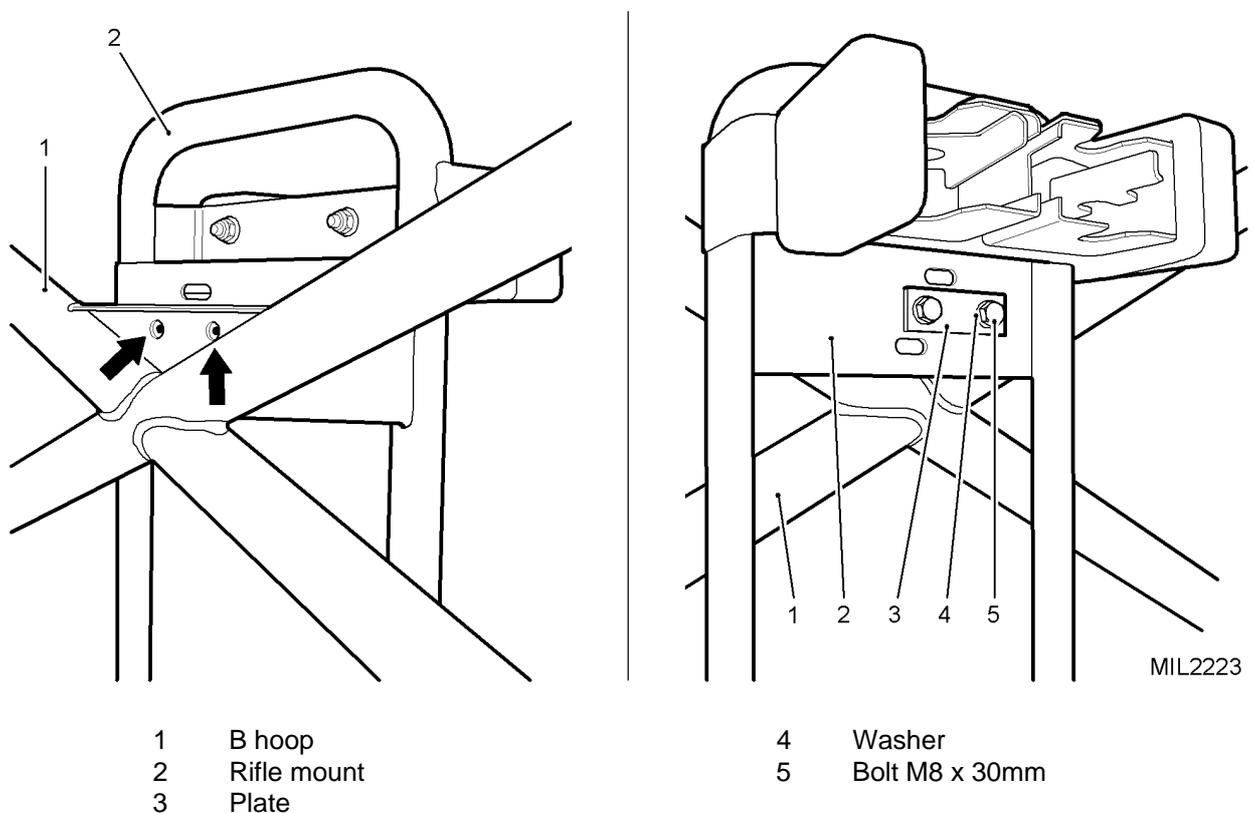


Fig 9 Fitting the rifle mount

9.8.5 Refit the upper seat belt mounting using original fasteners.

9.8.6 Replace the roof (Soft or Hard top) using original fasteners.

9.8.7 Replace the sun visors using 4 x M6 x 35 bolts (item 13), washers (item 14) and spring washers (item 15). If applicable, it may also be necessary to fit the spacers (item 16) supplied in the fitting kit.

NOTE

If items 16 are not fitted they should be bagged and placed in the vehicle dash to allow User the opportunity to fit as required.

9.8.8 Replace the side mounted spare wheel and any other external fittings using original fasteners.

CAUTION

All four saddle bracket joints should now be tightened. This should be completed gradually, moving around each joint in turn until all bolts are tightened to 30 Nm. Only hand tools should be used during this process.

9.8.9 All remaining roll cage bolts should now be tightened fully to the torque settings specified below:

9.8.9.1 All M10 bolts - 30Nm

9.8.9.2 M8 bolts (Rifle mount only) - 20Nm

9.8.9.3 Seat belt anchorage bolts - 32Nm

9.9 Remoulding the wiper box on Winter Water vehicles

9.9.1 Refer to figure 10. Position the LH front leg (item 3) against the wiper box to identify where the wiper box needs to be remoulded.

9.9.2 Use a marker pen and mark the wiper box where the front leg touches.

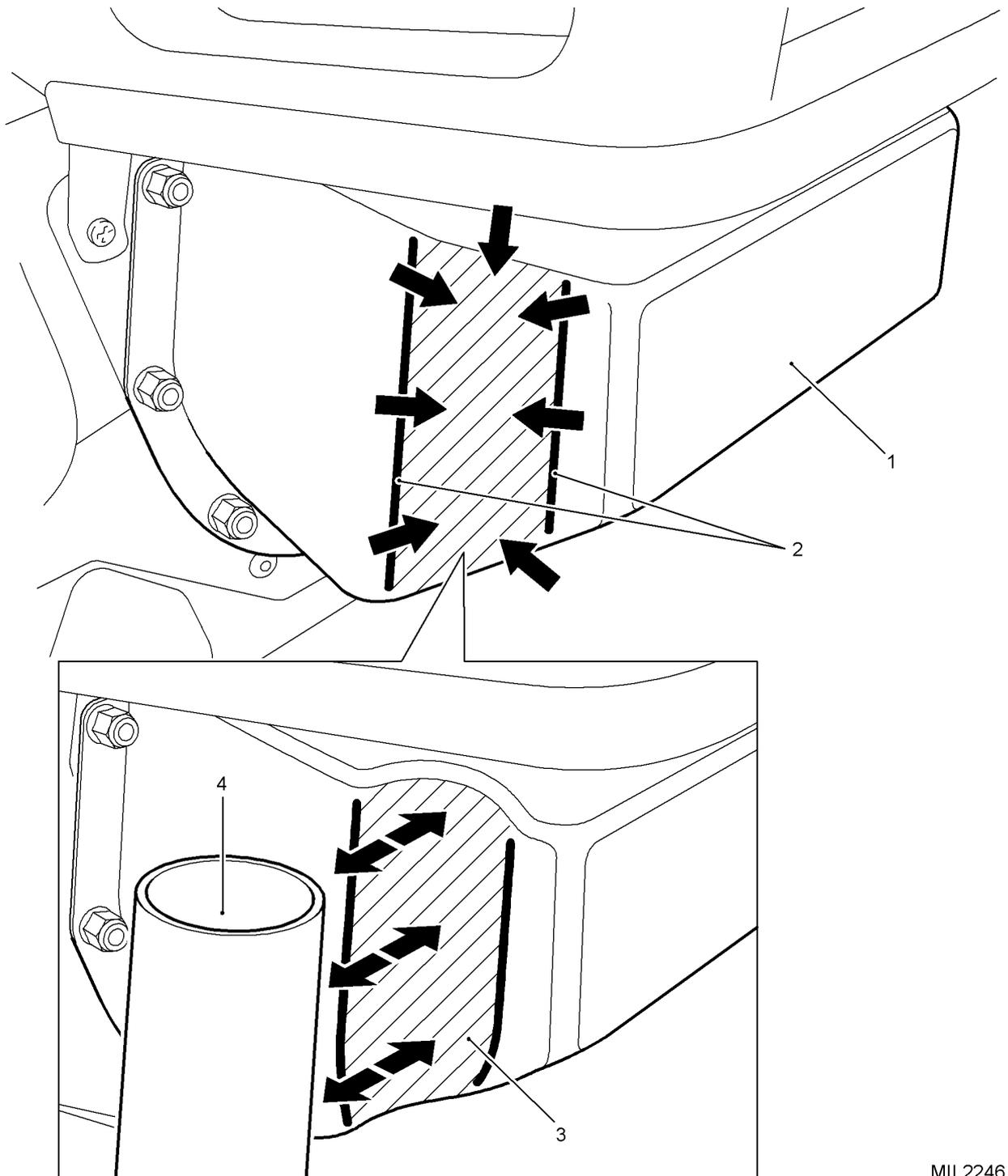
9.9.3 With care, use a hot air heat gun and apply heat gently to the area within the marked up area of the wiper box.

CAUTION

Apply the minimum amount of heat necessary. Do not get the heat gun too close or overheat the wiper box.

9.9.4 Using the metal tube (item 33) press the required form into the wiper box.

9.9.5 Install the front leg into position (refer to 9.6.6) and check that there is clearance between the front leg and wiper box. (If necessary repeat steps 9.9.2 to 9.9.4).



MIL2246

1 Wiper box
2 Marker pen

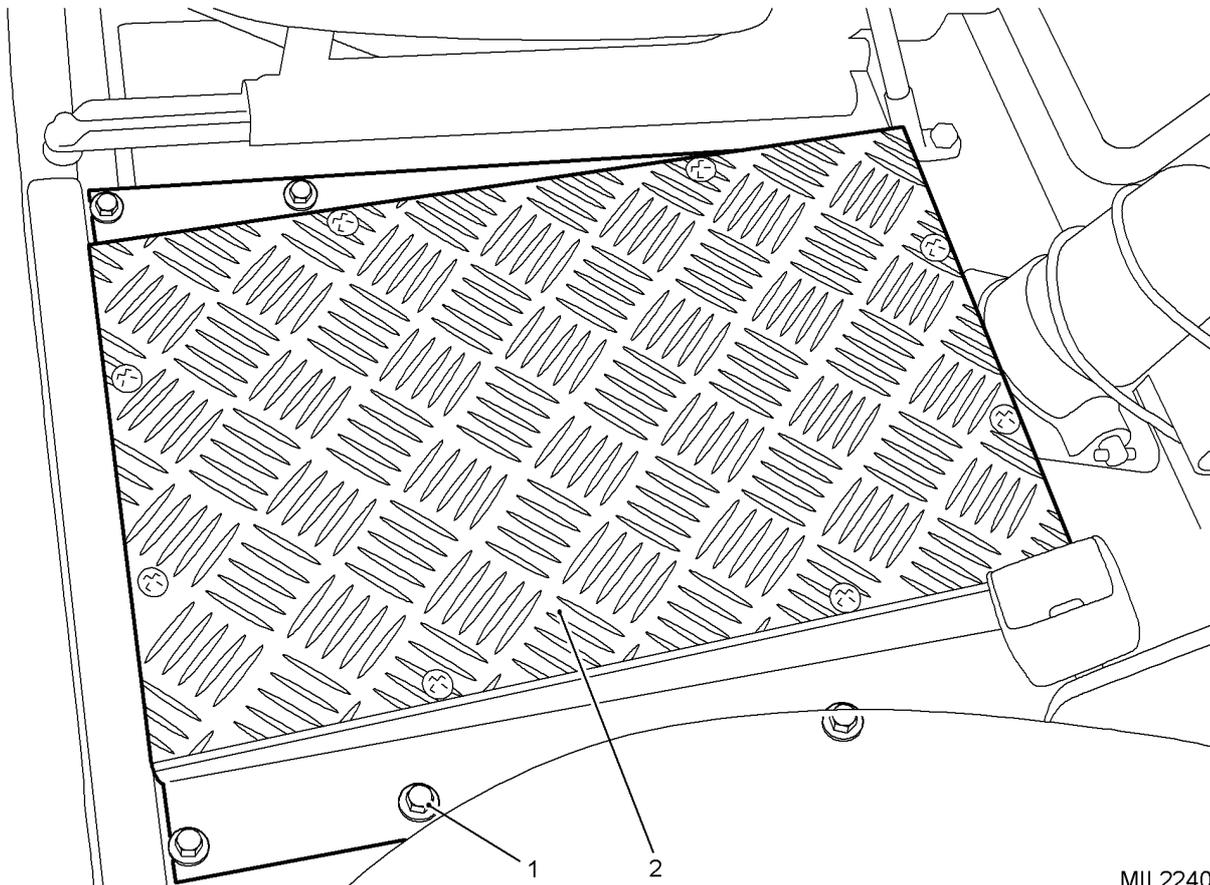
3 Remoulded area
4 Metal tube

Fig 10 Remoulding the Winter Water vehicle wiper box

9.10 Fitting the Cab Bulkhead trim

9.10.1 Remove the fixings securing the ECU box from between the front seats.

9.10.2 Disconnect the EGR ECU harness connectors from under the ECU box.



1 Fixings

2 ECU Box

Fig 11 Removing ECU box

9.10.3 Remove the seat cushion.

9.10.4 Remove the four fixings and spacers securing the seat to the seat base.

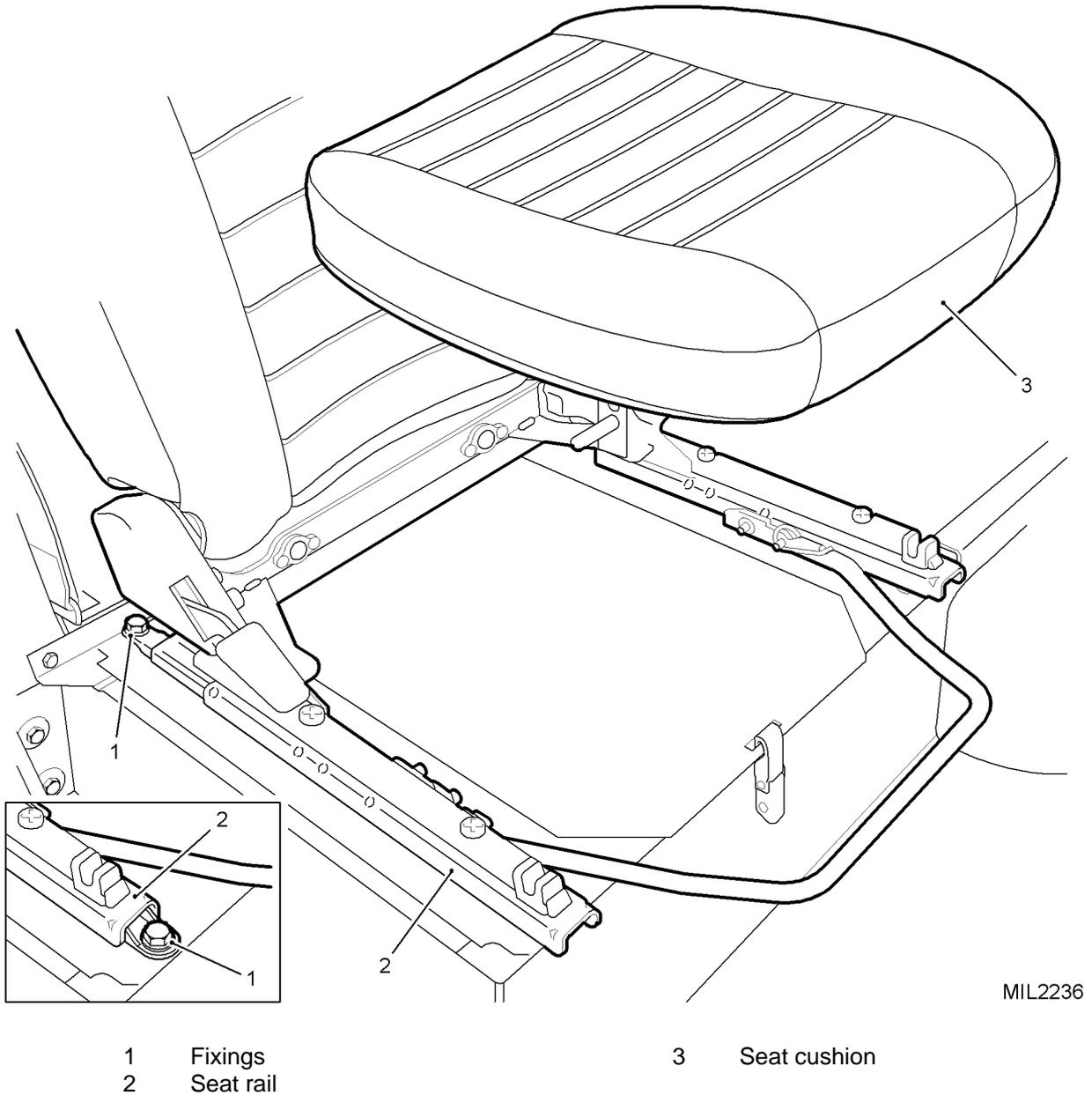


Fig 12 Removing front seats

9.10.5 Clean the cab thoroughly.

9.10.6 Treat the floor area for rust by applying Dinitrol (item 30a) to the area to be covered by the Cab Floor mat (item 19).

NOTE

Ensure there is nothing that will be damaged by the drill passing through the seat base.

9.10.7 Drill out the rivets securing the Vehicle Data Plate to the seat base (refer to Fig 13). Fill the redundant holes in the seat base with pop rivets (31).

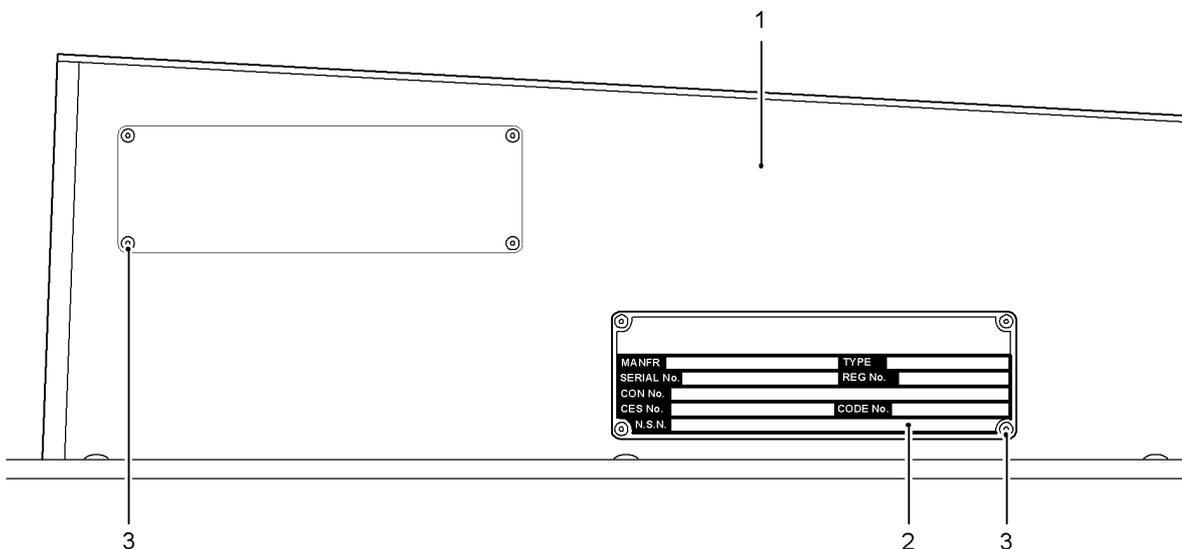
9.10.8 Position the Vehicle Data Plate to the bottom rear corner of the seat base.

NOTE

Ensure there is nothing that will be damaged by the drill passing through the seat base.

9.10.9 Using the data plate as a template, mark and drill four 3.2 mm ($\frac{1}{8}$ ") holes through the seat base.

9.10.10 Attach the data plate to the seat base using four pop rivets (item 31).



MIL2239

- | | | | |
|---|--------------------|---|-----------|
| 1 | Seat base | 3 | Pop rivet |
| 2 | Vehicle Data Plate | | |

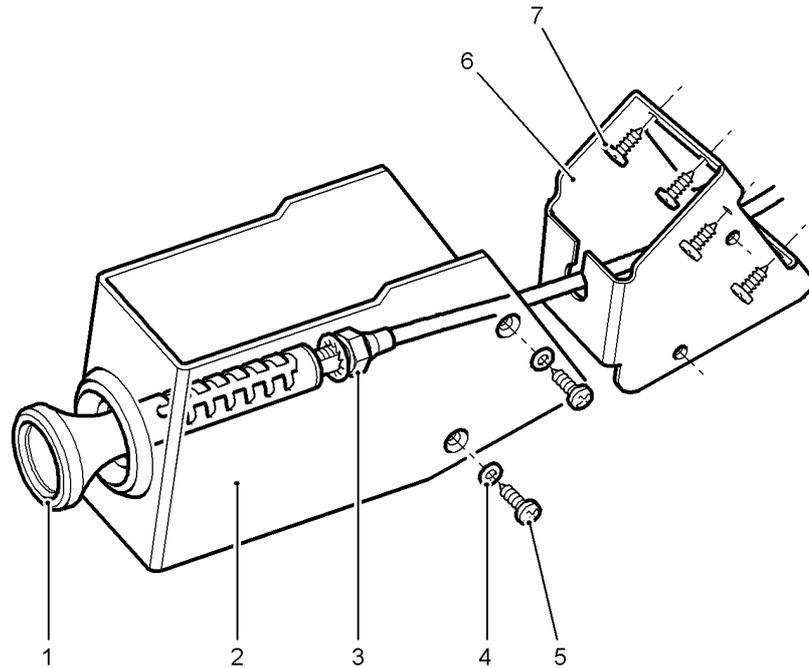
Fig 13 Relocating the Vehicle Data Plate

9.10.11 Remove the two screws and washers securing the hand throttle housing to the mounting bracket (refer to Fig 14).

9.10.12 Remove the housing from the hand throttle.

9.10.13 Release the locknut securing the hand throttle to the mounting bracket.

9.10.14 Remove the four screws securing the mounting bracket to the dash.



MIL2237

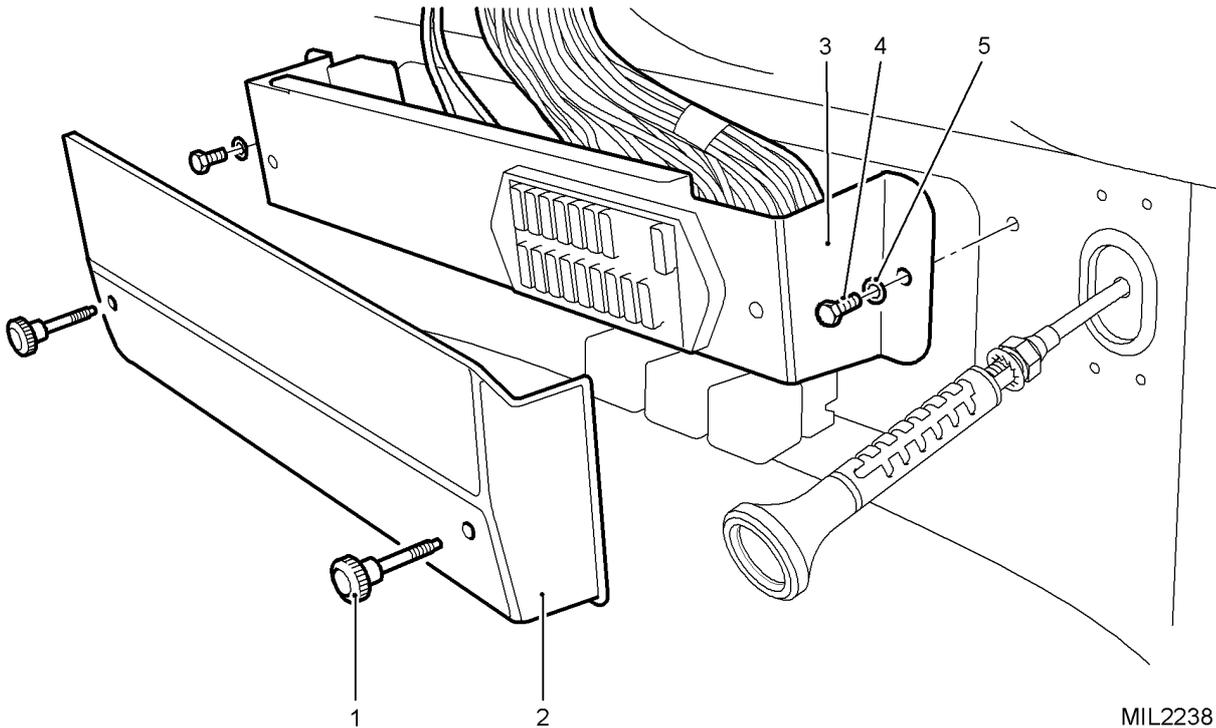
- | | | | |
|---|-----------------------|---|------------------|
| 1 | Hand throttle | 5 | Screw |
| 2 | Hand throttle housing | 6 | Mounting bracket |
| 3 | Locknut | 7 | Screw |
| 4 | Washer | | |

Fig 14 Removing the hand throttle

- 9.10.15 Remove the fixings from the fuse box cover (refer to Fig 15).
- 9.10.16 Remove the fuse box cover.
- 9.10.17 Remove the two screws and washers securing the fuse box to the bulkhead.

CAUTION

Take care not to damage the fuse box wiring.



- | | | | |
|---|----------------|---|--------|
| 1 | Fixings | 4 | Screw |
| 2 | Fuse box cover | 5 | Washer |
| 3 | Fuse box | | |

Fig 15 Removing the Fuse box

9.10.18 On the reverse of the Cab Bulkhead trim (item 17) are recessed locations for the hand throttle and air conditioning pipes. Cut out as required.

9.10.19 Feed the Cab Bulkhead trim behind the fuse box and wiring.

NOTE

No glue is required when fitting the matting.

9.10.20 Refit the fuse box to the bulkhead.

NOTE

Do not refit the fuse box cover at this stage.

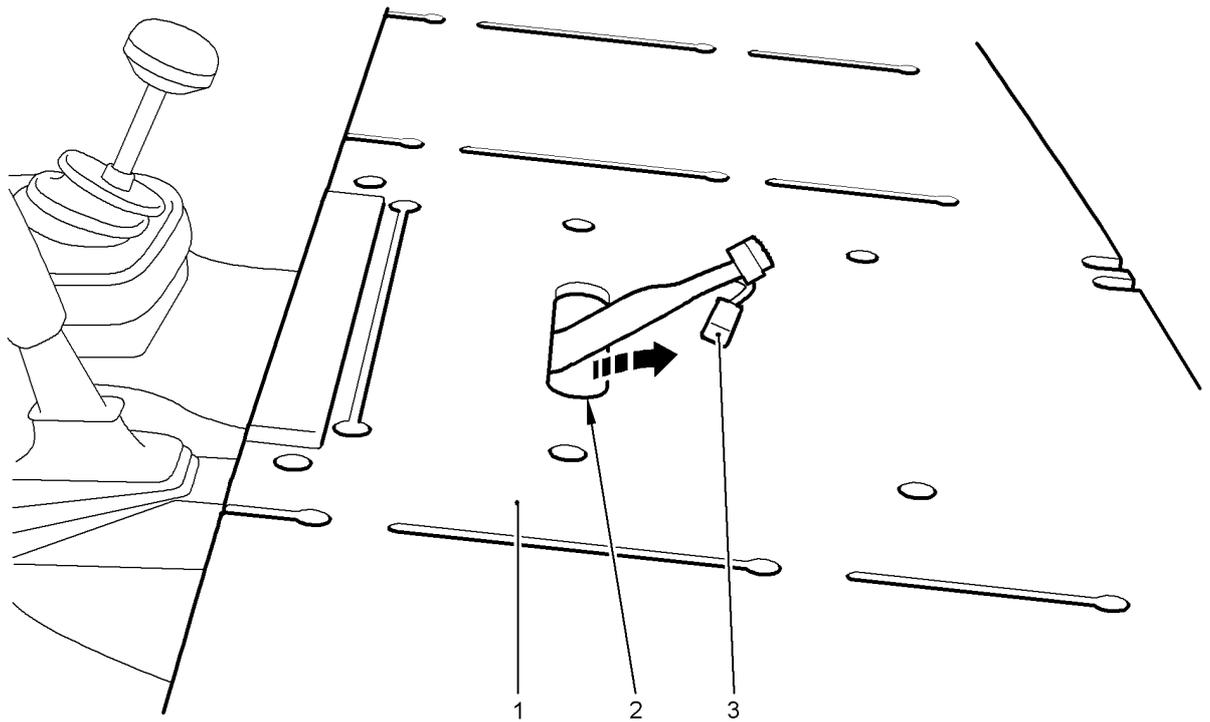
9.11 Fitting the Cab Seat Base trim

9.11.1 On the reverse of the Cab Seat Base trim (item 18) are recessed locations for left and right hand drive hand brake variants. Cut out as required.

9.11.2 Carefully lift the Cab Seat Base trim over the seat base (this will require two people). Thread the handbrake through the prepared slot.

9.11.3 Ease the trim into position.

9.11.4 Thread the EGR ECU harness through the slot in the trim (refer to Fig 16).



MIL2241

1 Cab Seat Base trim
2 Slot

3 EGR ECU harness

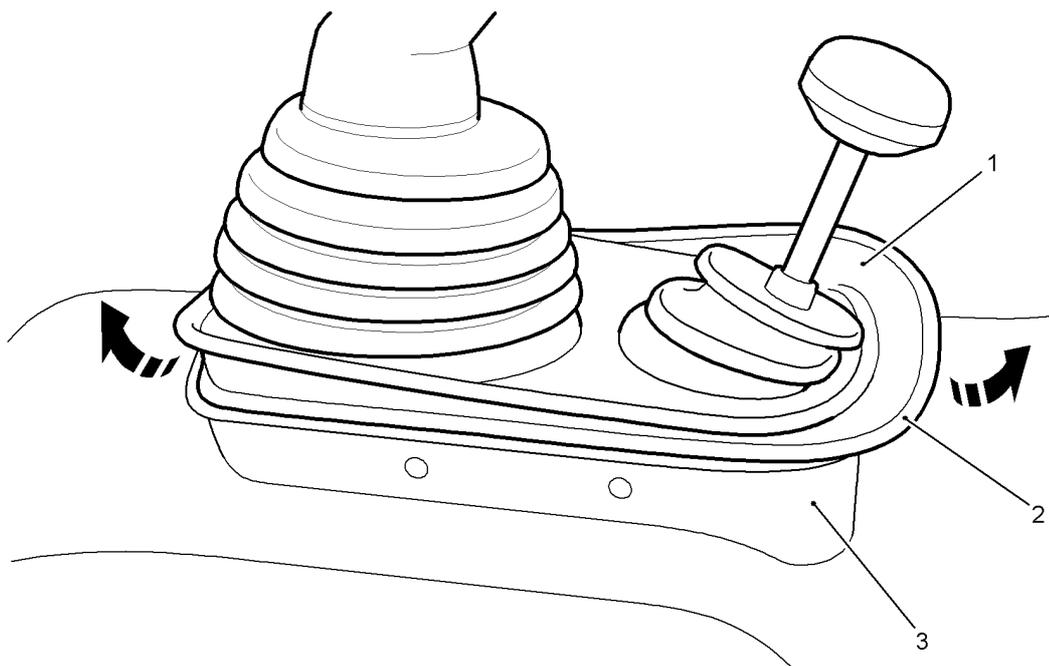
Fig 16 Fitting the Cab Seat Base trim

9.12 Fitting the Floor Cover Acoustic matting

9.12.1 Upturn the lip on the gear lever gaiter (refer to Fig 17).

9.12.2 Carefully lift the Cab Floor mat (item 19) (this will require two people) into place over the gear levers and under the handbrake. Aiming the leading edge under the pedals.

9.12.3 Unroll the gear lever gaiter over the lip on the tunnel.



MIL2242

- 1 Gear lever gaiter
- 2 Gaiter lip

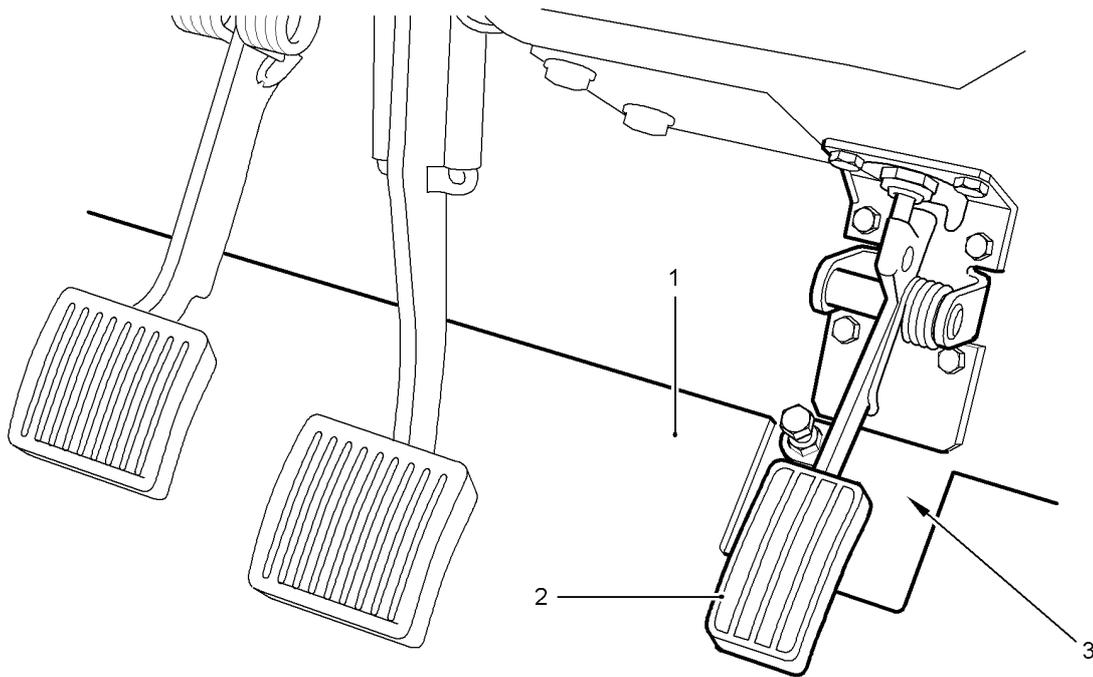
- 3 Tunnel

Fig 17 Fitting the Floor Cover matting

WARNING

LEFT HAND DRIVE VEHICLES: MAKE SURE THAT THE FLOOR COVER ACOUSTIC MATTING ALLOWS FULL TRAVEL ON THE ACCELERATOR PEDAL.

9.12.4 On left hand drive vehicles it may be necessary to cut out a square area of matting behind the accelerator pedal to allow full pedal travel (refer to Fig 18).



MIL2243

- | | | | |
|---|---------------------|---|---------|
| 1 | Floor Cover Matting | 3 | Cut out |
| 2 | Pedal | | |

Fig 18 Pedal travel

- 9.12.5 Refit the fuse box cover to the fuse box.
- 9.12.6 Reconnect the EGR ECU harness connectors to the ECU box.
- 9.12.7 Refit the ECU box between the front seats and secure with fixings.
- 9.12.8 Install the seat frames onto the seat base over the mat.
- 9.12.9 Install the seat fixing bolts, existing spacers and locking nuts (item 32). Torque the seat bolts to 25Nm.

NOTE

Do not over tighten the seat bolt fixing bolts.

- 9.12.10 Make sure the seat slide rails work and engage properly.

9.13 Fitting the 110 Rear Load Area Acoustic matting

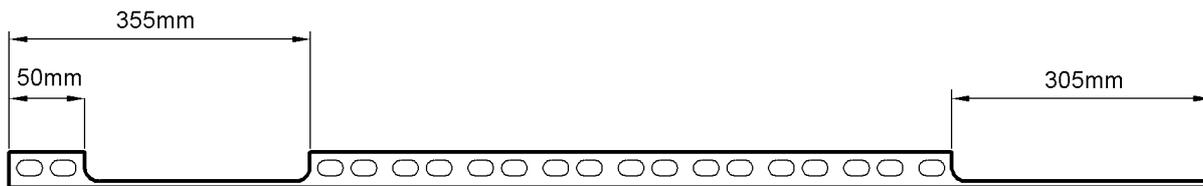
- 9.13.1 If necessary, remove any ancillary radio equipment / LRU's.
- 9.13.2 Drill out the rivets securing the floor runners to the load area and remove runners. Fill the redundant holes in the floor with pop rivets (34).
- 9.13.3 Clean the load area thoroughly.
- 9.13.4 Treat the floor area for rust by applying Dinitrol (item 30a) to the area to be covered by the Load Area Acoustic matting (item 20).
- 9.13.5 Fit Load Area Acoustic matting and rear tailgate securing strip. It will be necessary to trim the rear load area matting to fit around the Radio table / Battery box.
- 9.13.6 Any removed radio equipment / LRU's should be returned to the Unit in the vehicle for refitting by the User.

9.14 Dexion racking modification (FFR vehicles only)

- 9.14.1 Remove the Dexion racking from the B hoop.
- 9.14.2 Modify the cut outs in the upper and lower racking (refer to Fig 19).
- 9.14.3 Fit the Dexion racking to the B hoop (item 1).



TOP DEXION RACK UPPER FACE CUT OUT TO START OF RADIUS



BOTTOM DEXION RACK LOWER FACE CUT OUT TO START OF RADIUS

NOT TO SCALE

MIL2245

Fig 19 Dexion racking modification

9.15 Rear seat belt installation (not fitted to FFR Vehicles)

- 9.15.1 Fold the rear seats to improve access to the seat belts.
- 9.15.2 Remove all existing belts from the vehicle by unclipping from the snap connector (x8 from GS and x2 from FFR) and discard.

9.15.3 Remove the Torx head bolts securing the eye plate brackets when fitted, remove the eye plate brackets and use the Torx head bolts to either secure mounting brackets (item 23) or to blank the redundant holes (on FFR).

9.15.4 Using the existing mounting points fit mounting brackets (item 23) using 7/16 x 25 bolts (item 26) with shake proof washer (item 29).

9.15.5 Fit ARB reels (item 21) as shown in Fig 20. The reels are mounted back to back in middle of the seat and are fixed to a single mounting bracket with a 7/16 x 40 bolt (item 24) with spacer (item 27) and nut (item 28).

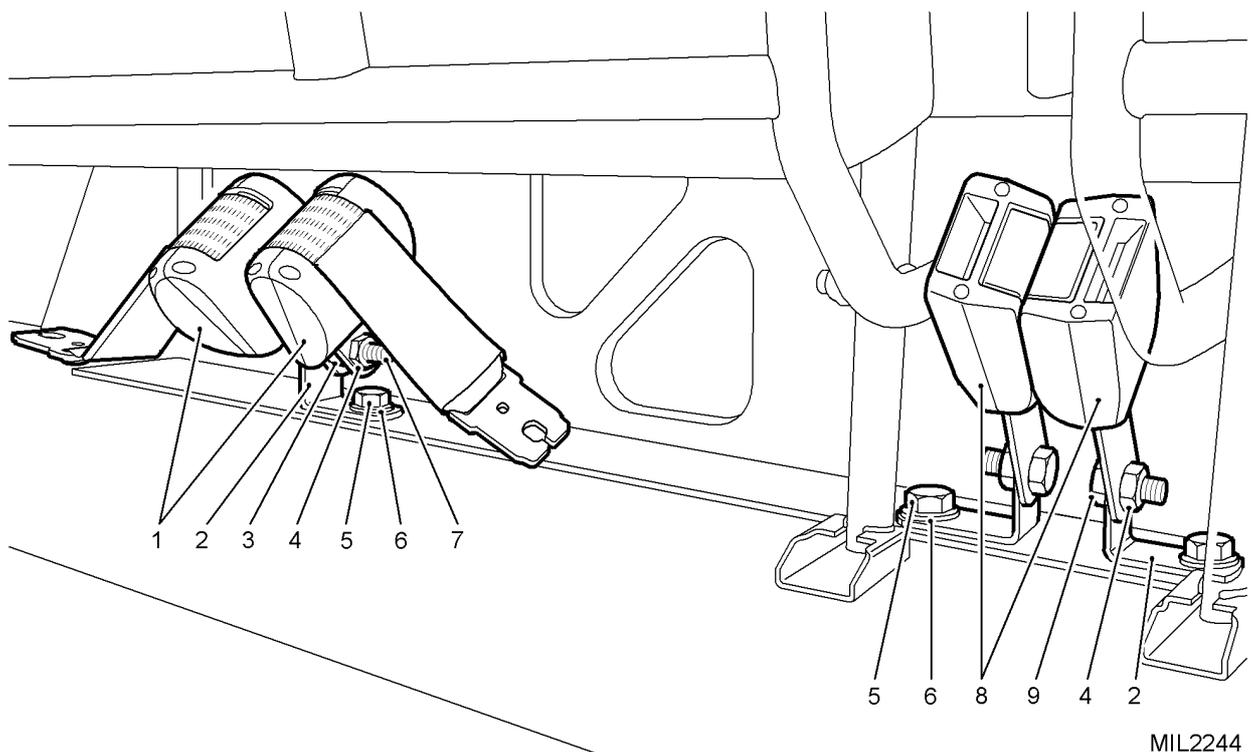
9.15.6 Fit the seat buckles (item 22) to their mounting brackets using a 7/16 x 20 bolt (item 25) and nut (item 28).

9.15.7 The rear seat belt bolts should be tightened to the torque settings specified below:

9.15.7.1 Seat belt bracket to vehicle bolt - 32Nm.

9.15.7.2 Reel to bracket bolt - 32Nm.

9.15.7.3 Buckle to bracket bolt - 32Nm.



- | | | | |
|---|--------------------|---|--------------------|
| 1 | Seat belt reel | 6 | Shake-proof washer |
| 2 | Mounting bracket | 7 | Bolt 7/16 UNF x 40 |
| 3 | Spacer | 8 | Seat belt buckle |
| 4 | Nut 7/16 UNF | 9 | Bolt 7/16 UNF x 20 |
| 5 | Bolt 7/16 UNF x 25 | | |

Fig 20 Rear seat belt installation

9.15.8 All existing fasteners affected during the installation should be now tightened to their respective torque settings.

9.15.9 Reconnect the vehicle batteries.

9.16 Vehicle Corrosion Protection

9.16.1 Where Equipment and Facilities exist, vehicles updated to this Installation Instruction should also be protected against corrosion in accordance with AESP 2300-A-310-201-B-VEHICLE CORROSION PREVENTION. If suitable equipment or facilities are not available the user should investigate alternative means of carrying out the required corrosion protection.

9.16.2 As detailed in AESP 2300-A-310-201-B-VEHICLE CORROSION PREVENTION personnel carrying out Cat 811 Mod Instruction 39, REMUS 1 Safety & Legislative Compliance, are to ensure that any corrosion found is removed, using the appropriate equipment and complying with relevant safety precautions as necessary, before repainting or treating of affected areas.

9.16.3 AESP 2300-A-310-201 also gives details on the application of Dinitrol to vehicles as a corrosion prevention measure. Dinitrol is to be applied to vehicles by a specialist Painter and Finisher (P&F) MOD civilian or contract tradesmen in an authorised specialist vehicle spray bay/booth.

NOTE

Before undertaking any activity that requires the use of spray equipment, it is essential that all WARNINGS and Cautions included in 2300-A-310-201 Para 12 are read and fully understood.

9.16.4 Ensure that prior to the application of Dinitrol (item 30a), the underside of the vehicle has been thoroughly power cleaned and dried.

9.16.5 To enable Dinitrol to be sprayed it must be warmed, by decanting a quantity into a container and placing the container in hot water. Dinitrol should not normally be thinned. However, in cold climates or conditions where it is impossible to spray without dilution, it is permissible to thin the Dinitrol with up to a maximum of 20% white spirit.

9.16.6 Details of the spraying equipment required for application of the Dinitrol are included in AESP 2300-A-310-201 at Para 14. The area's of the TUM(HS) vehicle to be subjected to the Corrosion Preventative Treatment comprises the chassis and forward bulkhead, (including all hollow box sections).

9.16.7 The spray pattern/coverage from the spray gun/nozzles being used should be checked by spraying into a cardboard box prior to treating a vehicle.

9.16.8 Any loose equipment should be removed and stowed away from the vehicle. Examine the body structure of the vehicle and note the position of any enclosed box sections and whether there are sufficient access holes. Any box sections that do not have sufficient access holes are to have 10 mm diameter holes drilled in accordance with AESP 2300-A-310-210 Para 15.

9.16.9 Note the position of any unprotected aluminium panels on the underside. If necessary, mask up electrical wiring, brake components, plastic pipes/hoses, exhaust pipes and mechanical linkages adjacent to open panels that are to be sprayed of the vehicle and in hidden non-cosmetic areas, particularly where they are in contact with steel supporting frames/structures. Remove any loose material or dust with a vacuum cleaner.

9.16.10 Remove any plugs/grommets and spray Dinitrol (item 30b) into all steel enclosed box sections using a spray gun with rigid or flexible extension lance as necessary. The interior surfaces of any hidden/non-cosmetic steel sheet or aluminium sheet body panels and any unprotected aluminium or steel panels on the underside of the vehicle, are to be sprayed using a HVLP spray gun. Particular attention should be paid to all welded and folded joints and strengtheners supporting frames in contact with the outer skin.

9.16.11 After spraying, ensure that any manufacturer's drainage holes are clear. Refit plugs/grommets.

9.16.12 Remove all shields or other forms of masking previously applied and check brake components such as brake discs for any possible overspray; rectify as required. Replace any loose equipment previously removed.

TESTING AFTER EMBODIMENT

10 Nil.

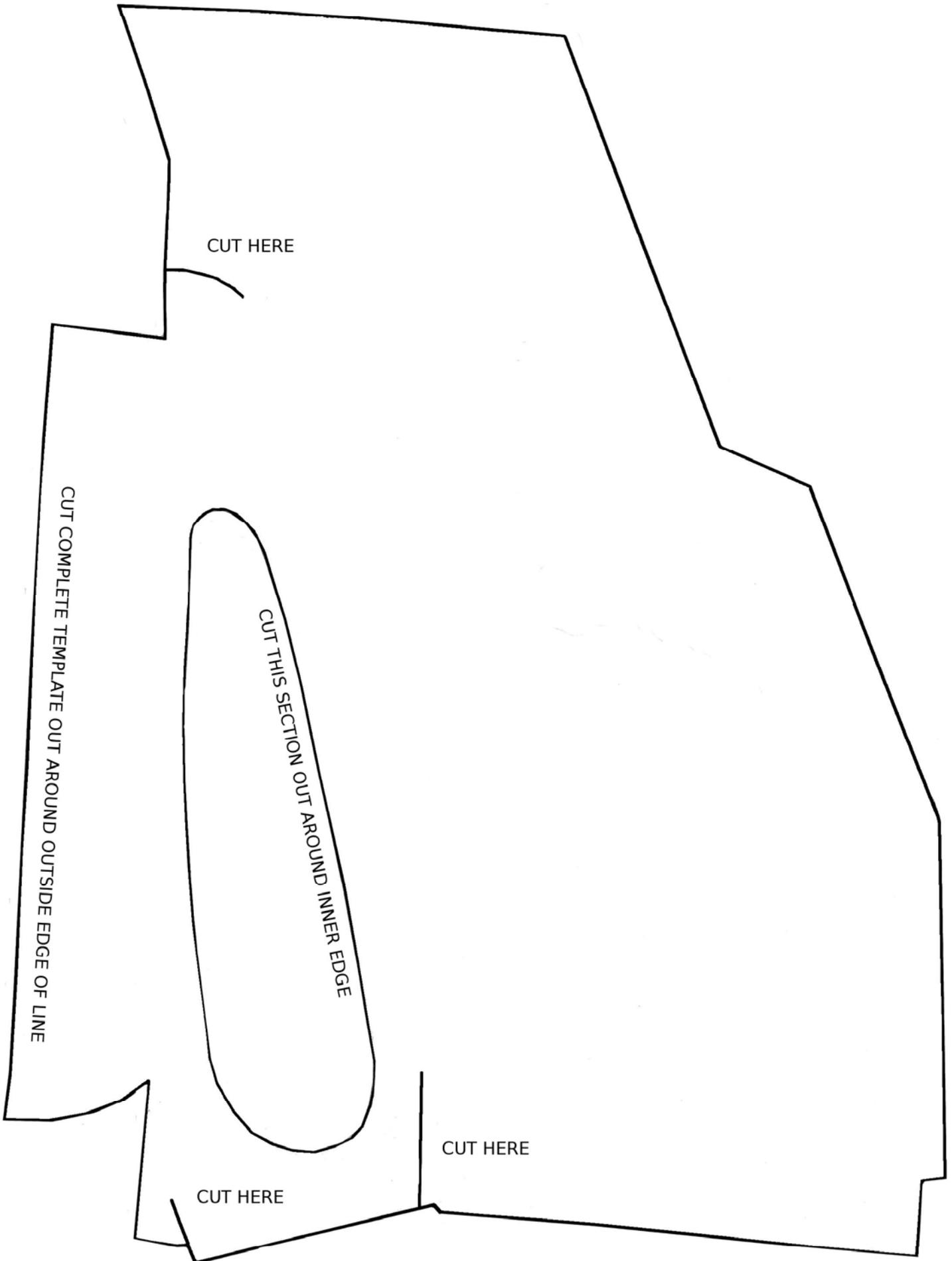
EFFECT ON WEIGHT

11 35 Kg.

PUBLICATION AMENDMENTS

12 Nil.

APPENDIX 1 – CUTTING TEMPLATE



**TRUCK UTILITY LIGHT (TUL) HS
AND TRUCK UTILITY MEDIUM (TUM) HS**

MODIFICATION INSTRUCTION NO. 40
(Completely Revised)

Sponsor: SLV PT
Project No.:
File Ref:

Publication Authority: SLV PT, Abbey Wood

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Fitting of additional lashing eyes

(Approval No LSTP 12-6993)

INTRODUCTION

1 This instruction details the fitting of additional lashing eyes to the front bumper and to the rear chassis rail. This modification is only applicable to those units who would be considering transporting the equipment as internal load by Air.

1.1 Limitations on use of equipment. Nil

APPLICABILITY

2 TUM(HS) Vehicles only, with following Asset codes: RB5006 3100; RB5007 3100; NB5008 3100; NB5008 3160; NB5009 3100; NB5009 3160; NB5009 3170; NB5010 3100; NB5010 3101; NB5010 3160; NB5010 3161; NB5010 3170; NB5010 3171; NB5010 3199; NB5010 8100; NB5010 8160; NB5010 8170; NB5017 3100; NB5017 3160; NB5017 3190; NB5017 8100; NB5020 3100; NB5020 3101; NB5020 3102; NB5020 3103; NB5020 3104; NB5020 3105; NB5020 3106; NB5020 3107; NB5020 3160; NB5020 3161; NB5020 3170; NB5020 3180; NB5020 3190; NB5020 8100; NB5020 8101; NB5020 8102; NB5020 8103; NB5020 8104; NB5020 8160; NB5020 8170; NB5020 8180; NB5020 8190; NB5021 3100; NB5021 3160; NB5021 3170; NB5021 3180; NB5021 3190; NB5031 3100; NB5031 3160; NB5031 3170; NB5031 3180; NB5031 8100; NB5031 8160; NB5035 3100; RB5042 3100.

REASON FOR MODIFICATION

3 Code 2 - to improve operational performance.

PRIORITY

4 Army: Routine
RAF: Class 3

ESTIMATED TIME REQUIRED

5 Embodiment: 6 man hrs.

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

6.1.1 ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.

6.1.2 RAF - Units not later than the next routine maintenance and Vehicle Depots before next issue of vehicle.

6.2 Associated modification instructions. Nil

6.3 Modification plate strike action. N/A

Action required by

7

7.1 Units and establishment holding equipment.

7.1.1 Examine vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary units with level 2 REME support demand the stores required.

7.1.3 ARMY – on receipt of stores, request REME to modify equipment.

7.1.4 ARMY – Record the modification, subject and the AESP number in equipment documents.

7.1.5 RAF – Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADPMTMS job certification sheet and to follow the procedures laid down in AP 100C - 08A.

7.2 Army units authorised to carry out levels 2, 3 and 4 maintenance and RAF units.

7.2.1 ARMY – When requested by users or during overhaul of equipment on charge without REME level 2 support, obtain the items listed in Para. 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.2.3 Complete AF G1084A when reporting completion of modification to FORWARD (RAF) using the following code.

RAF MODIFICATION CODE: AFN194

NOTE

RAF units operating STAMA are also to complete ADP MTS job certification sheet and to follow the procedures laid down in 100C - 08A.

7.3 All receipts of this instruction. Add particulars to AESP ref. 2320-D128-811 Mod instr. index.

Stores tools and equipment

NOTE

Items not codified, if required, should be demanded using the manufacturer's part numbers through the normal system.

8

8.1 Stores to be demanded.

8.1.1 The following set is to be demanded quoting this instruction authority.

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
1	7XD	5340-99-968-6381	Lashing Eye (Bumper front)	2
2	G1	5310-99-122-6476	Washer, plain	4
3	G1	5310-99-470-6553	Washer plain	4
4	G1	5310-99-122-5497	Nut, Nyloc	4
5	G1	5306-99-122-2772	Bolt M10 x 35	4
6	7RU	4030-99-780-8675	JATE Shackles	2
	7XD	2510-99-990-0538	Kit, Chassis Upgrade (Comprising)	1
7		NP	Plate, Shackle	(4)
8		NP	Tube, Shackle	(2)

Sequence of operations

NOTE

The item numbers in Para 8 are used as references throughout this instruction.

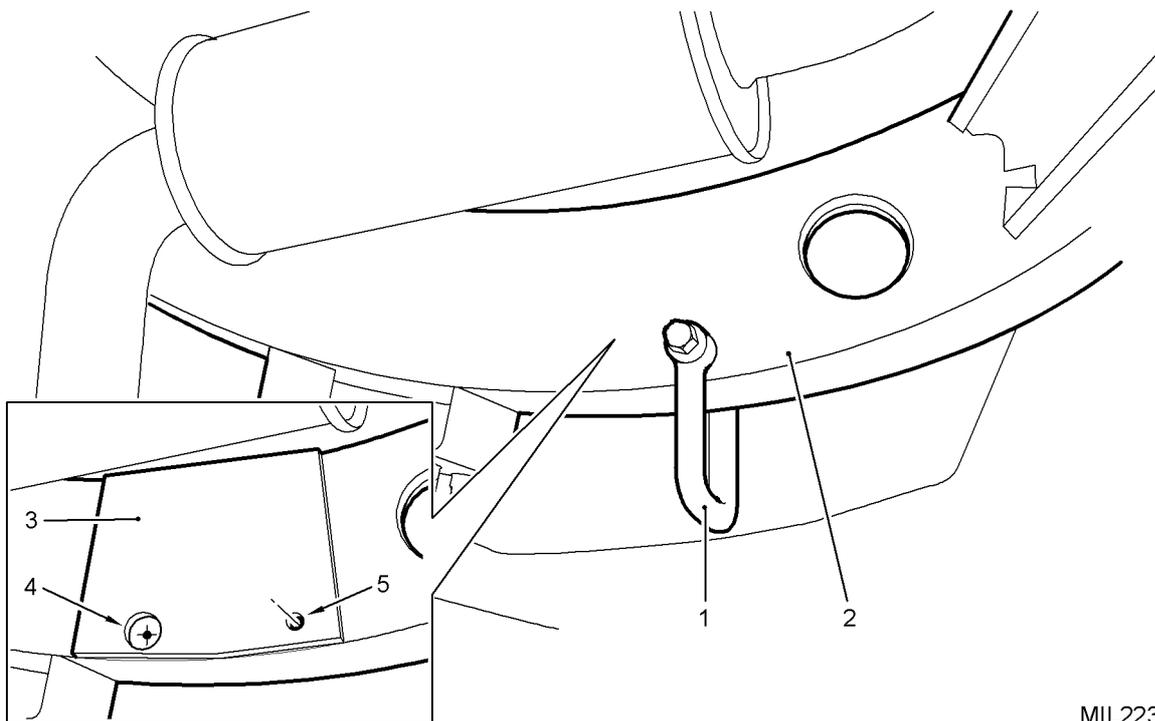
9

9.1 Removing the existing rear shackles (Refer to Fig 1)

9.1.1 Position the vehicle on level ground, apply the handbrake and remove the ignition keys.

9.1.2 Disconnect the vehicle batteries.

9.1.3 Remove the bolts securing the existing shackles to the chassis rails.



MIL2231

- | | | | |
|---|---------------------|---|-----------------------------|
| 1 | Shackle | 4 | Hole for additional shackle |
| 2 | Chassis rail | 5 | Hole for existing shackle |
| 3 | Reinforcement plate | | |

Fig 1 Rear Shackle and Reinforcement Plate

9.2 Drilling the rear chassis rails (Refer to Fig 1)

9.2.1 Align the smaller hole in the reinforcement plate (7) with the existing shackle hole in the chassis rail.

9.2.2 Mark the position of the large hole in the reinforcement plate (7) on the chassis rail.

9.2.3 Drill 20 mm dia holes in the chassis rail.

9.2.4 Repeat steps 9.2.1 to 9.2.3 for the other chassis rail.

NOTE

Ensure holes, welds and reinforcement plates are suitably cleaned, primed and painted to protect against corrosion.

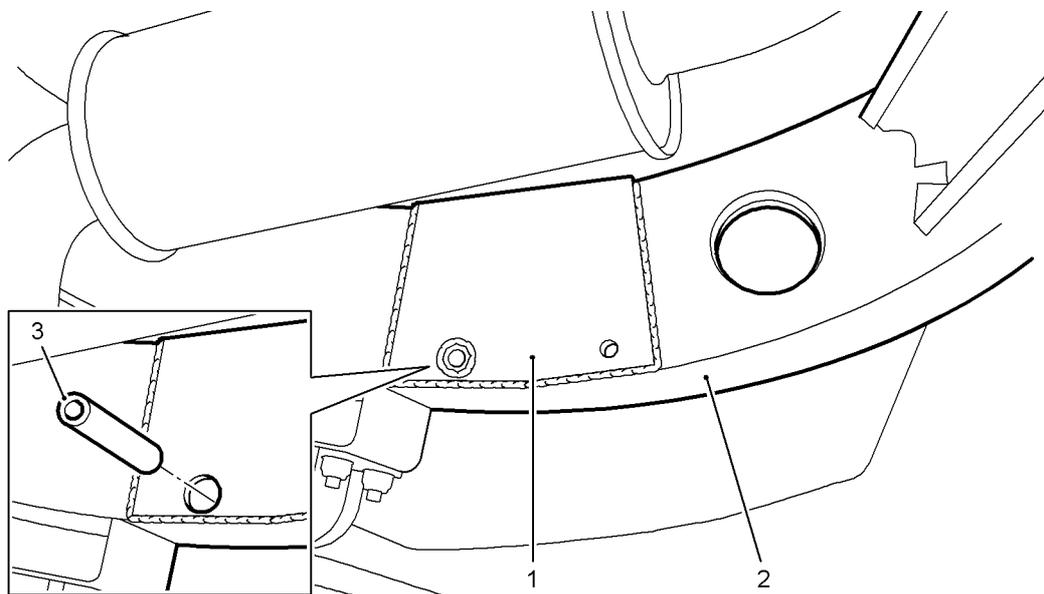
9.3 Welding the reinforcement plates and tubes (Refer to Fig 2)

9.3.1 Clamp the reinforcement plates (7) in position on either side of the chassis rail.

WARNING:

THE CHASSIS HARNESS IS LOCATED IN THE RIGHT HAND CHASSIS SIDE RAIL. TO AVOID DAMAGE TO THE HARNESS ALWAYS MAKE SURE IT IS MOVED SAFELY AWAY FROM THE AREA OF DRILLING, WELDING / HOT METAL

9.3.2 Weld the plates in position.



MIL2232

1 Reinforcement plate
2 Chassis rail

3 Tube

Fig 2 Welding Reinforcement Plates and Tubes

9.3.3 Insert the tube (8) through the reinforcement plates (7) into the chassis rail.

9.3.4 Weld the tube (8) in position.

9.3.5 Repeat steps 9.3.1 to 9.3.4 for the other reinforcement plate.

NOTE

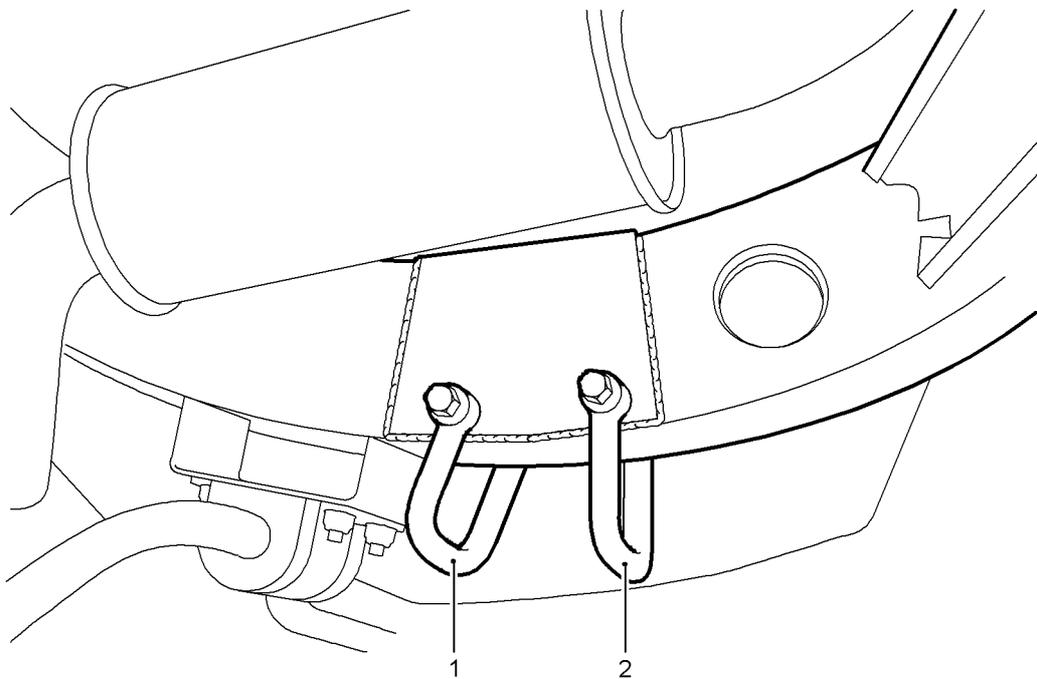
Ensure any holes drilled are suitably primed and painted to protect against corrosion. When paint is dry, the area of chassis affected should be treated internally and externally with relevant Dinitrol Wax, rust proofing compound.

9.4 Installing the shackles (Refer to Fig 3)

9.4.1 Insert the shackle bolt through the shackle, reinforcement plates, tube and chassis.

9.4.2 Tighten the shackle bolt until the shackle can just be moved by hand.

9.4.3 Repeat for the other 3 shackles.



MIL2233

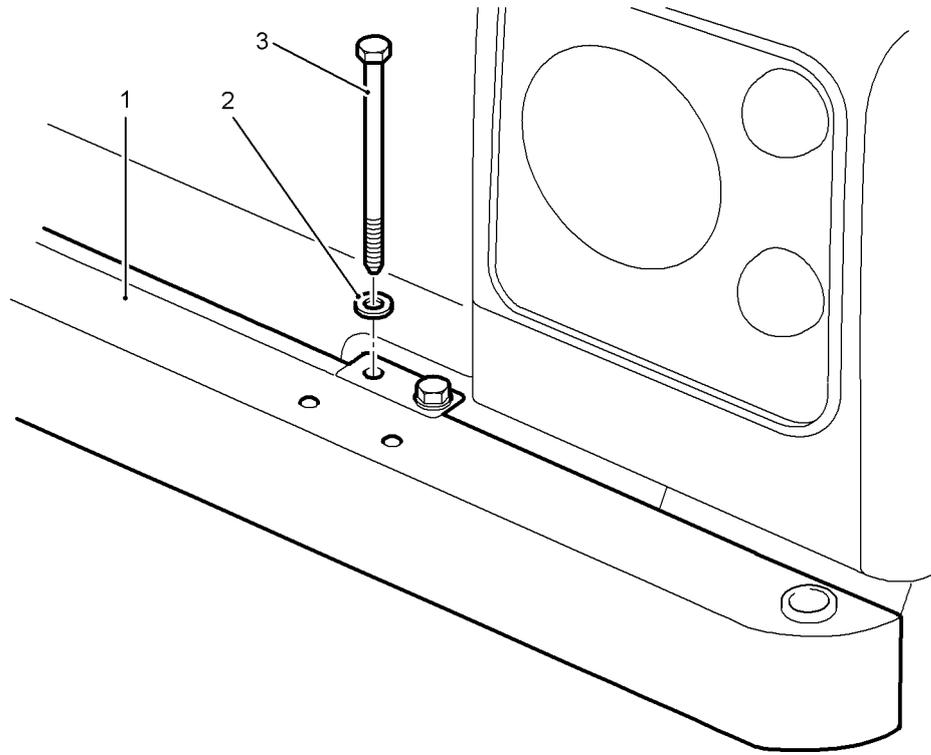
1 New shackle

2 Existing shackle

Fig 3 Rear Shackle Assembly

9.5 Installing the front lashing eyes (Ref to Figures 4 and 5).

9.5.1 Remove the 2 long bolts and washers securing the bumper to the chassis.



MIL2229

1 Front bumper
2 Washer

3 Bolt

Fig 4 Front Bumper Bolt Removal

9.5.2 Install the front lashing eye (1) using the existing holes in the front bumper.

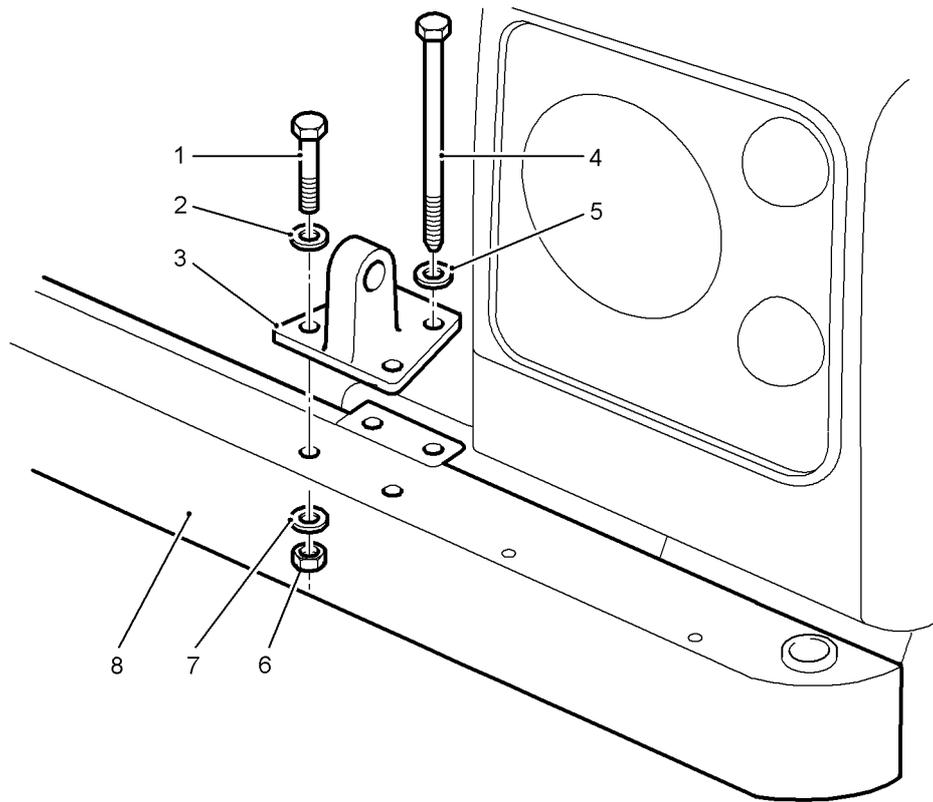
9.5.3 Refit the 2 long bolts and washers to secure the lashing eye and front bumper to the chassis.

9.5.4 Install 2 bolts (5), washer (3), washer (2) and nyloc nuts (4) to secure the lashing eye to the front bumper.

9.5.5 Repeat steps 9.5.1 to 9.5.4 for the other front lashing eye.

9.5.6 Torque the bolts to 45Nm.

9.5.7 Reconnect the vehicle batteries.



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- | | | | |
|---|-------------------|---|-----------|
| 1 | Bolt | 5 | Washer |
| 2 | Washer | 6 | Nyloc nut |
| 3 | Front lashing eye | 7 | Washer |
| 4 | Long bolt | 8 | Bumper |

Fig 5 Installing the Front Lashing Eyes

TESTING AFTER EMBODIMENT

10 Nil.

EFFECT ON WEIGHT

11 4 Kg.

PUBLICATION AMENDMENTS

12 Nil.

**TRUCK UTILITY LIGHT (TUL) HS
AND TRUCK UTILITY MEDIUM (TUM) HS**

**MODIFICATION INSTRUCTION NO. 41
(Completely Revised)**

Sponsor: OSVP
Project No.:
File Ref:

Publication Authority: OSVP

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Fitting of Battery Negative Isolator Switch

(Approval No. LSTP12-6694)

INTRODUCTION

1 This instruction details the fitting of a Battery Negative Isolator Switch.

1.1 Limitations on use of equipment. Nil.

APPLICABILITY

2 All TUM(HS), TUL(HS) FFR and Winter Water and BFA Vehicles with following applicable Asset Codes:

NB 1047 3100; NB 1047 3101; NB 1047 3102; NB 1047 3160; NB 1047 3161; NB 1047 3199;
NB 1047 8100; NB 1047 8160; NB 1048 3100; NB 1048 3160; NB 1049 3100; NB 1049 3101;
NB 1049 3102; NB 1049 3103; NB 1049 3104; NB 1049 3160; NB 1049 3161; NB 1049 3162;
RB 4224 3100; NB 4225 3100; NB 4225 8100; NB 4226 3100; NB 4228 3100; NB 4229 3100;
NB 4232 3100; RB 5006 3100; NB 5007 3100; NB 5008 3100; NB 5008 3160; NB 5009 3100;
NB 5009 3160; NB 5009 3170; NB 5010 3100; NB 5010 3101; NB 5010 3160; NB 5010 3161;
NB 5010 3170; NB 5010 3171; NB 5010 3199; NB 5010 8100; NB 5010 8160; NB 5010 8170;
NB 5017 3100; NB 5017 3160; NB 5017 3190; NB 5017 8100; NB 5020 3100; NB 5020 3101;
NB 5020 3102; NB 5020 3103; NB 5050 3104; NB 5020 3105; NB 5020 3106; NB 5020 3160;
NB 5020 3161; NB 5020 3170; NB 5020 3180; NB 5020 3190; NB 5020 8100; NB 5020 8101;
NB 5020 8102; NB 5020 8103; NB 5020 8104; NB 5020 8160; NB 5020 8170; NB 5020 8180;
NB 5020 8190; NB 5021 3100; NB 5021 3160; NB 5021 3170; NB 5021 3180; NB 5021 3190;
NB 5022 3100; NB 5031 3100; NB 5031 3160; NB 5031 3170; NB 5031 3180; NB 5031 8100;
NB 5031 8160; NB 5035 3100; NB 5040 3100; NB 5041 3100; NB 5041 3101; RB 5042 3100.

NOTE

Check that Modification Instruction 17 Battery Retention Strap and Absorptive Glass Matt (AGM) batteries have been fitted to the vehicle.

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REASON FOR MODIFICATION

3 Code 1 - Improved Safety (Vehicles Not VOR).

PRIORITY

4 Army: Routine.
RAF: Class 3.

ESTIMATED TIME REQUIRED

5 Embodiment: 2.5 man hrs.

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

6.1.1 ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.

6.1.2 RAF - Units not later than the next routine maintenance and Vehicle Depots before next issue of vehicle.

6.2 Associated modification instructions. Nil.

6.3 Modification plate strike action. N/A.

Action required by

7

7.1 Units and establishment holding equipment.

7.1.1 Examine JAMES/Vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary units with level 2 REME support demand the stores required.

7.1.3 Upon the embodiment of equipment, units are to record the modification subject and AESP Number in JAMES/Equipment documents.

7.1.4 RAF – Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADPMTMS job certification sheet and to follow the procedures laid down in AP 100C - 08A.

7.2 Army units authorised to carry out levels 2, 3 and 4 maintenance and RAF units.

7.2.1 ARMY – When requested by users or during overhaul of equipment on charge without REME level 2 support, obtain the items listed in Para. 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.2.3 Complete AF G1084A when reporting completion of modification to FORWARD (RAF) using the following code.

RAF MODIFICATION CODE: AFN195

NOTE

RAF units operating STAMA are also to complete ADP MTS job certification sheet and to follow the procedures laid down in 100C - 08A.

7.3 All receipts of this instruction. Add particulars to AESP ref. 2320-D128-811 Mod instr. index.

Stores tools and equipment

8

8.1 Stores to be demanded.

8.1.1 The following set is to be demanded quoting this instruction authority.

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
	7XD	5999-99-905-0844	Battery Isolator Switch Kit Comprising:	1
1	7XD	LR019311	Isolator switch	(1)
2	7XD	XH12-14301-BA	Cable, battery - negative	(1)
3	7XD	AH12-24B659-AAA	Cable, switch to transfer box earth	(1)
4	7XD	5305-99-260-8976	Screw, M5	(4)
5	7XD	5310-99-977-1102	Washer, spring	(4)
6	7XD	5310-99-122-5294	Nut, plain - M5 (Not used)	(4)
7		NSS	Spacer tubes	(4)
8		NSS	Nut, nylon - M5	(4)
		2590-99-929-8071	Auxiliary Earth Terminal Kit Comprising:	1
9		NSS	Auxiliary earth lead, terminal to isolation switch	(1)
10		NSS	Bolt, M8 x 25	(1)
11		NSS	Star washer, M8	(1)
12		NSS	Nut, plain - M8 stainless steel	(2)
13		NSS	Warning Label	(1)

8.2 Special tools and test equipment required

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
14	F1A	3460-99-137-4928	Arbour, hex shank 11mm AF - 6.5mm pilot drill	(1)
15	HTC12	3455-99-137-4940	Blade - hole saw 54mm	(1)

Sequence of operations

NOTE

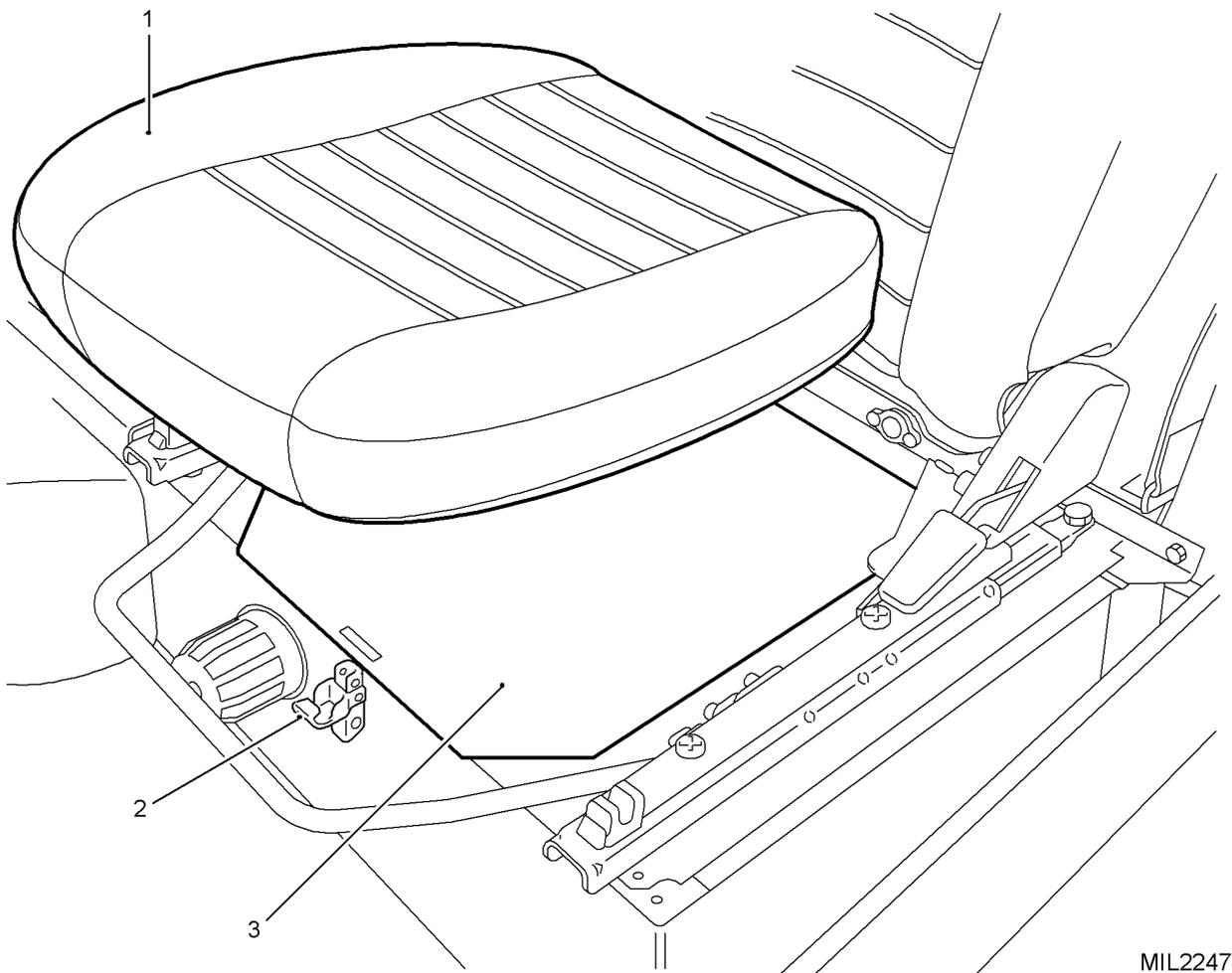
The item numbers in Para 8 are used as references throughout this instruction.

9 Carry out the modification as follows:

9.1 Disconnecting the battery cables and earth cables.

9.1.1 Lift off the left hand seat cushion. (Refer to Fig 1).

9.1.2 Release the over centre catch and remove the battery box cover.

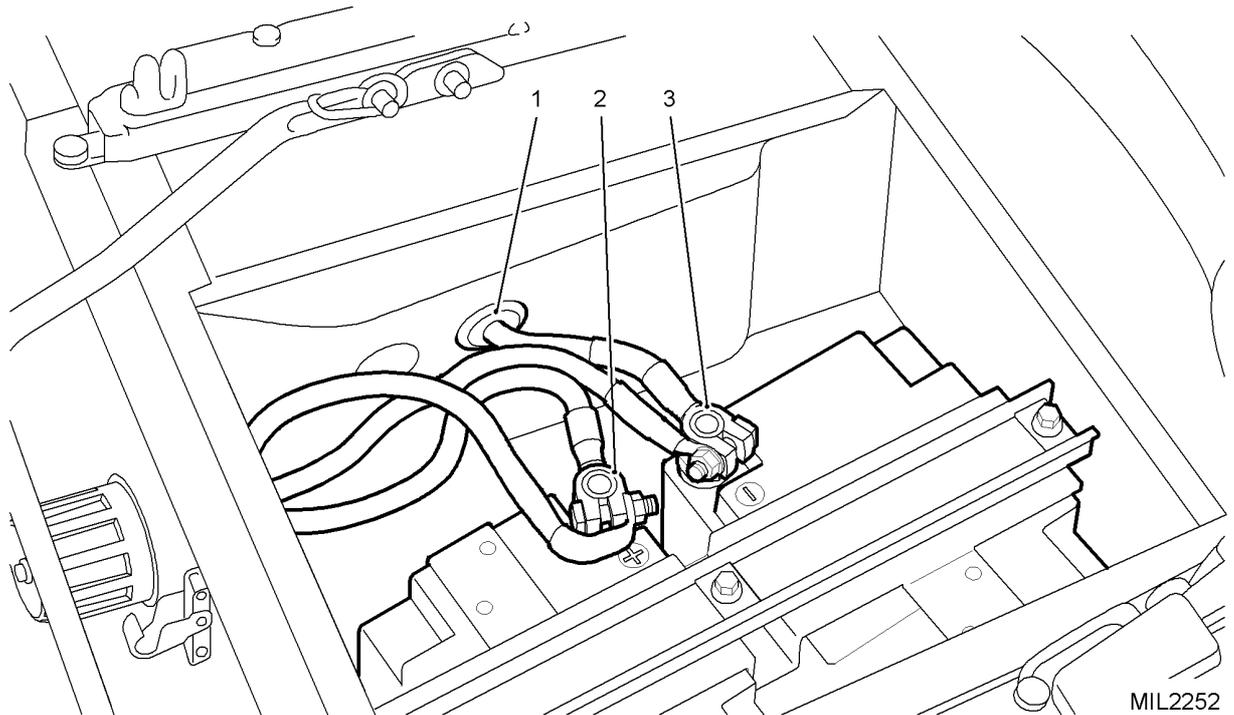


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1 Seat cushion
2 Over centre catch

3 Battery box cover

Fig 1 Seat Cushion and Battery Box Cover

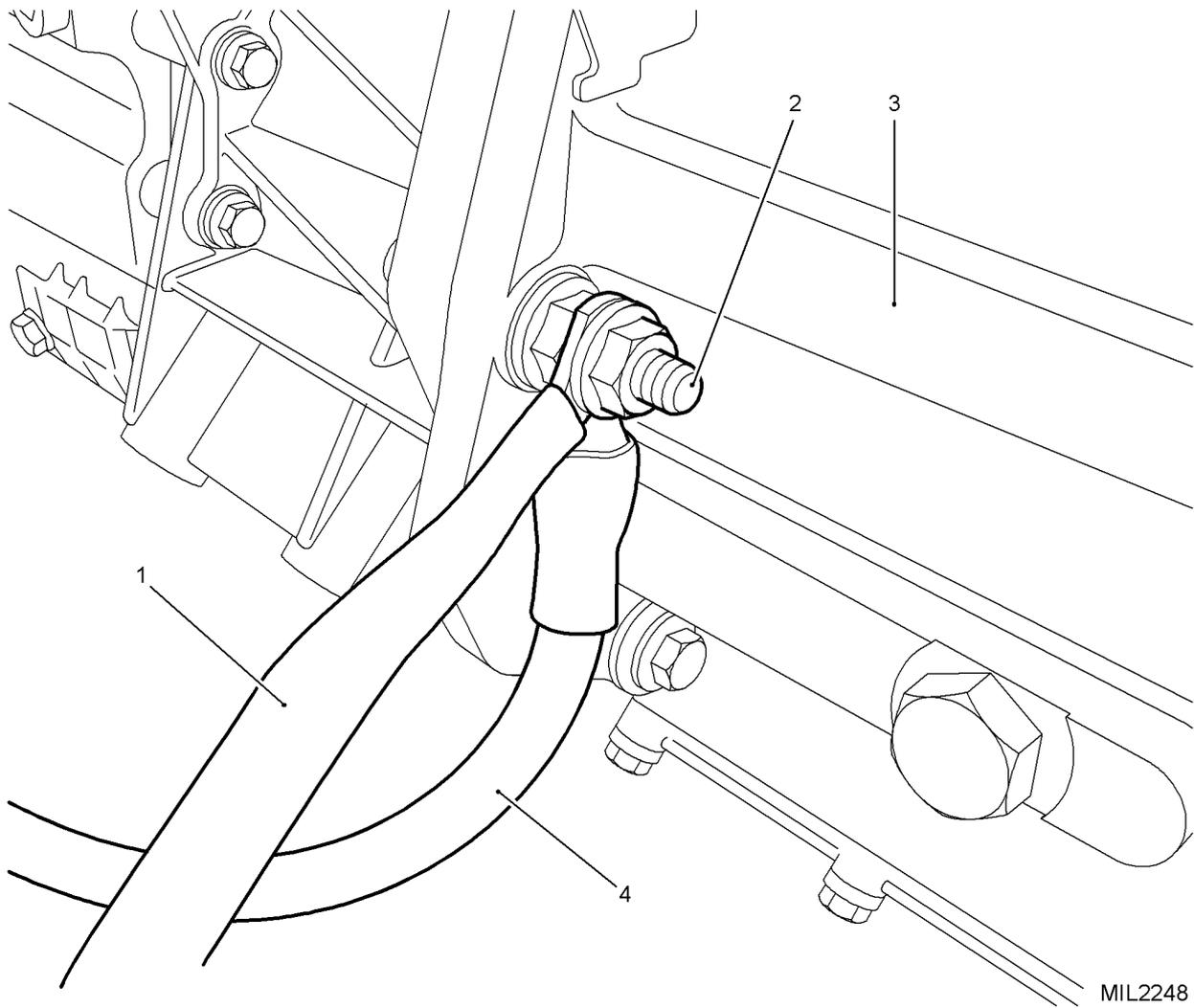


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- | | | | |
|---|-----------------------|---|-----------------------|
| 1 | Grommet | 3 | Battery negative lead |
| 2 | Battery positive lead | | |

Fig 2 Battery Disconnection

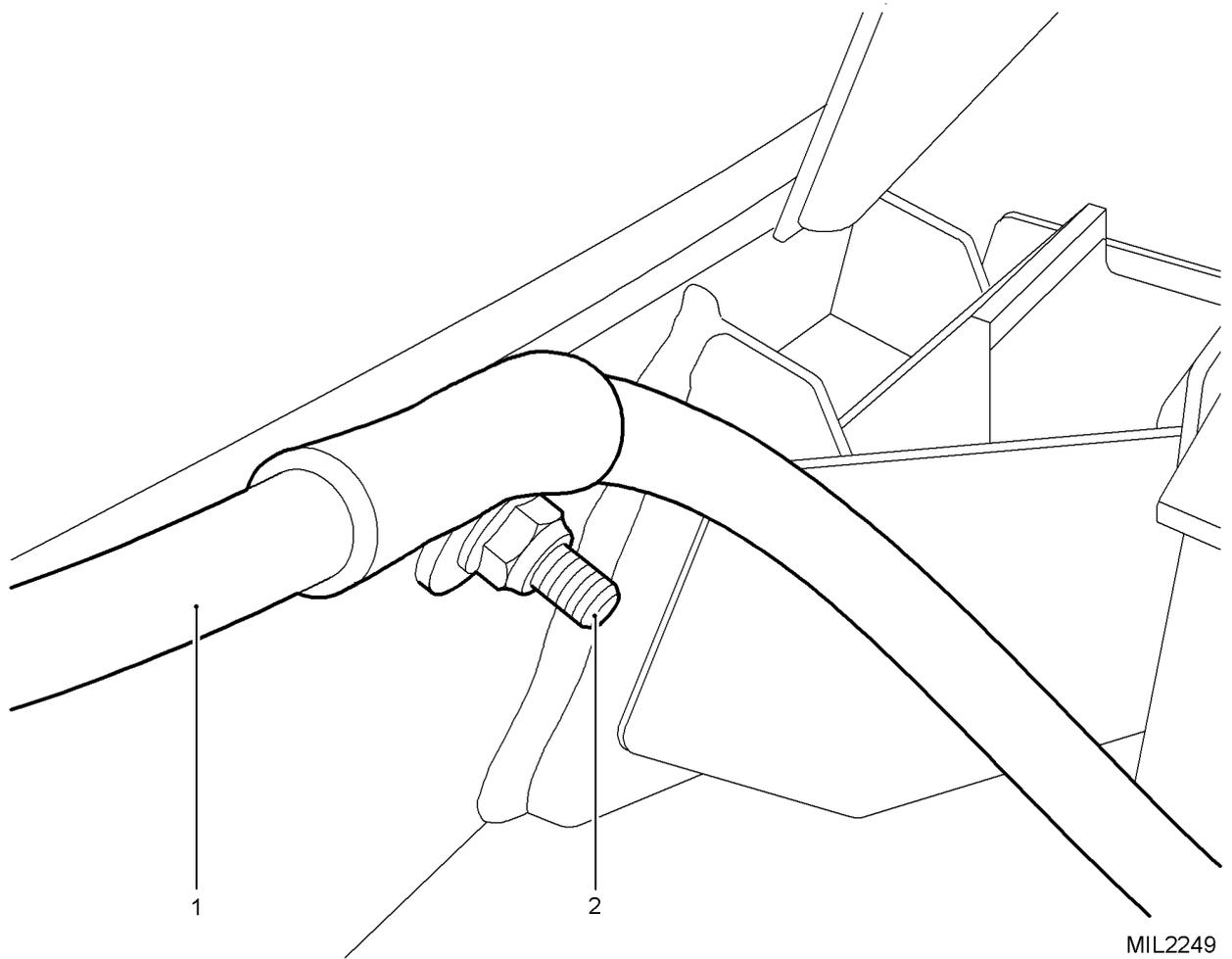
- 9.1.3 Disconnect battery cable negative from battery negative terminal.
- 9.1.4 Disconnect battery cable positive from battery positive terminal.
- 9.1.5 Undo the battery clamp bolts and remove the battery clamp.
- 9.1.6 Remove the vehicle batteries from the battery box.
- 9.1.7 Release grommet on battery negative cable from hole in battery box.



- | | | | |
|---|--------------------------|---|------------------------|
| 1 | AH12-13N850-AAA | 3 | Transfer box |
| 2 | Transfer box earth point | 4 | Battery cable to earth |

Fig 3 Disconnecting Transfer Box Earth Cable

- 9.1.8 Disconnect existing battery to earth cable from transfer box. (Refer to Fig 3).
- 9.1.9 Disconnect existing battery cable to earth from chassis earth point. (Refer to Fig 4).



- 1 Battery negative/transfer box earth cable 2 Chassis earth point

Fig 4 Disconnecting Battery Negative Earth Cable

9.2 Installing the Auxiliary Earth Terminal

9.2.1 Mark the position of the hole for the earth terminal on the inside right hand face of the seat base. (Refer to Fig 5).

WARNINGS

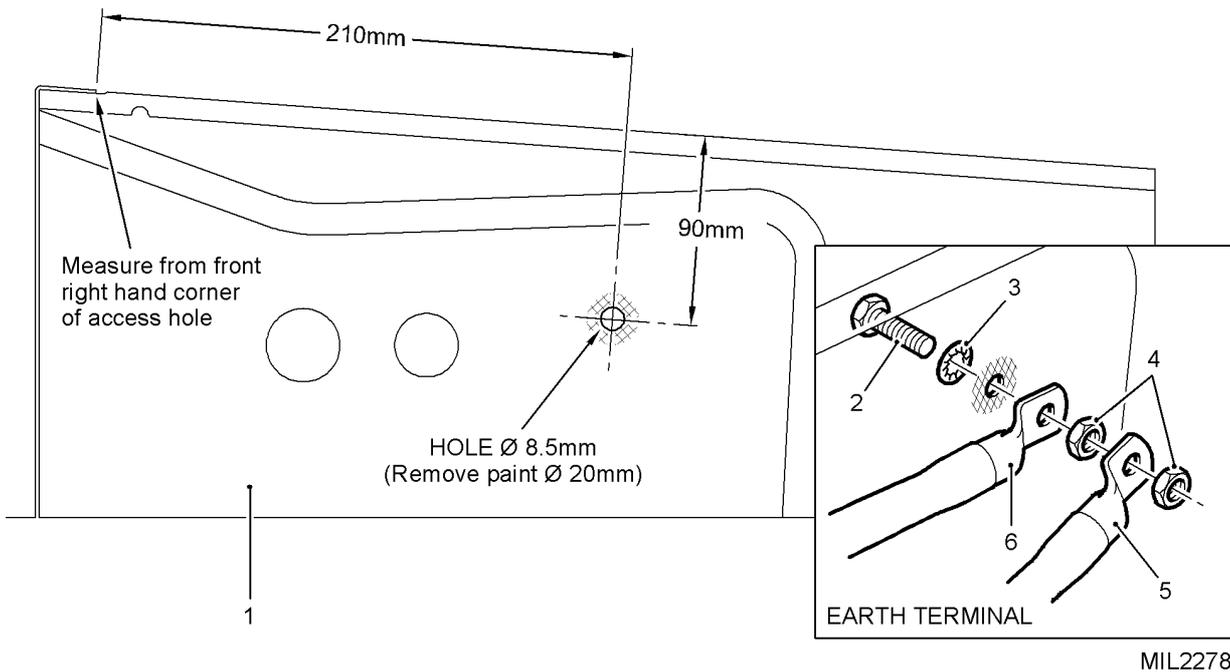
(1) HEALTH AND SAFETY. ENSURE APPROPRIATE CLOTHING AND GOGGLES ARE WORN WHEN DRILLING.

(2) ENSURE THERE IS NOTHING THAT WILL BE DAMAGED BY THE DRILL PASSING THROUGH THE SEAT BASE.

9.2.2 Drill a 8.5mm dia hole and deburr.

9.2.3 Remove the paint for a dia of 20mm around the hole on the inside of the seat base to ensure good earth contact.

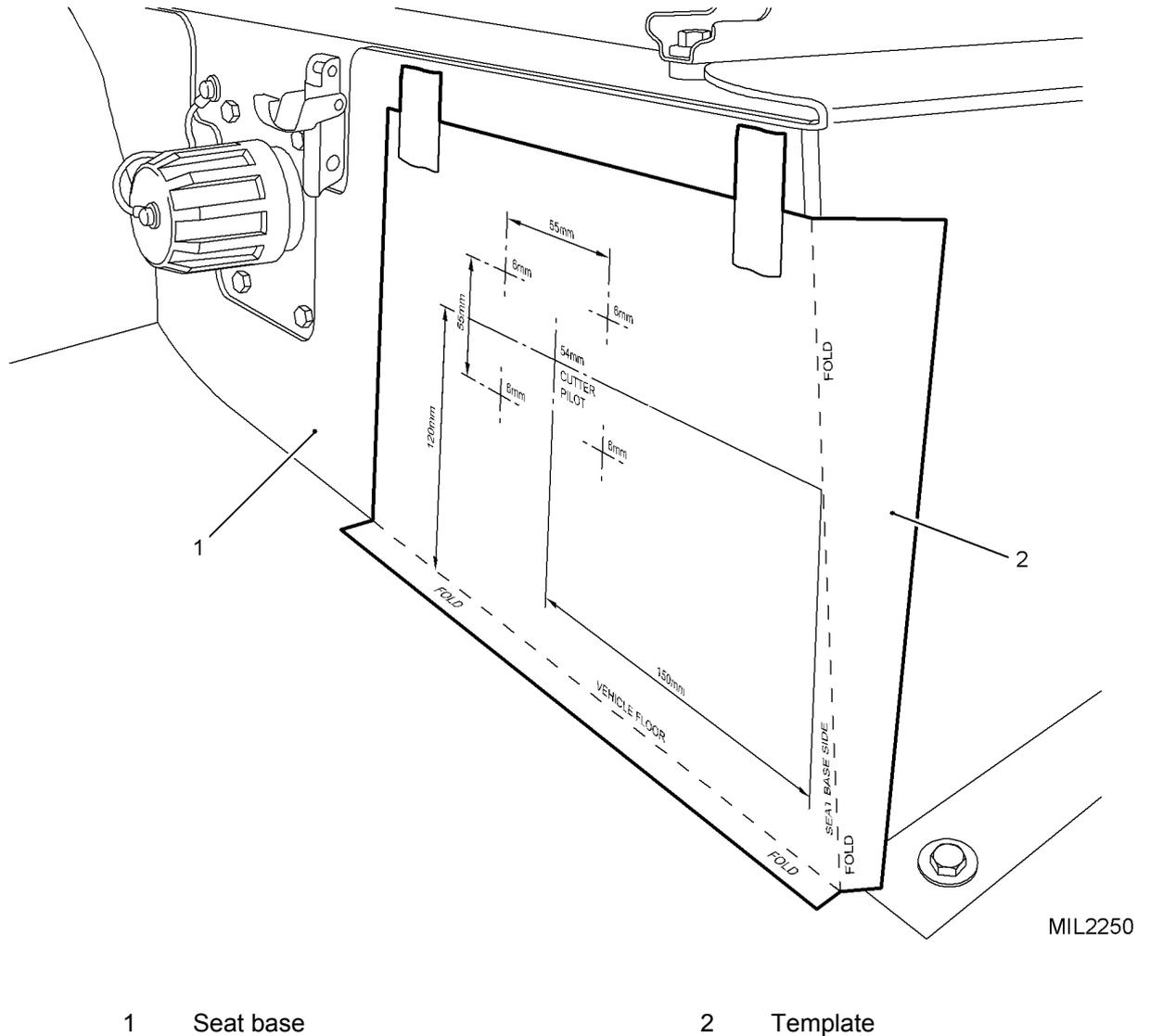
9.2.4 Install bolt (10) with star washer (11) into hole from under vehicle, from inside vehicle fit the auxiliary earth lead (9) to the bolt and secure with nut (12). Tighten nut to a torque of 25 Nm (18.5 lbf ft). If fitted attach the inter vehicle start socket earth cable on top of nut on the auxiliary earth terminal and secure with a 2nd nut (12) (Refer to Fig 5). Tighten nut to a torque of 25 Nm (18.5 lbf ft). If an inter vehicle start socket earth cable is not fitted lock the 2nd nut against the 1st.



- | | | | |
|---|-----------------------------------|---|--|
| 1 | Inside seat base, right hand face | 4 | Nuts |
| 2 | Bolt, M8 x 25 | 5 | Inter vehicle start socket earth cable |
| 3 | Star washer | 6 | Auxiliary earth lead |

Fig 5 Installing Auxiliary Earth Terminal

9.3 Drilling the seat base (Refer to Fig 6).



1 Seat base

2 Template

Fig 6 Drilling the Seat Base

9.3.1 Align the actual size template (supplied as an appendix at the end of this Mod Instruction, make sure the template is NOT scaled when printed) with the seat base.

NOTE

It may be necessary to drill through seat base trim on W/W or REMUS vehicles and then enlarge the hole in the trim to 14mm to facilitate the head of the fixing screws.

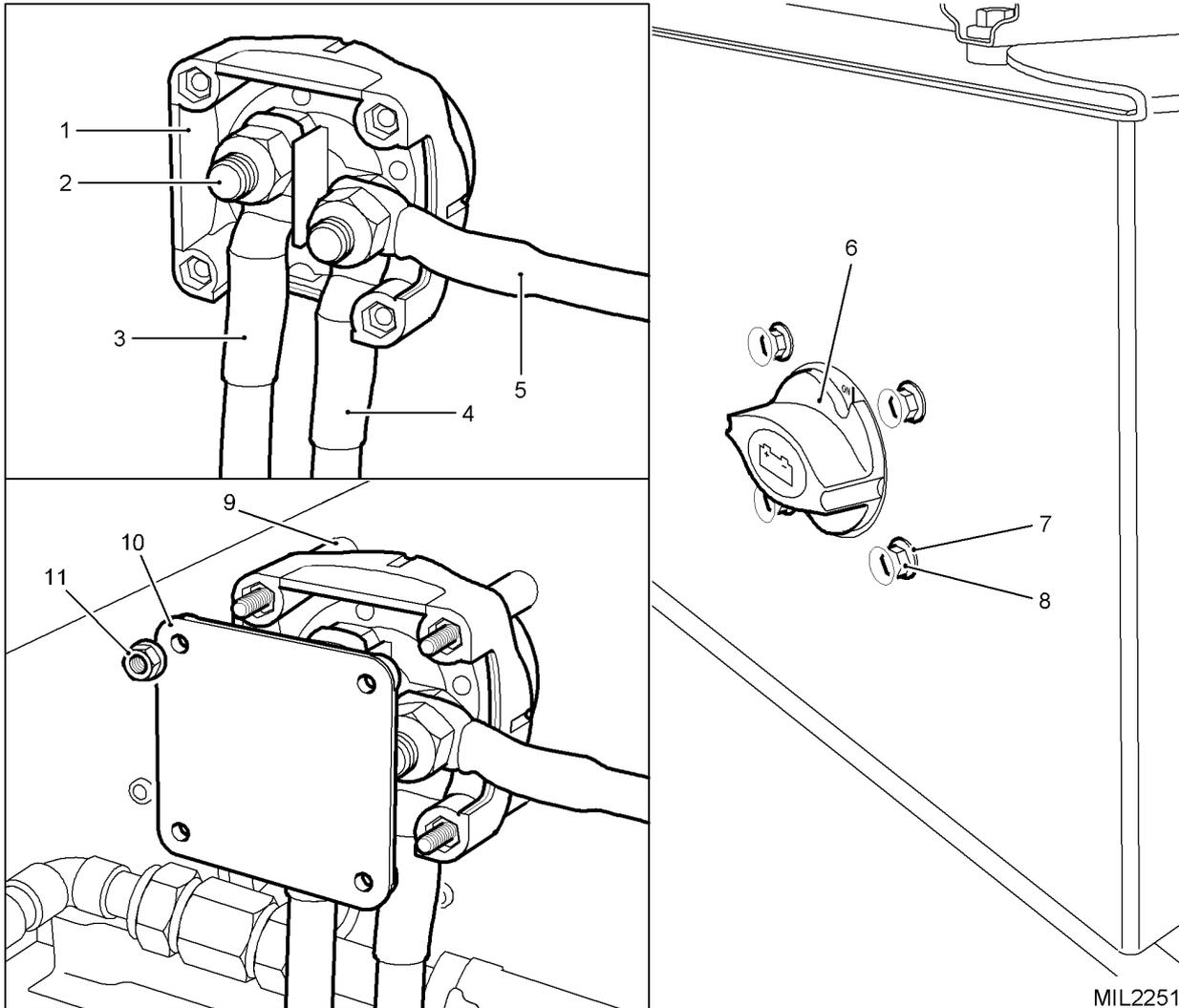
WARNINGS

(1) HEALTH AND SAFETY. ENSURE APPROPRIATE CLOTHING AND GOGGLES ARE WORN WHEN DRILLING.

(2) ENSURE THERE IS NOTHING THAT WILL BE DAMAGED BY THE DRILL PASSING THROUGH THE SEAT BASE.

- 9.3.2 Drill five 2.5 mm dia. pilot holes through template and then remove template.
- 9.3.3 Drill the 54mm dia. centre hole using hole cutter (items 14 and 15).
- 9.3.4 Drill the four 6mm dia. holes for the isolator switch fixings.
- 9.3.5 Deburr the 54mm hole and the four 6mm holes.

9.4 Installing the isolator switch (Refer to Fig 7)



- | | | | |
|---|---|----|-------------|
| 1 | Battery isolator switch | 7 | Washer |
| 2 | Terminal fixings | 8 | Screw |
| 3 | Isolator switch to battery negative cable | 9 | Spacer tube |
| 4 | Isolator switch to transfer box earth cable | 10 | Cover |
| 5 | Isolator switch to auxiliary earth cable | 11 | Flange nut |
| 6 | Isolator switch knob | | |

Fig 7 Fitting the Isolator Switch

- 9.4.1 Remove the right hand panel from the side of the isolator switch. (Refer to Fig 7).
- 9.4.2 Assemble the auxiliary earth lead (9) and isolator switch to transfer box earth cable (3) onto the isolator switch (1). The cables are positioned to the right when viewing the isolator switch terminal studs. (Refer to Fig 7).
- 9.4.3 Assemble the isolator switch to battery negative cable (2) onto the isolator switch (1). The cable is positioned to the left when viewing the isolator switch terminal studs.

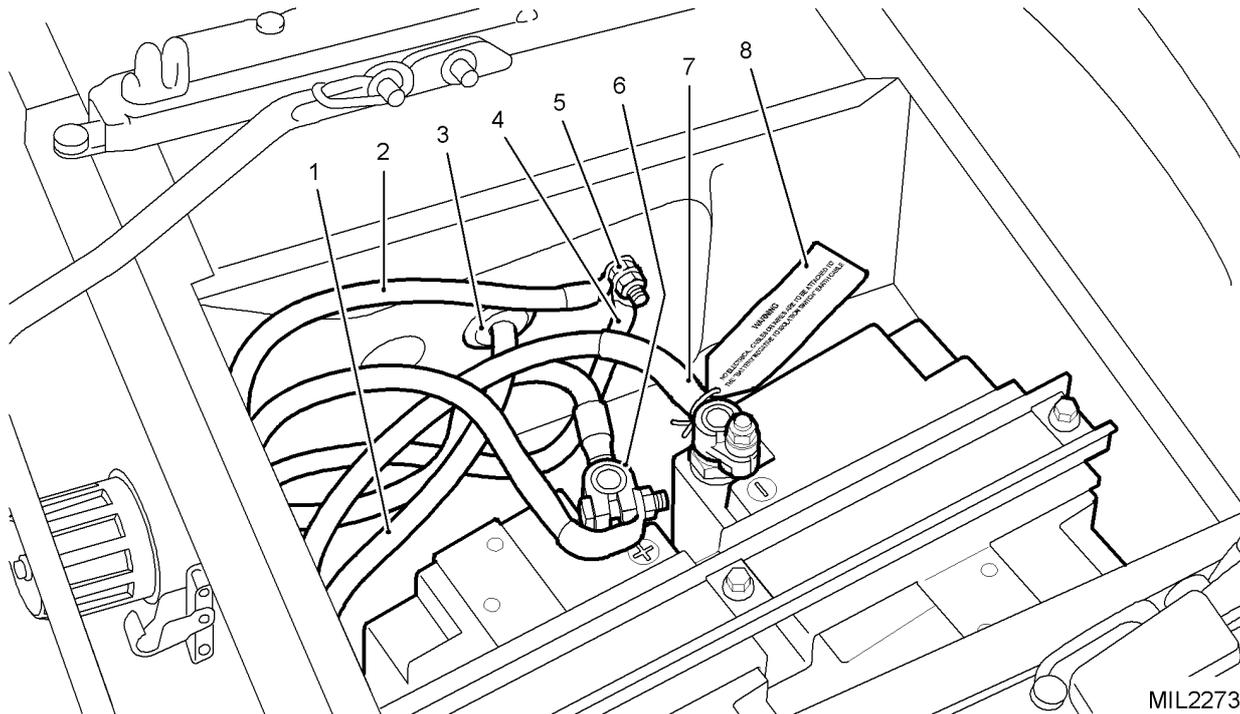
NOTE

On Winter Water vehicles remove a square of foil insulation from the mating area between the isolator switch and seat base.

- 9.4.4 Install the isolator switch knob through the hole in the seat base and align the fixing holes.
- 9.4.5 Install screws (4) with spring washers (5) through the seat base and then through spacer tubes (7) and the isolator switch.
- 9.4.6 Fit the rear cover to the rear of the isolator switch, secure with nuts (8).
- 9.4.7 Feed isolator switch to transfer box earth cable (3) through hole in inner face of battery box.
- 9.4.8 Attach isolator switch to transfer box earth cable (3) to transfer box earth point (Refer to Fig 3) and then chassis earth point (Refer to Fig 4). Tighten the nut to a torque of 45 Nm (33 lbf ft).
- 9.4.9 Re-attach AH12-13N850-AAA cable (Refer to Fig 3). Tighten the nut to a torque of 45 Nm (33 lbf ft).
- 9.4.10 Grease chassis and transfer box earth points thoroughly.
- 9.4.11 Install cable grommet (Refer to Fig 8) into the hole in battery box.
- 9.4.12 Secure the Warning label (13) with the attached string tie onto the Battery Negative to Isolation Switch Earth Cable, as close as you can get it to the end of the plastic coating on the earth lead:

WARNING

NO ELECTRICAL CABLES OR WIRES ARE TO BE ATTACHED TO
THE "BATTERY NEGATIVE TO ISOLATION SWITCH" EARTH CABLE



- | | | | |
|---|--|---|------------------------|
| 1 | Isolator switch to transfer box cable | 5 | Earth terminal |
| 2 | Auxiliary earth cable | 6 | Battery positive cable |
| 3 | Grommet | 7 | Battery negative cable |
| 4 | Inter vehicle start socket earth cable | 8 | Warning label |

Fig 8 Battery Connection

- 9.4.13 Refit the vehicle batteries and secure with battery clamp.
- 9.4.14 Attach positive cable to battery positive terminal.
- 9.4.15 Attach battery negative cable (2) to battery negative terminal.
- 9.4.16 Ensure isolator switch is turned to "On" position.
- 9.4.17 Turn ignition key to position 1, ensure warning lights illuminate.
- 9.4.18 To check the system, turn the Isolation switch to the off position to ensure the warning lights are not illuminated and the batteries are isolated. Turn off the ignition.

TESTING AFTER EMBODIMENT

10 Nil.

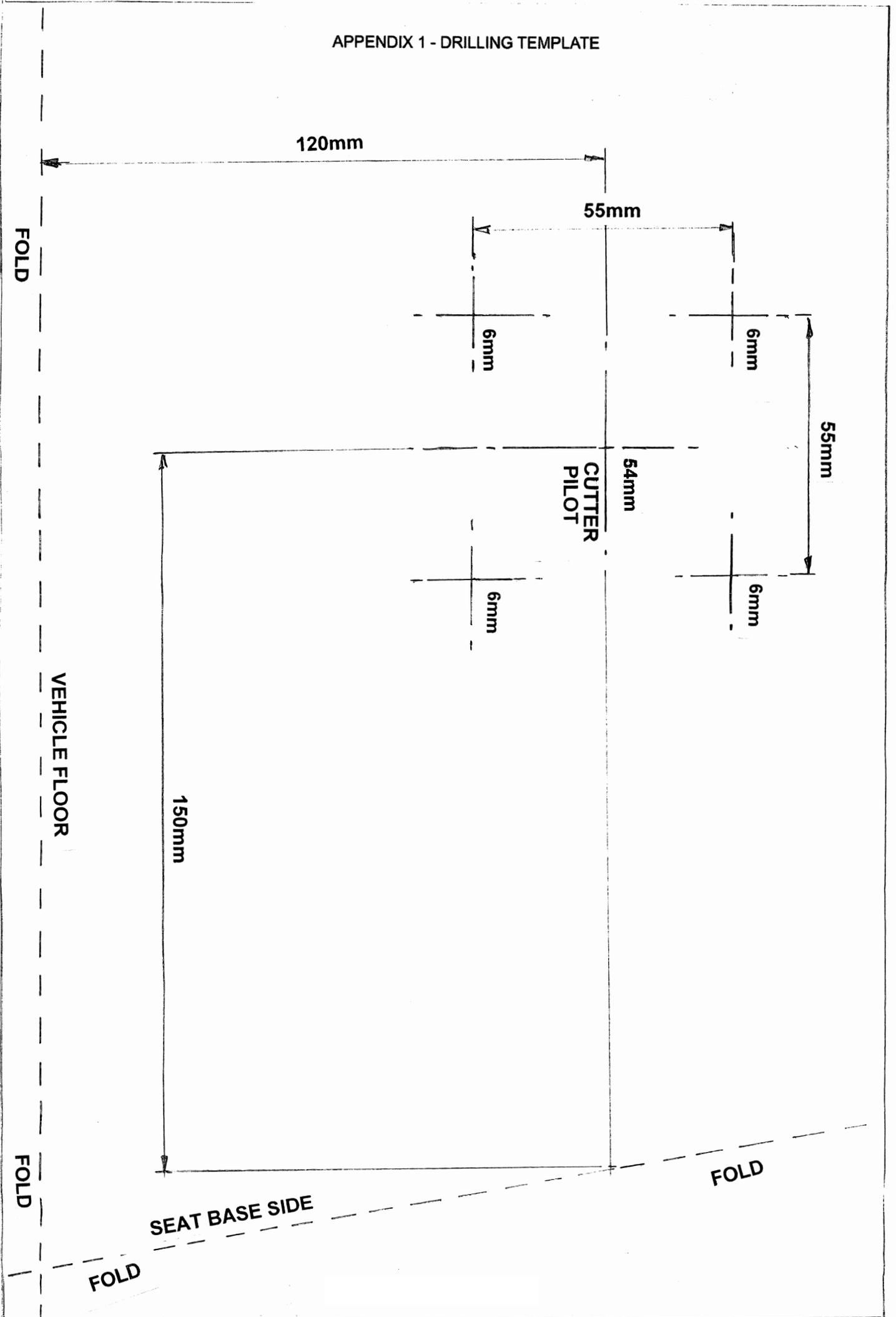
EFFECT ON WEIGHT

11 Negligible.

PUBLICATION AMENDMENTS

12 Nil.

APPENDIX 1 - DRILLING TEMPLATE



**TRUCK UTILITY LIGHT (TUL) HS
AND TRUCK UTILITY MEDIUM (TUM) HS**

MODIFICATION INSTRUCTION NO. 42

Sponsor: OSVP
Project No.:
File Ref:

Publication Authority: OSVP

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Fitting a swing away spare wheel carrier, the installation of a spare wheel lifting aid, (including preparation of soft top by converting a drop down tailgate to a side hinged tailgate) and the fitting of a rear step.

(Approval No. LSTP 12-6695)

INTRODUCTION

1 This instruction details the conversion of a drop down tailgate to a side hinged tailgate and includes fitting a Swing Away Spare Wheel Carrier, the installation of a Spare Wheel Lifting Aid and the fitting of a Rear Step.

1.1 Limitations on use of equipment. Nil

APPLICABILITY

2 TUM(HS) Vehicles only, with the following Asset codes: RB5006 3100; RB5007 3100; NB5008 3100; NB5008 3160; NB5009 3100; NB5009 3160; NB5009 3170; NB5010 3100; NB5010 3101; NB5010 3160; NB5010 3161; NB5010 3170; NB5010 3171; NB5010 3199; NB5010 8100; NB5010 8160; NB5010 8170; NB5017 3100; NB5017 3160; NB5017 3190; NB50178100; NB5020 3100; NB5020 3101; NB5020 3102; NB5020 3103; NB5020 3104; NB5020 3105; NB5020 3106; NB5020 3107; NB5020 3160; NB5020 3161; NB5020 3170; NB5020 3180; NB5020 3190; NB5020 8100; NB5020 8101; NB5020 8102; NB5020 8103; NB5020 8104; NB5020 8160; NB5020 8170; NB5020 8180; NB5020 8190; NB5021 3100; NB5021 3160; NB5021 3170; NB5021 3180; NB5021 3190; NB5031 3100; NB5031 3160; NB5031 3170; NB5031 3180; NB5031 8100; NB5031 8160; NB5033 3100; NB5035 3100; NB5037 3100; RB5042 3100.

TUL(HS) Vehicles only, with the following Asset codes: NB4219 3100; NB4220 3100; NB4220 8100; RB4224 3100; NB4225 3100; NB 4225 8100; NB 4226 3100; NB4228 3100; NB4229 3100; NB4232 3100.

REASON FOR MODIFICATION

3 Code 1 - to improve safety.

PRIORITY

4 Army: Routine.
RAF: Class 3.

ESTIMATED TIME REQUIRED

5 Embodiment: 2.5 man hrs.

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

6.1.1 ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.

6.1.2 RAF - Units not later than the next routine maintenance and Vehicle Depots before next issue of vehicle.

6.2 Associated modification instructions. Nil.

6.3 Modification plate strike action. N/A.

Action required by

7

7.1 Units and establishment holding equipment.

7.1.1 Examine JAMES/Vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary units with level 2 REME support demand the stores required.

7.1.3 Upon the embodiment of equipment, units are to record the modification subject and AESP Number in JAMES/Equipment documents.

7.1.4 RAF – Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADPMTMS job certification sheet and to follow the procedures laid down in AP 100C - 08A.

7.2 Army units authorised to carry out levels 2, 3 and 4 maintenance and RAF units.

7.2.1 ARMY – When requested by users or during overhaul of equipment on charge without REME level 2 support, obtain the items listed in Para. 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.2.3 Complete AF G1084A when reporting completion of modification to FORWARD (RAF) using the following code.

RAF MODIFICATION CODE: AFN198

NOTE:

RAF units operating STAMA are also to complete ADP MTS job certification sheet and to follow the procedures laid down in 100C - 08A.

7.3 All receipts of this instruction. Add particulars to AESP ref. 2320-D128-811 Mod instr. index.

Stores tools and equipment

NOTE

Items not codified, if required, should be demanded using the manufacturer's part numbers through the normal system.

8

8.1 Stores to be demanded.

8.1.1 The following set is to be demanded quoting this instruction as authority.

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
		2540-99-575-1130	.Soft Top Kit (Auxiliary Parts) (Comprising)	1
1		2510-99-794-2040	..Hinge, Tailgate	(2)
2		W500024-S442	..Screw, flange headed M8 x 25	(4)
3		W500115-S442	..Screw, flange headed M8 x 60	(4)
4		2510-99-829-7487	..Washer, Nylon	(4)
5		6H12-1660-BA	..Washer, M8	(4)
6		W520202-S440	..Nut, flange headed, nyloc M8	(8)
7		5340-99-805-4577	..Bumper, Rubber	(2)
8		5305-99-135-0423	..Screw, Machine, M4 x 12	(2)
9		5310-99-759-2084	..Washer, Flat	(2)
10		5310-99-119-3324	..Nut, self-locking, hexagonal	(2)
11		2540-99-795-3170	..Mirror Arm, short reach	(1)
12			..Rear step	(1)
13		5306-99-124-3617	..Bolt, M10 x 110	(2)
14			..Washer, M10, Form G	(2)
15			..Nut, flanged, M10	(2)
16			..Bolt, M8 x 110	(2)
17			..Washer, M8, 31.75mm OD	(2)
18			..Nut, flanged, M10	(2)
19		6220-99-5737259	..Brake/tail lamp	(2)
20		6240-99-9953288	..24v bulb	(2)
21		TBA	..Harness extension, rear lights	(2)

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
		F9822	..Spare Wheel Lifting Aid Fitting Kit (Comprising)	
22			...Stepped Washer	(2)
23			...Screw, M8 x 25	(2)
24			...Nut, M8	(2)
		2540-99-297-9005	..Soft Top Swing Away spare wheel carrier Kit	
25			..Frame Assy, complete	(1)
26			...Stiffening Plate	(1)
27			...Nut, M12 lock nut	(1)
28			...Nut, M12	(1)
29			...Washer, M12	(1)
30			...Washer, M12 rubber	(1)
31		W500034-S442	...Screw, flanged head M10 x 30	(2)
32		W520203-S440	...Nut Flanged head, nyloc M10	(2)
33		W711820-S442	...Bolt, flanged head M8 x 110	(3)
34		W5200024-S442	...Screw, Flanged Headed M8 x 25	(4)
35		WS20202-S440	...Nut, Flanged Headed, nyloc M8	(7)
36		RRD500010	...Nut, wheel	(3)
37		TBA	...Grommet	(2)
		2540-99-153-8593	..Hard Top Kit (Auxiliary Parts)	1
			(Comprising)	
38		2590-99-147-2989	..Blanking Plate	(1)
39		5310-99-138-8423	..Nut, self-locking	(3)
40		2540-99-795-3170	..Mirror Arm, short reach	(1)
41			..Rear step	(1)
42		5306-99-124-3617	..Bolt, M10 x 110	(2)
43			..Washer, M10, Form G	(2)
44			..Nut, flanged, M10	(2)
45			..Bolt, M8 x 110	(2)
46			..Washer, M8, 31.75mm OD	(2)
47			..Nut, flanged, M8	(2)
48		6220-99-5737259	..Brake/tail lamp	(2)
49		6240-99-9953288	..24v bulb	(2)
50		TBA	..Harness extension, rear lights	(2)
		F9822	..Spare Wheel Lifting Aid Fitting Kit (Comprising)	
51			...Stepped Washer	((2))
52			...Screw, M8 x 25	((2))
53			...Nut, M8	((2))
		2540-99-152-9601	..Hard Top Swing Away spare wheel carrier Kit	1
			(Comprising)	
54			..Frame Assy, complete	(1)

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
55			...Stiffening Plate	(1)
56			...Nut, M12 lock nut	(1)
57			...Nut, M12	(1)
58			...Washer, M12	(1)
59			...Washer, M12 rubber	(1)
60		W500034-S442	...Screw, flange headed M10 x 30	(2)
61		W520203-S440	...Nut flange headed, nyloc M10	(2)
62		W711820-S442	...Bolt, flange headed M8 x 110	(3)
63		WS20202-S440	...Nut, flange headed, nyloc M8	(3)
64			...Bolt, flange headed M8 x 50	(6)
65			...Bolt, flange headed M8 x 25	(6)
66			...Nut, flange headed M8	(6)
67		RRD500010	...Nut, wheel	(3)
68		TBA	...Grommet	(2)
69			...Washer, M8, 31.75mm OD x 3mm	(6)
70			...Door holder female rubber with bracket	(1)
71			...Bolt, M6 x 20	(2)
72			...Washer, M6	(4)
73			...Nut, nyloc M6	(2)

8.2 Special tools and test equipment required

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
70	HTC12	3460-99-137-4927	Arbour, Hex shank 9mm AF - 6mm pilot drill	(1)
71	HTC12	3455-99-137-4931	Blade - Hole saw, 25mm	(1)

Sequence of operations

NOTE:

The item numbers in Para 8 are used as references throughout this instruction.

WARNINGS:

HEALTH AND SAFETY. ENSURE APPROPRIATE CLOTHING AND GOGGLES ARE WORN WHEN DRILLING.

ENSURE THERE IS NOTHING THAT WILL BE DAMAGED BY THE DRILL PASSING THROUGH THE BODYWORK.

9 Carry out the modification as follows.

NOTE:

Dispose of any parts removed and not required to be refitted during the modification procedure.

Disconnect the vehicle batteries refer to 2320-D-128-522, Chapter 13-1, Para 2. If fitted isolate the radio batteries.

Conversion to Side Hinged Tailgate and installation of Side Hinged Spare Wheel Carrier Kit - Soft Top vehicles

9.1 It is necessary to ensure the correct tailgate (NSN 2510-99-417-6255) is fitted. Confirm the dimension from the top of tailgate to the lip of the outer edge is 37mm (refer to Fig 1), if not replace with the correct tailgate. Ensure the existing drop down tailgate is free from damage and sits correctly, (Level and square with the bodyside cappings, central in the aperture and with equal spacing to both sides). If not level loosen the lower tailgate hinge bolts to achieve the correct alignment, retighten after alignment to hold tailgate securely in place during conversion. Replace the upper tailgate bumper rubbers (item 7) using the M4 fixings (Items 8, 9 and 10) supplied. Examine the tailgate side seals for signs of wear and replace as required (RH side seal NSN 2510-99-757-5308 and LH side seal NSN 2510-99-757-5309. Close tailgate.

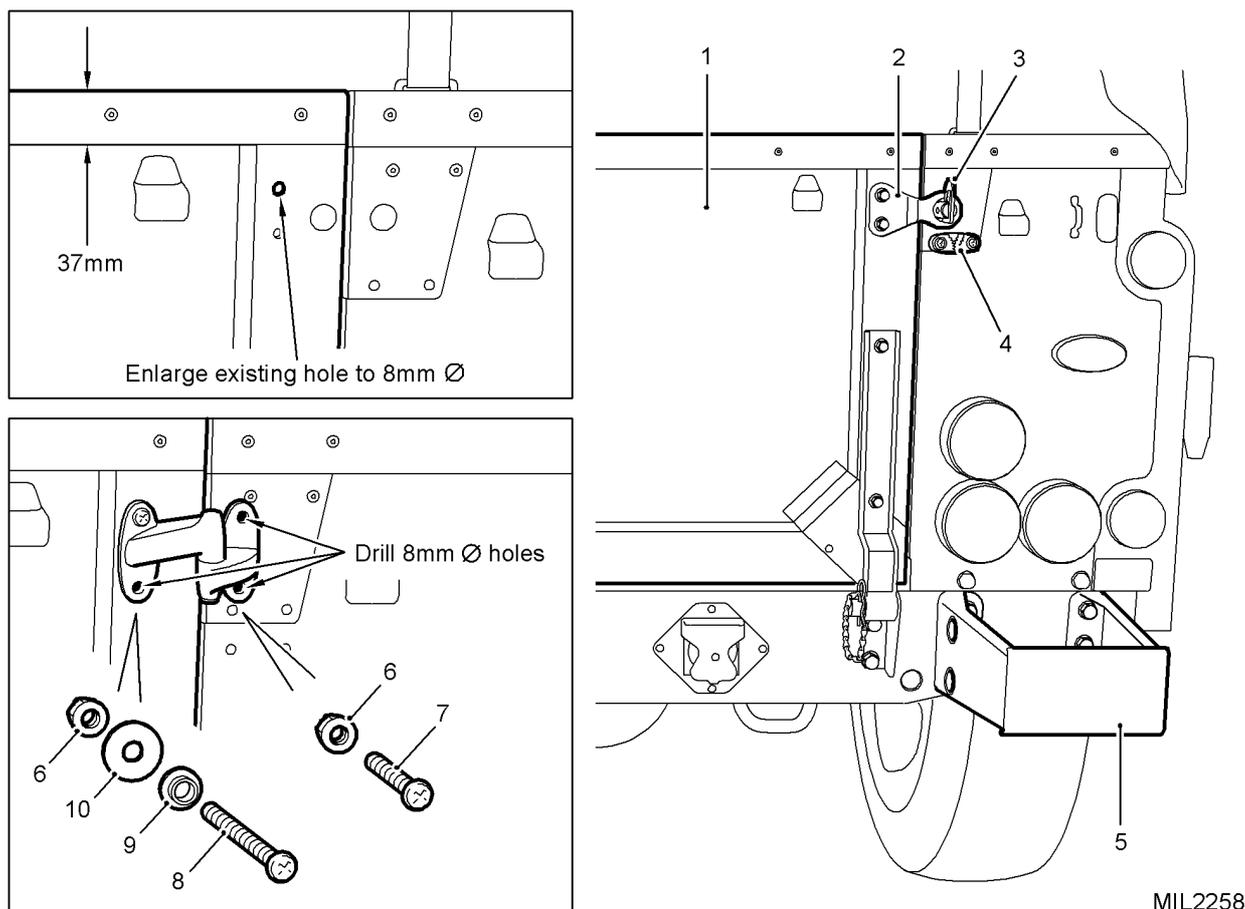
9.2 Remove the RH side bumperette, the RH rope cleat, the RH antiluce cotter and closure plate. Removing the closure plate will also result in the inner cable/chain bracket being removed). Retain these parts for the present. (Refer to Fig 1).

9.3 Enlarge the closure plate upper fixing hole in the tailgate from 6mm (clearance) to 8mm dia, deburr the hole. Fit new hinge (item 1) using the upper hole of the hinge and M8 fixings (Items 3, 4, 5 and 6) ensuring the tailgate hinge pin is parallel to the tailboard edge and the nylon washer (item 4) is fitted between the hinge and the tailgate. (Refer to Fig 1).

9.4 Using the hinge as a template, drill out the remaining 3 holes to 8mm dia, de-burr the holes. Fix the hinge with the M8 fittings supplied (Items 2, 3, 4, 5 and 6) ensuring that a nylon washer (item 4) is fitted between the tailgate and hinge.

9.5 Locate the RH under body lamp access panel and remove to facilitate access.

9.6 Remove the RH bottom tailgate hinge, collect the nut plate from behind the rear cross member and dispose of these parts.



- | | | | |
|---|------------------------|----|-----------------------|
| 1 | Tailgate | 6 | Flanged nyloc nut, M8 |
| 2 | Antiluce closure plate | 7 | Screw, M8 x 25 |
| 3 | Antiluce cotter | 8 | Screw, M8 x 60 |
| 4 | Rope cleat | 9 | Nylon washer |
| 5 | RH bumperette | 10 | Washer, M8 |

Fig 1 Installing the Top Hinge

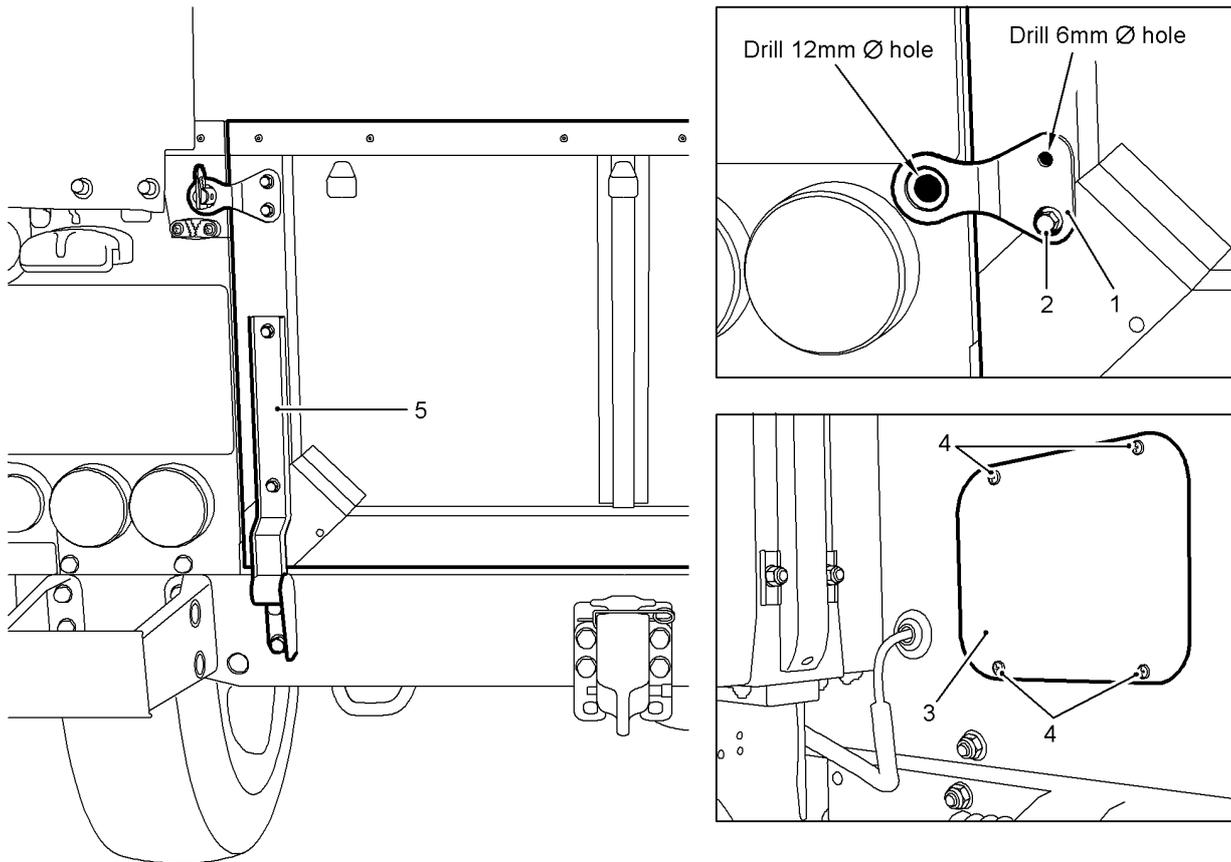
9.7 Drill out the lower tailgate hole in the tailgate to 8mm dia, deburr the hole. Fit the second hinge (item 1) using the lower hole of the hinge and M8 fixings (Items 3, 4, 5 and 6) ensuring the nylon washer (item 4) is fitted between the hinge and the tailgate. Ensure that the hinge and hinge pin is parallel to the edge of the tailgate and both hinge pins are in alignment. (Refer to Fig 1).

WARNING:

ENSURE THERE IS NOTHING THAT WILL BE DAMAGED BY THE DRILL PASSING THROUGH THE BODYWORK.

9.8 Using the hinge as a template, drill out the remaining 3 holes to 8mm dia, de-burr the holes. Fix the hinge with the M8 fittings supplied, (Items 3, 4, 5 and 6), ensuring that a nylon washer (item 4) is fitted between the tailgate and hinge.

9.9 Remove the LH bottom tailgate hinge, collect the nut plate from behind the rear cross member and dispose of the parts.



MIL2260

- | | | | |
|---|---------------------------------|---|--------------------------|
| 1 | Closure plate | 4 | Screws |
| 2 | Fixings | 5 | LH bottom tailgate hinge |
| 3 | LH under body lamp access panel | | |

Fig 2 Fitting the Antiluce Cotter and Closure Plate

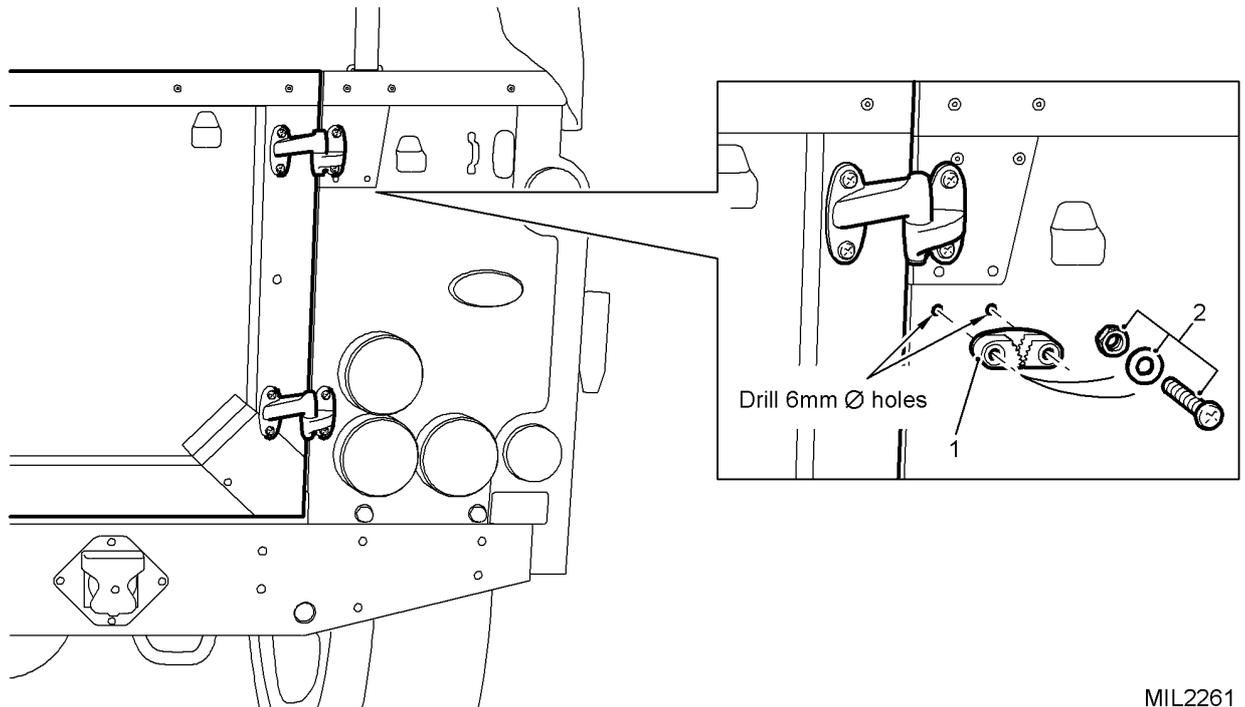
9.10 Fit the antiluce cotter closure plate to the lower hole of both the original hinge and the antiluce cotter closure plate. Ensure the plate is correctly aligned and use as a template to drill the second fixing 6mm hole, secure with fixings. (Refer to Fig 2).

9.11 Locate the LH under body lamp access panel and remove to facilitate access.

9.12 Using the closure plate as the template, drill a 12mm dia hole in the LH side panel and fit the antiluce cotter in place.

9.13 Ensure tailgate opens and closes correctly and the antiluce cotter locks in place before it reaches the lowest position, (i.e. with slight pressure to the top LH corner of the tailgate, the antiluce cotter should not drop to its lowest position).

9.14 Position the rope cleat below the top hinge as shown, mark and drill out the 2 holes to 6mm dia. Refit the rope cleat using original fixings. (Refer to Fig 3).



MIL2261

1 Rope cleat

2 Fixings

Fig 3 Installing the Rope Cleat

9.15 Refit the RH and LH inner lamp access panels.

9.16 Touch up paint work as necessary.

9.17 Removal of existing spare wheel carrier. (Refer to Cat 201 Chap 3-1).

9.17.1 Remove spare wheel lifting aid (refer to Modification Instruction 25) and retain for future use. Also remove the existing side mounted spare wheel carrier and discard.

9.17.2 Remove the long mirror arm on the side of the spare wheel mount and replace with short mirror arm (Item 11). (Refer to Cat 201, Chap 3-1).

9.18 Fitting the spare wheel carrier.

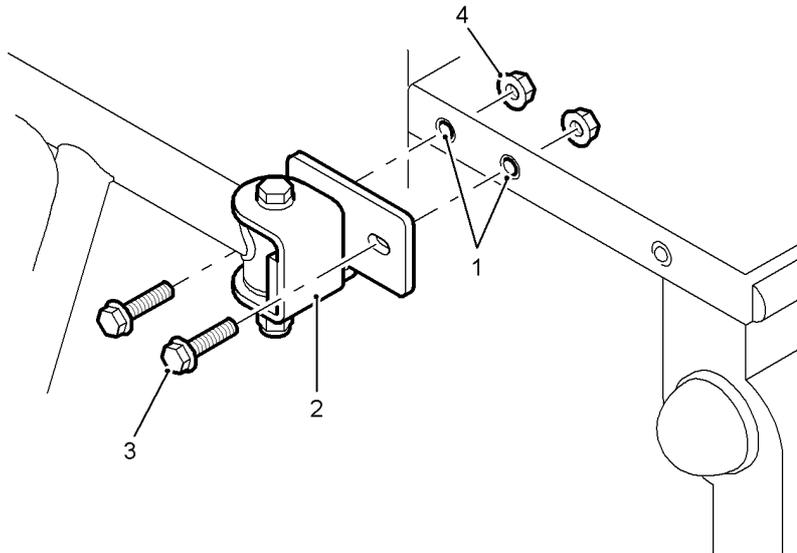
NOTE:

Ensure the holes are in line with the rivets in the capping before drilling as detailed below.

9.18.1 Using a 3mm – 5mm, Drill out the two pop rivets from the RH body capping (refer to Fig 4) for location of rivets.

9.18.2 Drill out the holes in the capping to 11mm dia and deburr all holes.

9.18.3 Position the hinge of spare wheel carrier frame assembly (item 25) as shown in Fig 4 and fit and secure with two M10 screws (item 31) and nuts (item 32). (Refer to Figs 4 and 6).



MIL2266

1	Pop rivets	3	Screw, M10
2	Top hinge	4	Nyloc nut, M10

Fig 4 Top Hinge of Swing Away Carrier Frame Complete Assembly

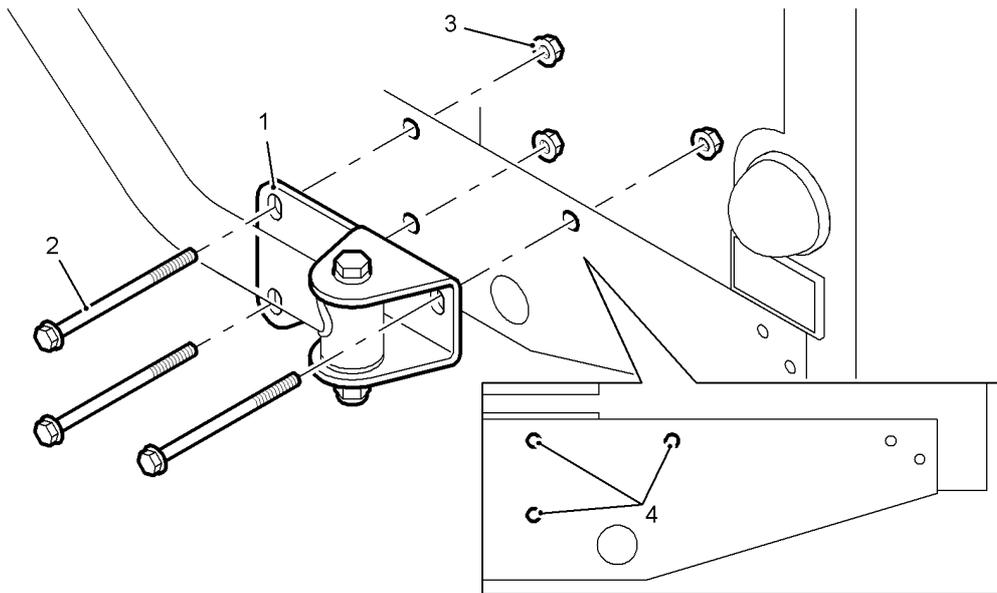
NOTE:

To ensure that the wheel carrier fits squarely the upper and lower carrier frame hinges should be in parallel with the door hinges and edge of the lower body.

9.18.4 Position the carrier frame assembly's (Item 25) bottom hinge on the rear cross member and secure with three M8 bolts (item 33) and nuts (item 35). (Refer to Figs 5 and 6).

NOTE:

To ensure that the wheel carrier fits squarely the upper and lower hinges should be parallel to the edge of the body.

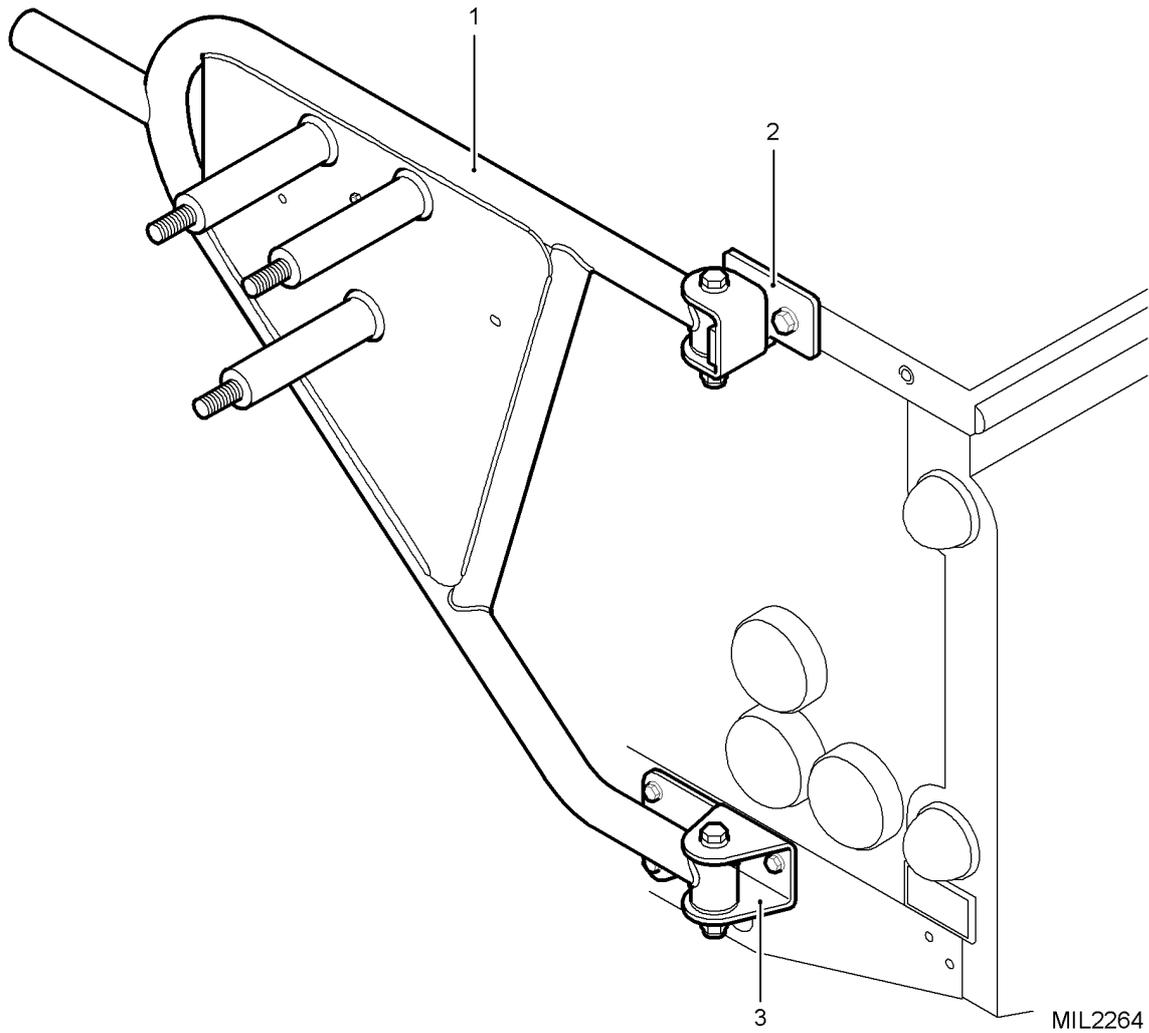


MIL2262

- 1 Bottom hinge
- 2 Bolt, M8

- 3 Nyloc nut, M8
- 4 Fixing holes

Fig 5 Bottom Hinge of Swing Away Carrier Frame Complete Assembly



- 1 Swing Away Carrier frame assembly
- 2 Top hinge

- 3 Bottom hinge

Fig 6 Wheel carrier fitting

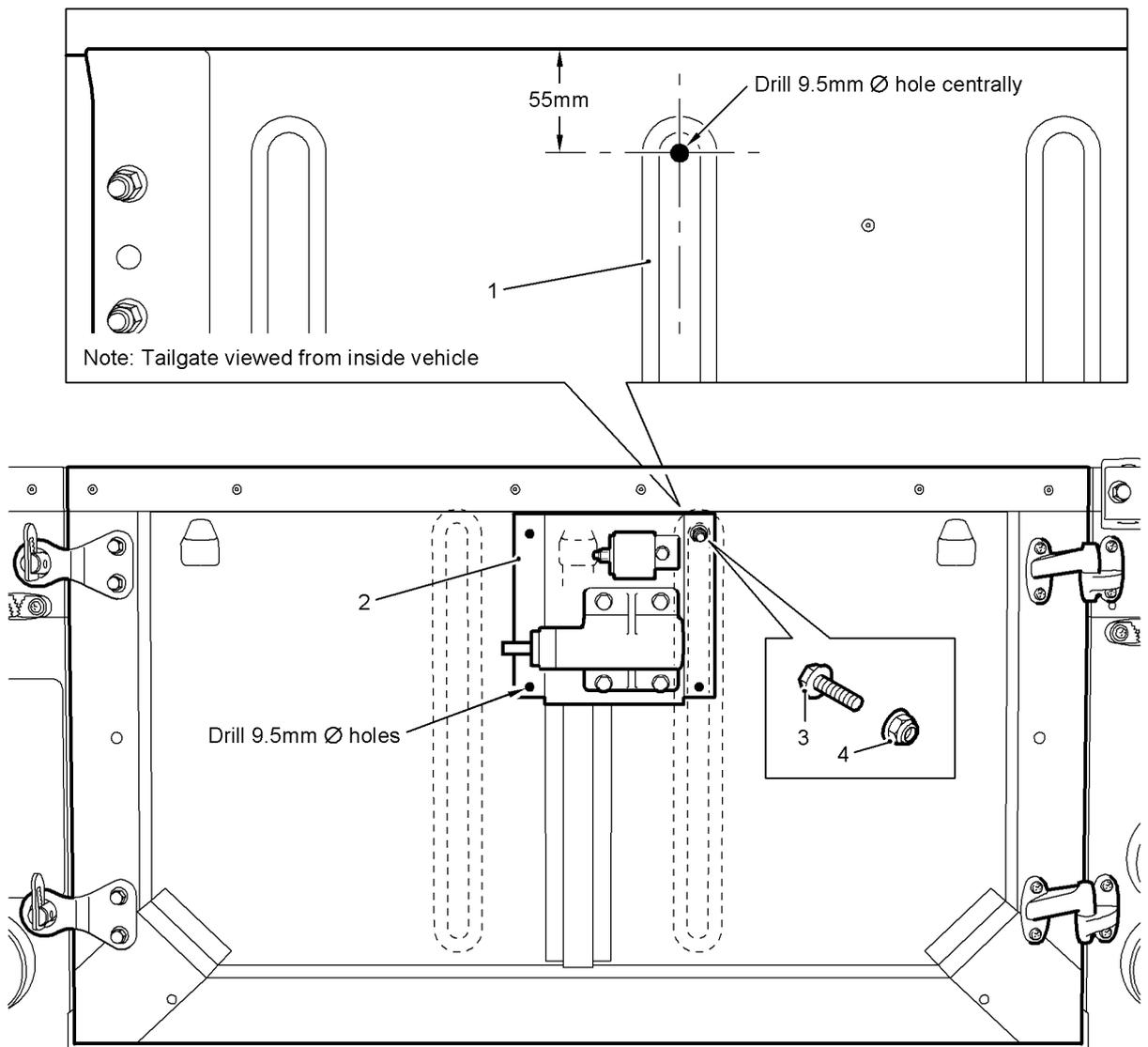
9.19 Fitting the Tailgate Stiffening Plate.

9.19.1 From inside the vehicle measure 55mm down from the top of the tailgate to a point central to the strengthening rib (Refer to Fig 7). From inside the vehicle drill a 9.5mm dia hole centrally at this point.

9.19.2 Fit the tailgate stiffening plate (Item 26) to the tailgate using a M8 screw (item 34) and nut (item 35).

9.19.3 Using the Tailgate Stiffening Plate as a template drill the other three fixing holes.

9.19.4 Fit the Tailgate Stiffening Plate to the tailgate, secure with screws (item 34) and nuts (item 35).



MIL2268

1 Strengthening Rib
2 Door Plate

3 Screw, M8
4 Nut, M8

Fig 7 Door plate fitting

9.20 Fitting the Piston Carrier Assembly.

9.20.1 Install the rubber washer (item 30) onto the shaft of the piston carrier assembly. (Refer to Fig 8).

9.20.2 Open the side opening tailgate and wheel carrier together and draw the piston into the slot in the wheel carrier frame.

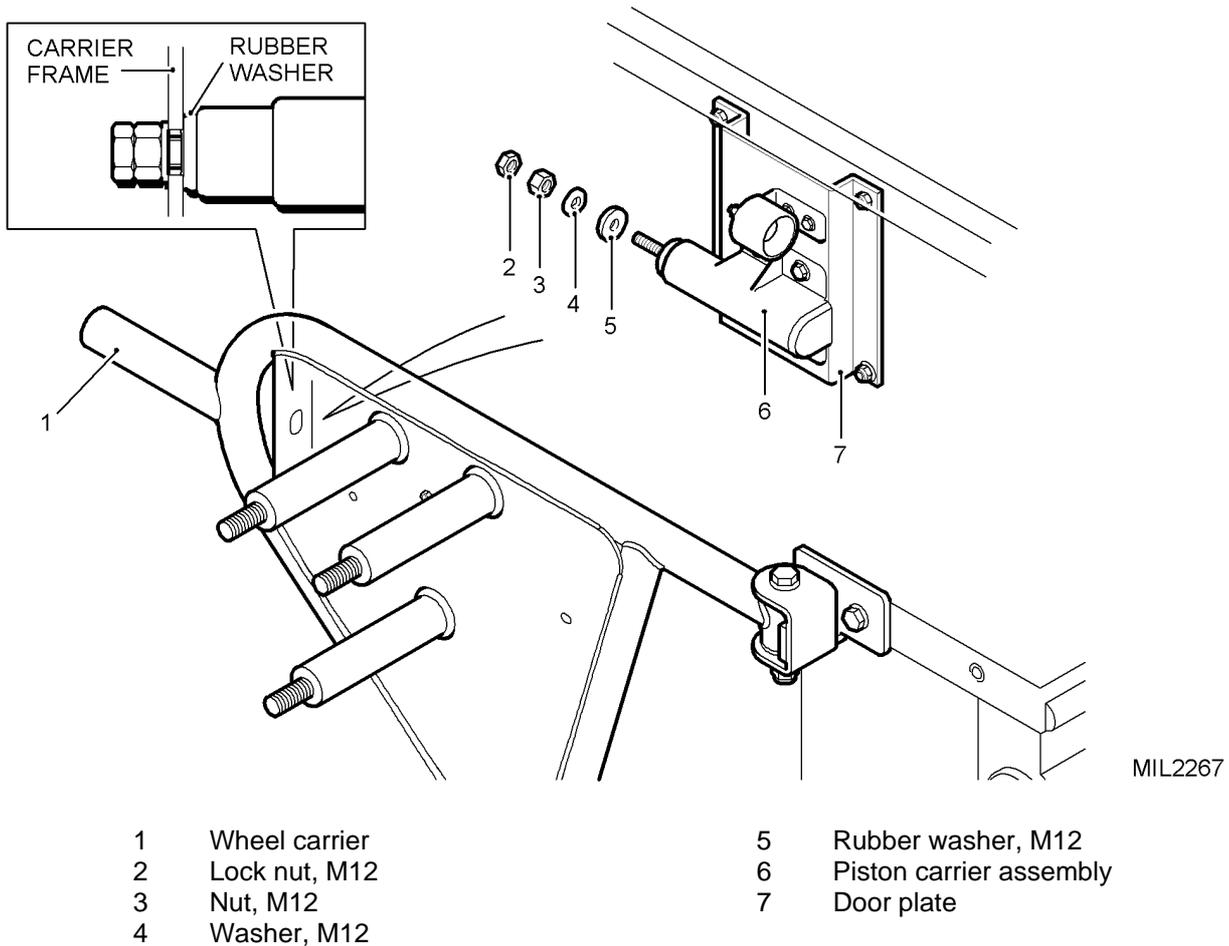
9.20.3 Close the tailgate and carrier, centralise the piston bolt.

9.20.4 Fully open the tailgate and check that the piston shaft is still in a central position. If the piston shaft is not central realign the piston carrier assembly on its slotted holes.

9.20.5 When the alignment is correct fit washer (item 29) and nut (item 28), tighten the nut until the rubber washer (item 30) is lightly pinched, but capable of upward / downward movement in the slotted hole as the door / tailgate is opened / closed.

NOTE:

Do not over tighten the nut (item 28).



MIL2267

Fig 8 Piston Carrier Assembly Fitting

9.20.6 Check that the tailgate opens and closes correctly, fit locking nut (item 27) and tighten onto nut (item 28).

9.20.7 Fully tighten all of the “nipped” fixings holding the carrier to the vehicle. Do not retighten the preset fixings of the Spare Wheel Carrier frame and Stiffener plate.

9.20.8 Check that the Door Holder male rubber mounted on the Swing Away Carrier frame and female rubber mounted on the door plate align and that Door Holder operates correctly. (Refer to Fig 9).

NOTE:

The safety catch is factory fitted and set up prior to despatch and no further adjustment should be necessary.

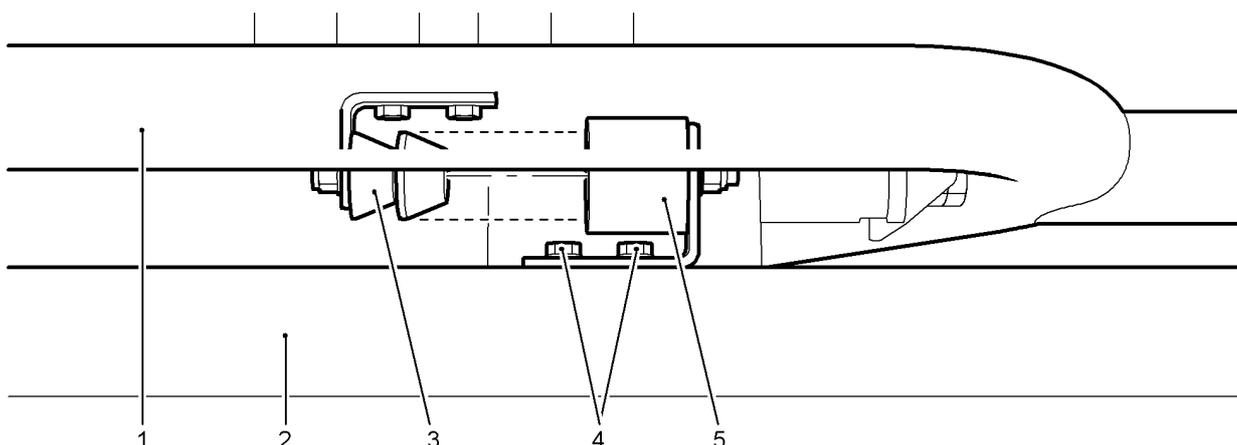
If adjustment is required to reduce door opening angle refer to procedures 9.20.9 and 9.20.10 below.

9.20.9 After the final installation is complete, check that the rear door opening angle does not exceed 85°. Indicated when the spare wheel and tyre assemble mounted on the swing away carrier obscures the vehicles R/H tail lights when the rear door is fully open. If adjustment is required, disconnect the swing away carrier from the door plate assembly at the piston, swing the carrier out independently of the rear door to gain access to the bracket adjustment bolts. (Refer to Fig 9).

9.20.10 To adjust the bracket loosen the two M6 bolts and adjust the bracket as required. Re-tighten bolts. (Refer to Fig 9).

NOTE:

Moving the bracket towards the right hand side of the vehicle (when viewed from behind the vehicle) will reduce the opening angle of the door. Reconnect the swing away frame to the door at the piston assembly and check the opening angle. Adjust either way as required to obtain the maximum opening angle of 85°.



Note: Swing Away Carrier viewed from above

MIL2283

- | | | | |
|---|--------------------------|---|----------------------------|
| 1 | Swing away carrier frame | 4 | M6 Bolts -mounting bracket |
| 2 | Tailgate | 5 | Door holder female rubber |
| 3 | Door holder male rubber | | |

Fig 9 Door Holder Rubber Alignment

9.20.11 If necessary trim the canopy to clear the top hinge on the wheel carrier. (Refer to Fig 10).

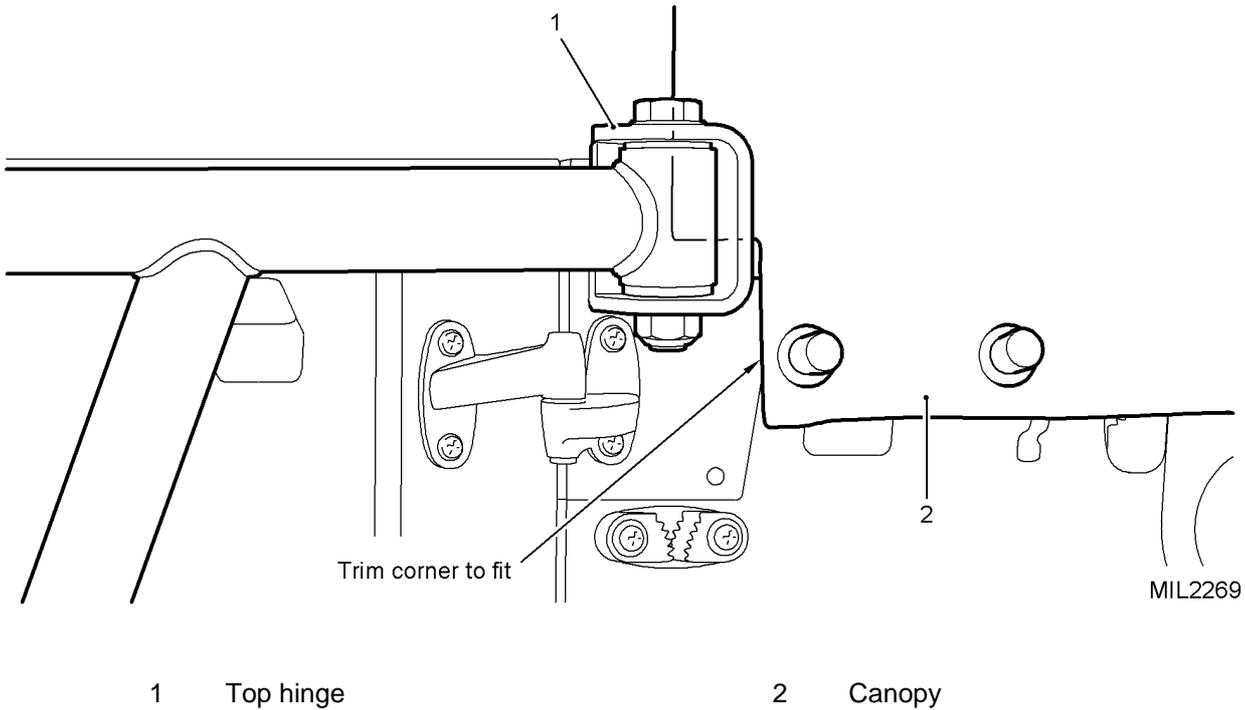


Fig 10 Trimming Canopy

9.21 Fitting the Spare Wheel Lifting Aid

NOTE:

Before refitting inspect the Spare Wheel Lifting Aid for excess wear or damage. If necessary, demand and fit a new Spare Wheel Lifting Aid.

9.21.1 If necessary drill two 8.5mm dia holes in the spare wheel carrier as shown in Fig 11 and deburr.

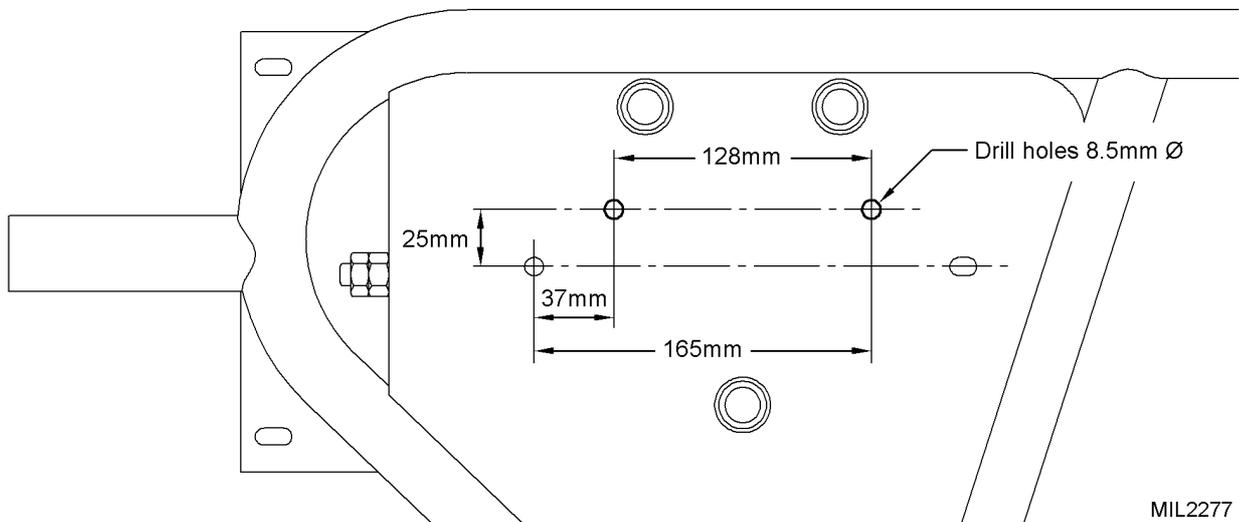
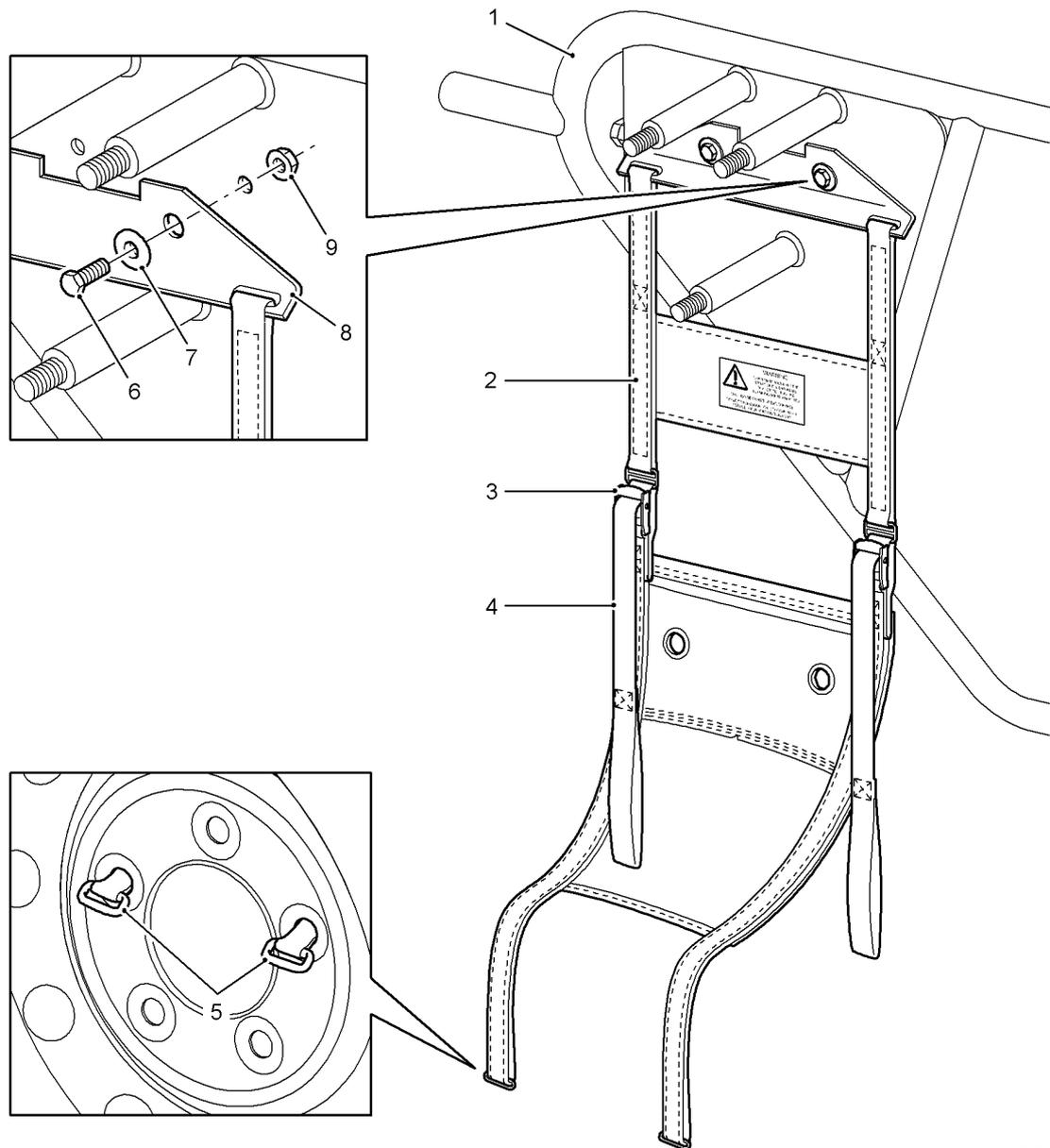


Fig 11 Drilling Spare Wheel Carrier

9.21.2 Secure the spare wheel lifting aid to the spare wheel carrier with two screws (item 23) and if necessary stepped washers (item 22) installed from the front of the bracket and secured with nuts (item 24) from the behind the spare wheel carrier. (Refer to Fig 12).



MIL2274

- | | | | |
|---|---------------------|---|----------------|
| 1 | Spare wheel carrier | 6 | Screw |
| 2 | Harness | 7 | Stepped washer |
| 3 | Adjustment cleats | 8 | Bracket |
| 4 | Adjustment straps | 9 | Nut |
| 5 | Harness stops | | |

Fig 12 Spare Wheel Lifting Aid

9.22 Fitting the Wheel on to the carrier.

9.22.1 Remove the tyre inflation valve extension from the wheel. (Refer to Modification Instruction 6).

9.22.2 With the harness hanging down from the wheel carrier push the plastic stops and straps through the wheel stud holes from the front of the wheel. (Refer to Fig 13).

NOTE:

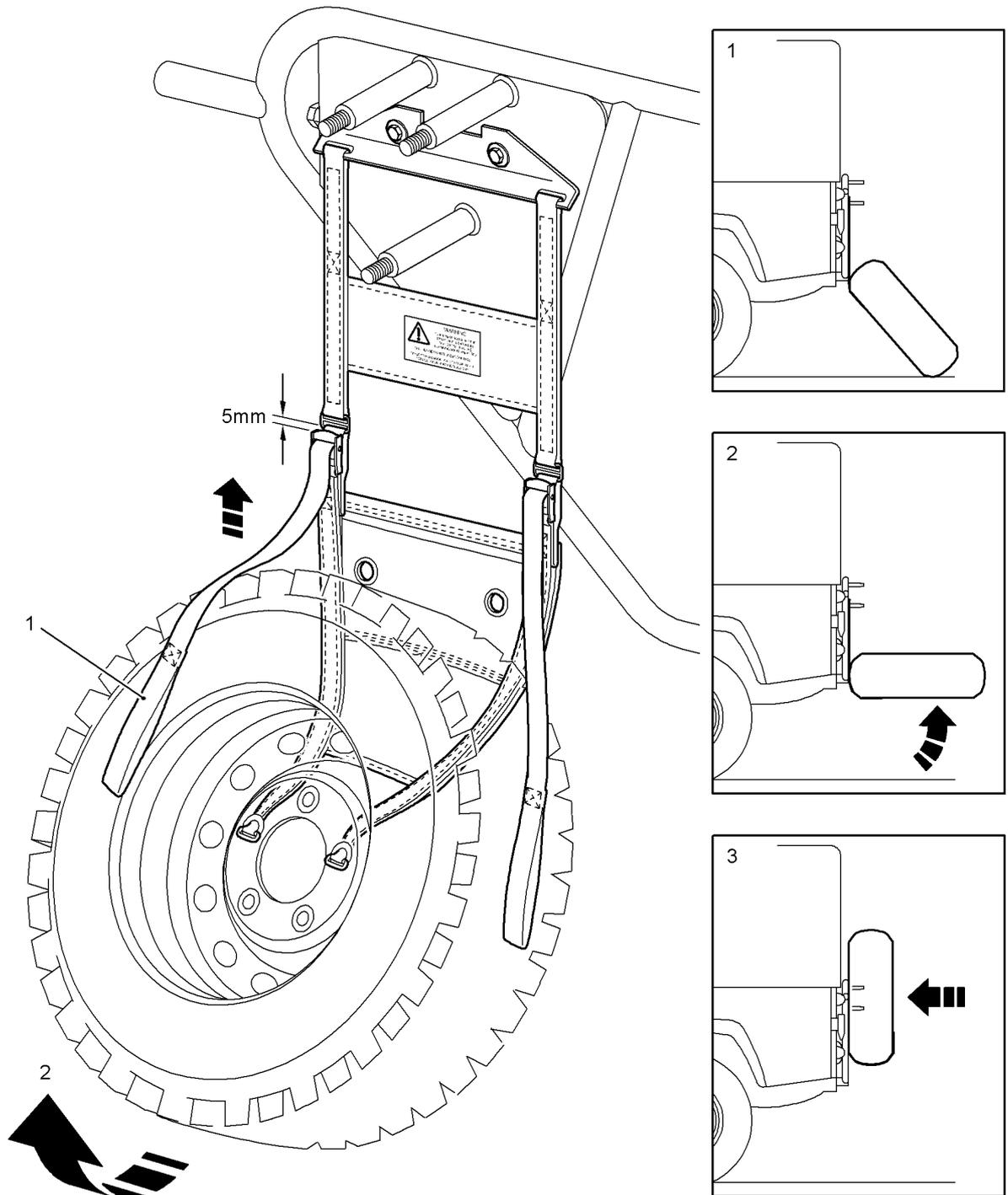
The plastic stops should be one wheel stud hole apart.

9.22.3 Adjust the straps fully against the metal buckles and then back them off by approximately 5mm. (Refer to Fig 13).

9.22.4 Stow the excess straps in the bag in the centre of the harness assembly.

9.22.5 Take hold of the spare wheel with both hands and lift the lower edge of the spare wheel and rotate wheel so that the centre of the wheel locates up against the wheel carrier on the side of the vehicle. (Refer to Fig 13).

9.22.6 If the straps have been adjusted correctly the centre of the wheel should locate up against the wheel carrier. With both hands push the wheel upwards to locate the spare wheel onto the wheel studs on the carrier.



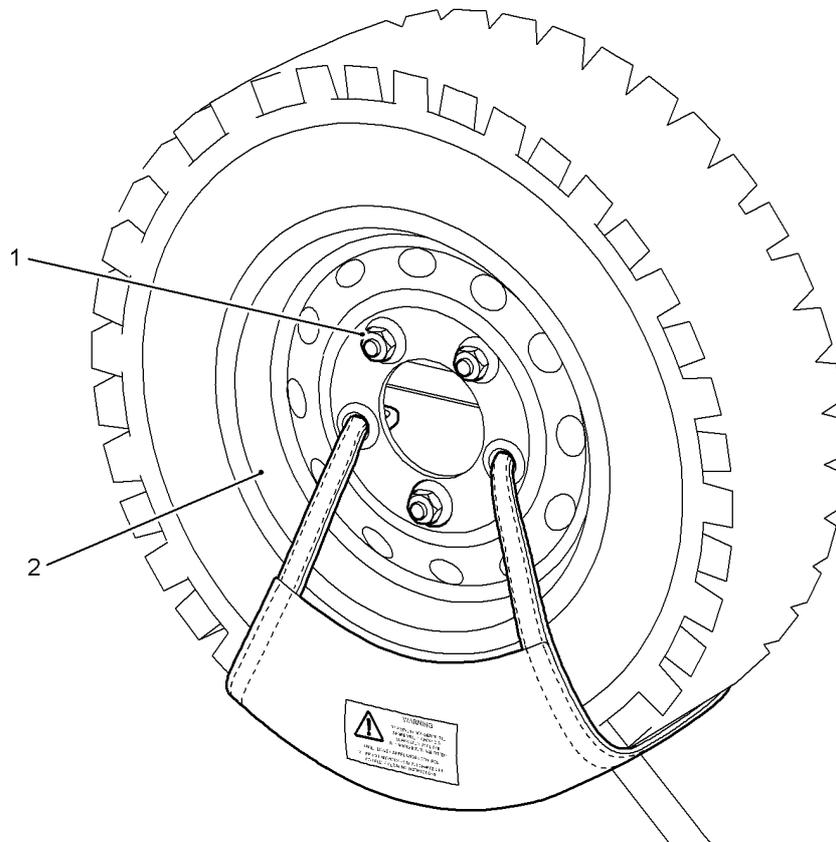
MIL2275

- 1 Adjust straps to correct length
- 2 Rotate wheel up against wheel carrier

- 3 Locate wheel on carrier

Fig 13 Lifting the Spare Wheel

9.22.7 Support the spare wheel in the stowed position while securing the wheel with wheel nuts (item 36). Tighten wheel nuts to 100Nm. (Refer to Fig 14).



MIL2276

1 Wheel nuts x3

2 Spare wheel

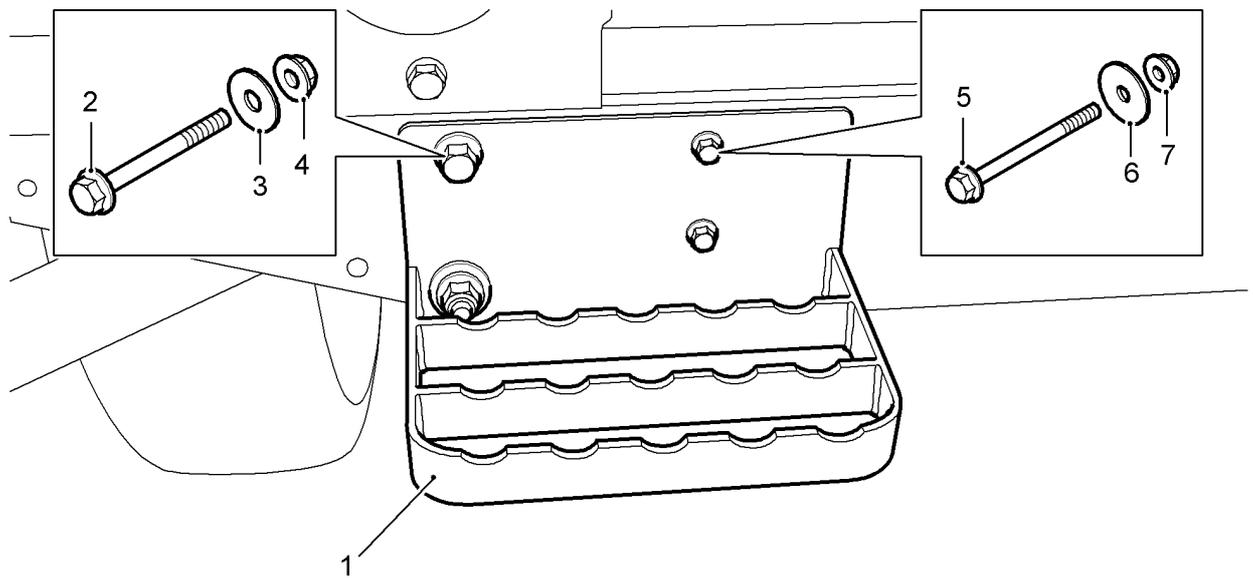
Fig 14 Securing the spare wheel

9.23 Installation of the Rear Step

9.23.1 Remove the four bolts, washers, spring washers and nuts securing the LH Bumperette to the rear of the vehicle.

9.23.2 Secure the rear step (item 12) to the rear crossmember using two M10 bolts (item 13) with large diameter washers (item 14) under the flange nuts (item 15) to the left hand side of the step (Refer to Fig 15).

9.23.3 Install two M8 bolts (item 16) with large diameter washers (item 17) under the flange nuts (item 18) to secure the right hand side of the step (Refer to Fig 15).



MIL2284

- | | | | |
|---|----------------|---|---------------|
| 1 | Rear step | 5 | Bolt M8 x 110 |
| 2 | Bolt M10 x 110 | 6 | Washer M18 |
| 3 | Washer M10 | 7 | Flange Nut M8 |
| 4 | Flange Nut M10 | | |

Fig 15 Fitting the Rear Step

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Installation of Side Hinged Spare Wheel carrier kit - Hard top vehicles

9.24 Carry out the modification as follows.

WARNINGS:

HEALTH AND SAFETY. ENSURE APPROPRIATE CLOTHING AND GOGGLES ARE WORN WHEN DRILLING.

ENSURE THERE IS NOTHING THAT WILL BE DAMAGED BY THE DRILL PASSING THROUGH THE BODYWORK.

NOTE:

During assembly only 'pinch tighten' bolts, on completion when a satisfactory fit has been achieved all fasteners must be fully tightened.

9.25 Removal of existing spare wheel carrier. (Refer to Cat 201 Chap 3-1).

9.25.1 Remove spare wheel lifting aid (refer to Modification Instruction 25) and retain for future use. Also remove the existing side mounted spare wheel carrier and discard. Fit the Blanking plate (item 38) over the redundant aperture and fix in place with fixings (item 39). (Refer to Cat 201 Chap 3-1 Para 88).

9.25.2 Remove the long mirror arm on the side of the spare wheel mount and replace with short mirror arm (item 40). (Refer to Cat 201 Chap 3-1 Para 89).

9.26 Fitting the spare wheel carrier – Door and Side Hinged Tailgate.

9.26.1 Remove the RH side bumperette.

NOTE:

Ensure the holes are in line with the rivets in the capping before drilling as detailed below. It is also necessary to remove the internal nut and bolt holding the roof to the capping to ease the assembly of the upper hinge (Nuts and Bolts) to the capping.

9.26.2 Using a 3mm – 5mm, Drill out the two pop rivets from the RH body capping (Refer to Fig 16 and Fig 17) for location of rivets.

9.26.3 Increase the size of the hole "in the roof panel only" using pilot drill and hole cutter (items 70 and 71) to facilitate the socket required for the M10 Flanged head bolts.

9.26.4 Drill out the holes in the capping to 11mm dia and deburr all holes.

9.26.5 Position the hinge of spare wheel carrier frame assembly (item 54) and fit and secure with two screws (item 60) and nuts (item 61). (Refer to Figs 17 and 19).

NOTES:

(1) To ensure that the wheel carrier fits squarely the upper and lower carrier frame hinges should be in parallel with the door hinges and edge of the lower body.

(2) Feed the top hinge up between the lower edge of the roof and the rear body (against the possible resistance of a foam seal) until the holes line up. If the position of the hinge fouls the door lip adjacent to the door, trim the lip locally to obtain a good fit.

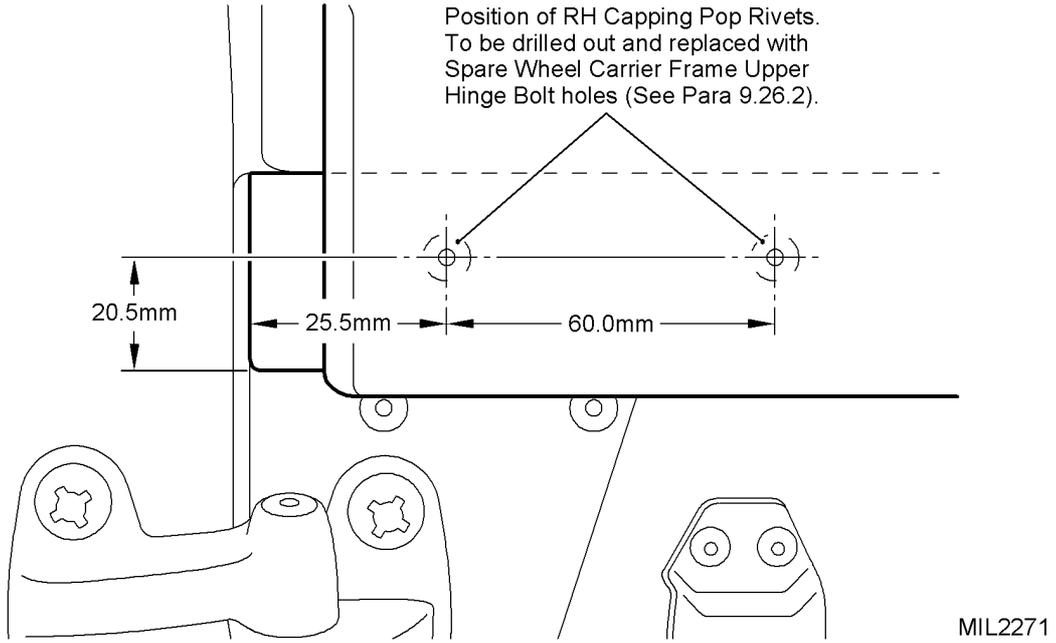
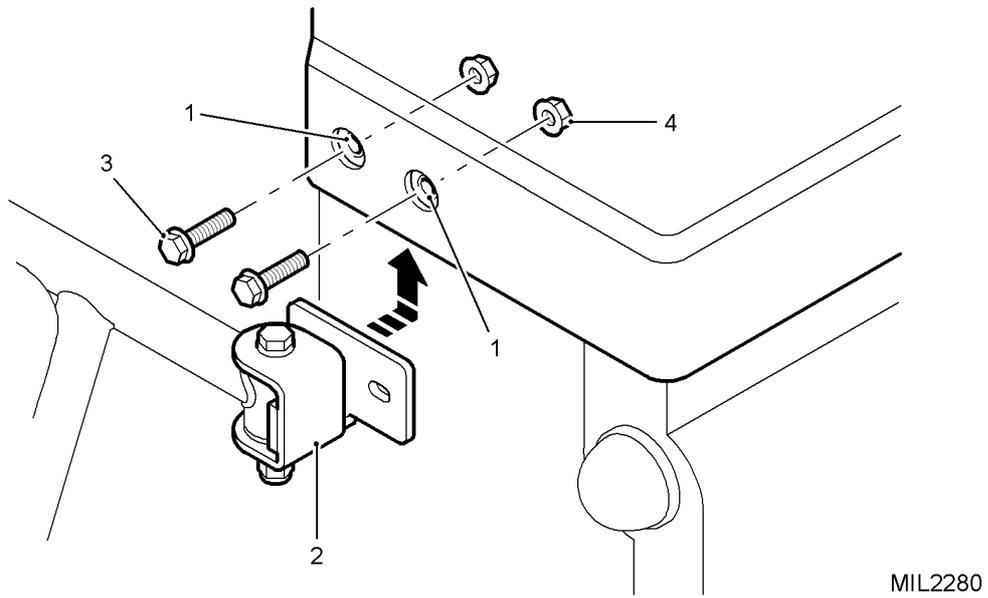


Fig 16 Location of Top Hinge Holes (in line with Capping Rivets)



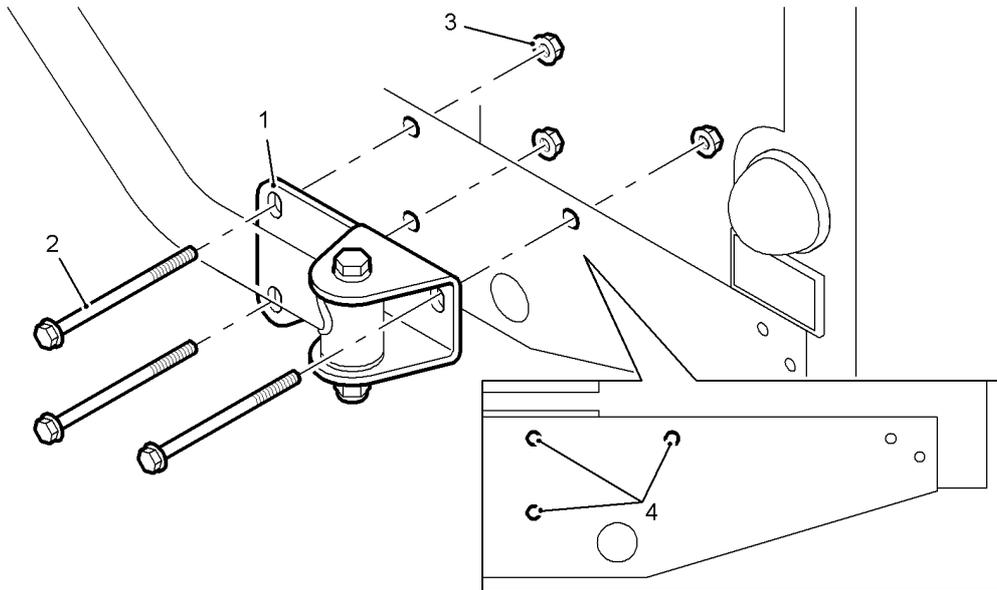
- | | | | |
|---|------------|---|----------------|
| 1 | Pop rivets | 3 | Screw, M10 |
| 2 | Top hinge | 4 | Nyloc nut, M10 |

Fig 17 Top hinge of Swing Away Carrier Frame Complete Assembly

9.26.6 Position the Carrier Frame Assembly's (item 54) bottom hinge on the rear cross member and secure with three bolts (item 62) and nuts (item 63). (Refer to Figs 18 and 19).

NOTE:

To ensure that the wheel carrier fits squarely the upper and lower hinges should be parallel to the edge of the body.

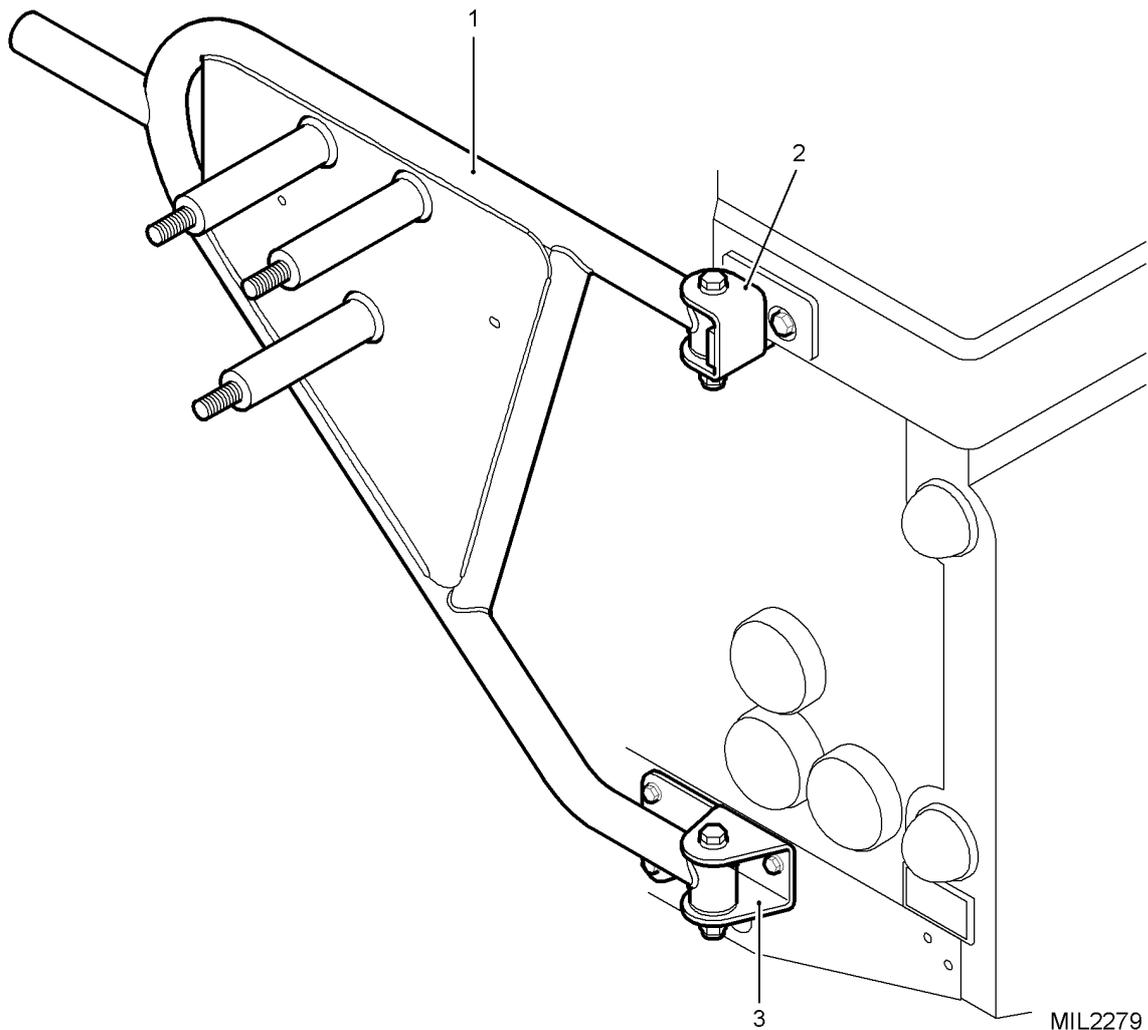


MIL2262

- 1 Bottom hinge
- 2 Bolt, M8

- 3 Nyloc nut, M8
- 4 Fixing holes

Fig 18 Bottom Hinge



- | | | | |
|---|-----------------------------------|---|--------------|
| 1 | Swing away carrier frame assembly | 3 | Bottom hinge |
| 2 | Top hinge | | |

Fig 19 Wheel Carrier Fitting

9.27 Fitting the door stiffening plate.

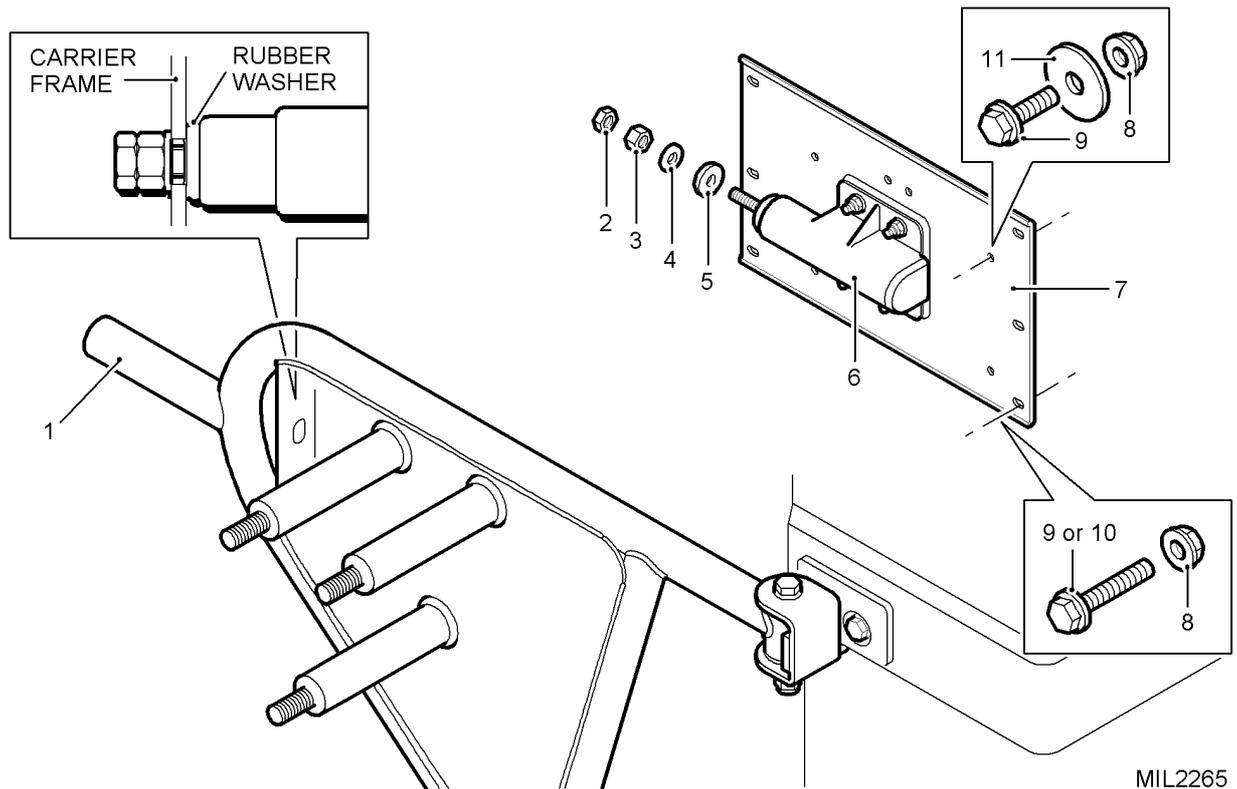
9.27.1 Remove the fixings securing the door interior handle.

9.27.2 Remove all self tapping screws from the rear interior trim panel and then, using a suitable tool, prise out the clips holding the panel to the door frame.

9.27.3 Remove the trim panel.

9.27.4 If the door already has 6 pre drilled holes (Hermes doors) that match up to the slotted holes in the Door Stiffening plate (item 55), and the door has internal reinforcing tubes, secure the stiffening plate to the door using six flange headed bolts (item 64) and flange headed nuts (item 66). If reinforcing tubes are not present in the door, secure stiffening plate to the door using six flange headed bolts (item 65) and flange headed nuts (item 66) (Refer to Fig 20).

9.27.5 If holes are not present in the door, position the door stiffening plate as shown in Appendix A, and use as a template to drill the 4 off 8mm clearance holes, 2 either side of the central box. Fix the stiffening plate in position using four flange headed bolts (item 65), washers (item 69) and nuts (item 66) if required (Refer to Fig 20).



1	Wheel carrier	7	Door stiffening plate
2	Lock nut, M12	8	Flange headed nut M8
3	Nut, M12	9	Flange headed bolt, M8 x 25
4	Washer, M12	10	Flange headed bolt, M8 x 50
5	Rubber washer, M12	11	Washer, M8, 31.75mm OD x 3mm
6	Piston carrier assembly		

Fig 20 Door Plate and Piston Carrier Assembly Fitting

9.27.6 Using the door stiffening plate as a guide drill 2 off 6.5mm holes in the rear door and deburr (Refer to Fig 21). Fix the female door holder rubber mounting bracket (item 70) to the door stiffening plate and door with bolts (item 71), washers (item 72) and nuts (item 73). (Refer to Fig 21).

9.28 Fitting the Piston Carrier Assembly.

- 9.28.1 Install the rubber washer (item 59) onto the shaft of the piston carrier assembly.
- 9.28.2 Open the rear door and wheel carrier together and draw the piston into the slot in the wheel carrier frame.
- 9.28.3 Close the door and carrier, centralise the piston bolt.
- 9.28.4 Fully open the door and check that the piston shaft is still in a central position. If the piston shaft is not central realign the piston carrier assembly on its slotted holes.
- 9.28.5 When the alignment is correct fit washer (item 58) and nut (item 57), tighten the nut until the rubber washer (item 59) is lightly pinched, but capable of upward / downward movement in the slotted hole as the door / tailgate is opened / closed.

NOTE:

Do not over tighten the nut (item 57).

- 9.28.6 Check that the rear door opens and closes correctly, fit locking nut (item 56) and tighten onto nut (item 57).
- 9.28.7 Fully tighten all of the "nipped" fixings holding the carrier to the vehicle. Do not retighten the preset fixings of the Spare Wheel Carrier frame and Stiffener plate.
- 9.28.8 Check that the Door Holder male rubber mounted on the Swing Away Carrier frame and female rubber mounted on the door plate align and that Door Holder operates correctly. (Refer to Fig 21).

NOTE:

The Door Holder male rubber is factory fitted and set up prior to despatch and no further adjustment should be necessary. The Door Holder female rubber fitted in procedure 9.27.6 could require adjustment.

If adjustment is required to reduce door opening angle refer to procedures 9.28.9 and 9.28.10 below.

- 9.28.9 After the final installation is complete, check that the rear door opening angle does not exceed 85°. Indicated when the spare wheel and tyre assemble mounted on the swing away carrier obscures the vehicles R/H tail lights when the rear door is fully open. If adjustment is required, disconnect the swing away carrier from the door plate assembly at the piston, swing the carrier out independently of the rear door to gain access to the bracket adjustment bolts. (Refer to Fig 21).
- 9.28.10 To adjust the bracket loosen the two M6 nuts on the inside of the rear door and adjust the bracket as required. Re-tighten fixings. (Refer to Fig 22).

NOTE:

Moving the bracket towards the right hand side of the vehicle (when viewed from behind the vehicle) will reduce the opening angle of the door. Reconnect the swing away frame to the door at the piston assembly and check the opening angle. Adjust either way as required to obtain the maximum opening angle of 85°.

- 9.28.11 Refit the interior trim panel, lock cover and interior handle to the door and the bolt, washers and nut which secures the RH roof panel to the lower body.

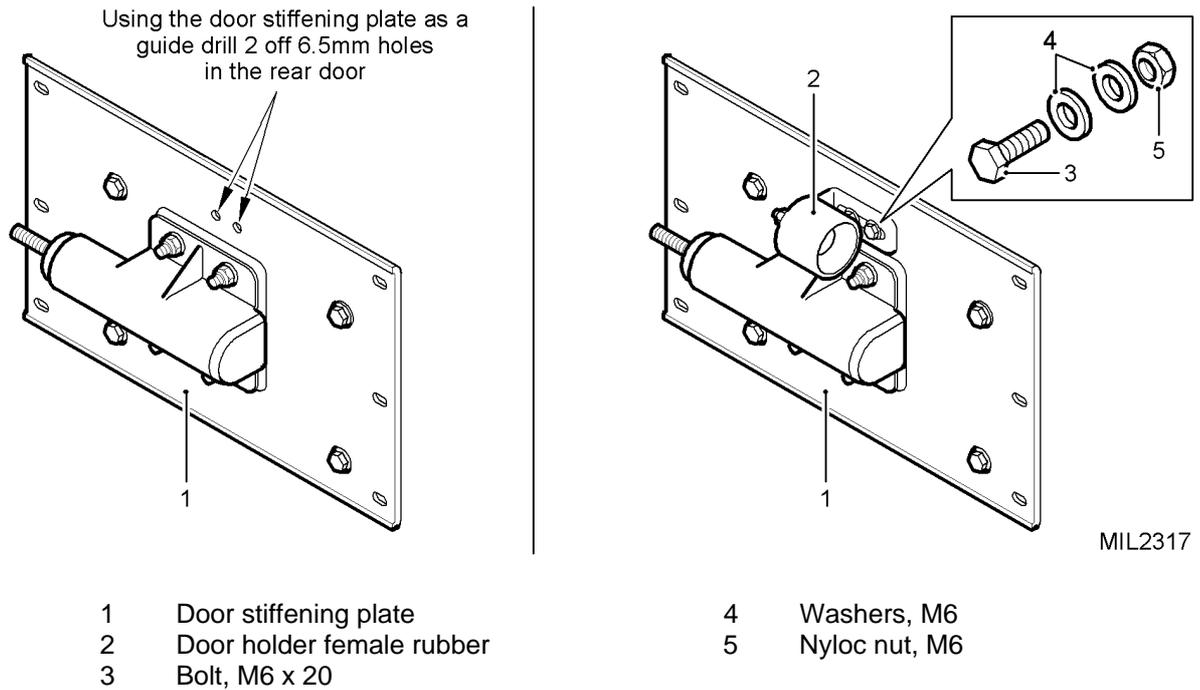
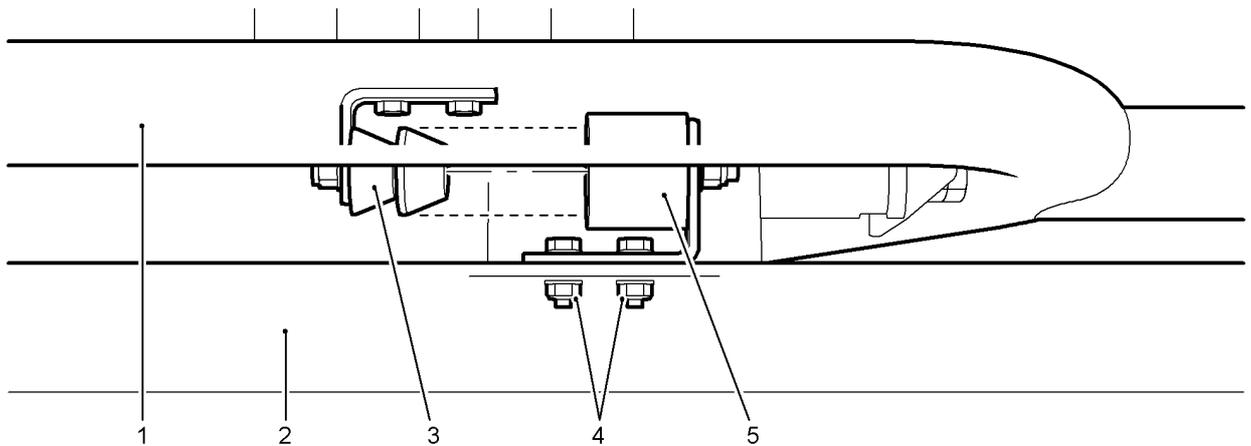


Fig 21 Door Holder Female Rubber Installation



Note: Swing Away Carrier viewed from above

MIL2318

Fig 22 Door Holder Rubber Alignment

9.29 Fitting the Spare Wheel Lifting Aid.

NOTE:

Before refitting inspect the Spare Wheel Lifting Aid for excess wear or damage. If necessary, demand and fit a new Spare Wheel Lifting Aid.

9.29.1 If necessary drill two 8.5mm dia holes in the spare wheel carrier as shown in Fig 23 and deburr.

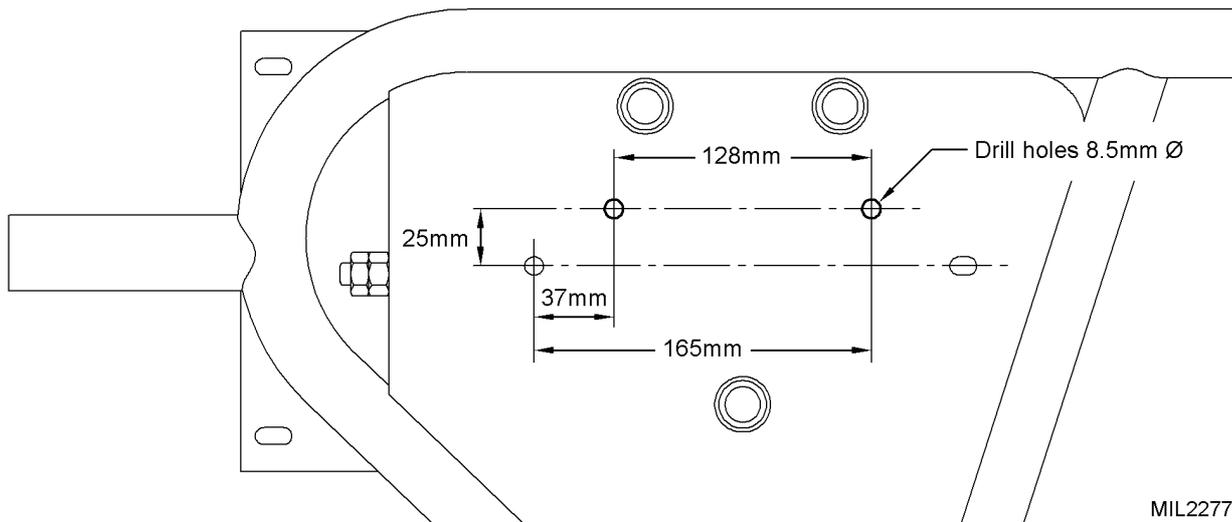
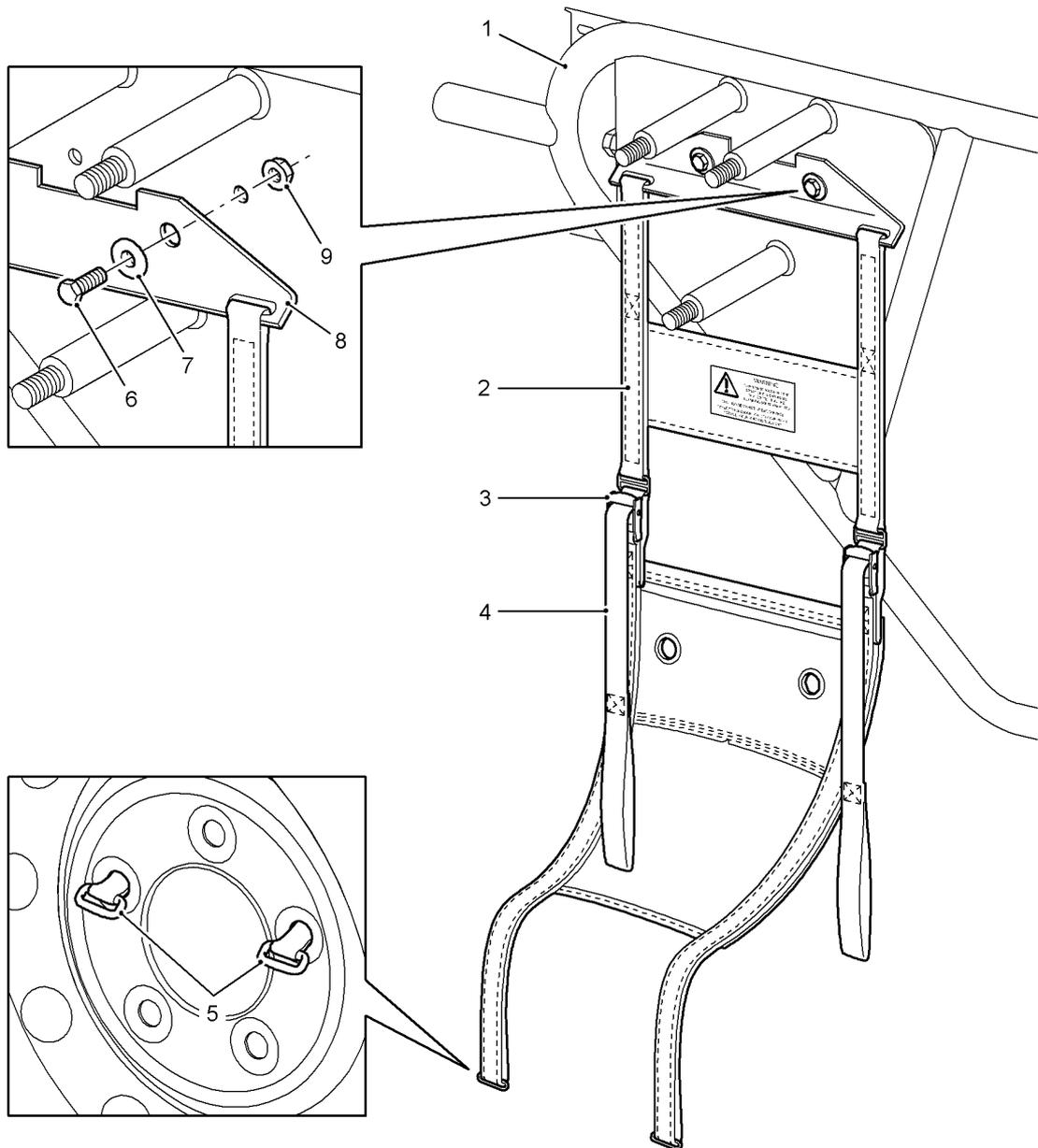


Fig 23 Drilling Spare Wheel Carrier

9.29.2 Secure the Spare Wheel Lifting Aid to the spare wheel carrier with two screws (item 52) and if necessary stepped washers (item 51) installed from the front of the bracket and secured with nuts (item 53) from the behind the spare wheel carrier. (Refer to Fig 24).



MIL2281

- | | | | |
|---|---------------------|---|----------------|
| 1 | Spare wheel carrier | 6 | Screw |
| 3 | Harness | 7 | Stepped washer |
| 3 | Adjustment cleats | 8 | Bracket |
| 4 | Adjustment straps | 9 | Nut |
| 5 | Harness stops | | |

Fig 24 Spare Wheel Lifting Aid

9.30 Fitting the Wheel on to the carrier.

9.30.1 Remove the tyre inflation valve extension from the wheel. (Refer to Modification Instruction 6).

9.30.2 With the harness hanging down from the wheel carrier push the plastic stops and straps through the wheel stud holes from the front of the wheel. (Refer to Fig 24).

NOTE:

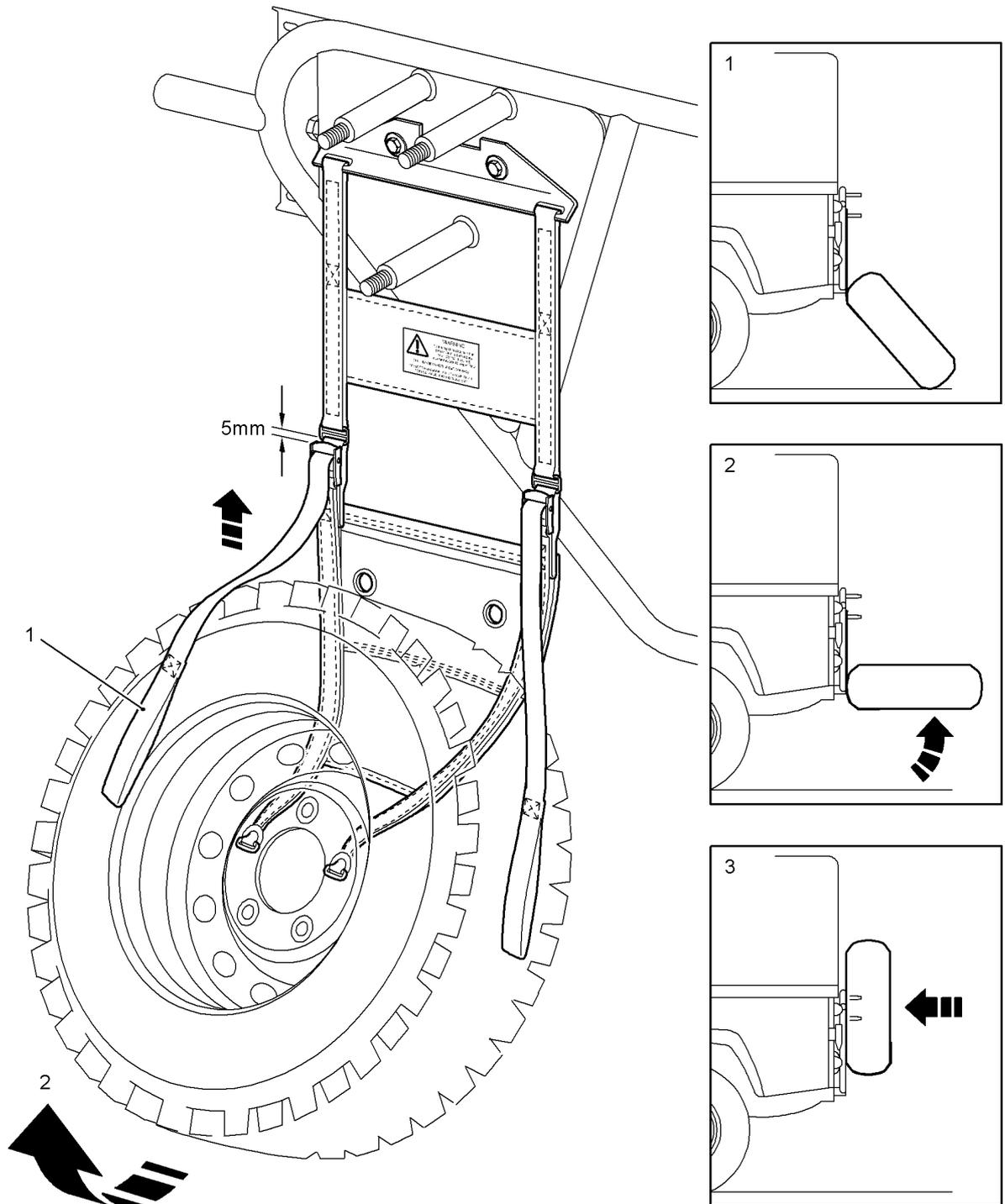
The plastic stops should be one wheel stud hole apart.

9.30.3 Adjust the straps fully against the metal buckles and then back them off by approximately 5mm. (Refer to Fig 25).

9.30.4 Stow the excess straps in the bag in the centre of the harness assembly.

9.30.5 Take hold of the spare wheel with both hands and lift the lower edge of the spare wheel and rotate wheel so that the centre of the wheel locates up against the wheel carrier on the side of the vehicle. (Refer to Fig 25).

9.30.6 If the straps have been adjusted correctly the centre of the wheel should locate up against the wheel carrier. With both hands push the wheel upwards to locate the spare wheel onto the wheel studs on the carrier.



MIL2282

- 1 Adjust straps to correct length
- 2 Rotate wheel up against wheel carrier

- 3 Locate wheel on carrier

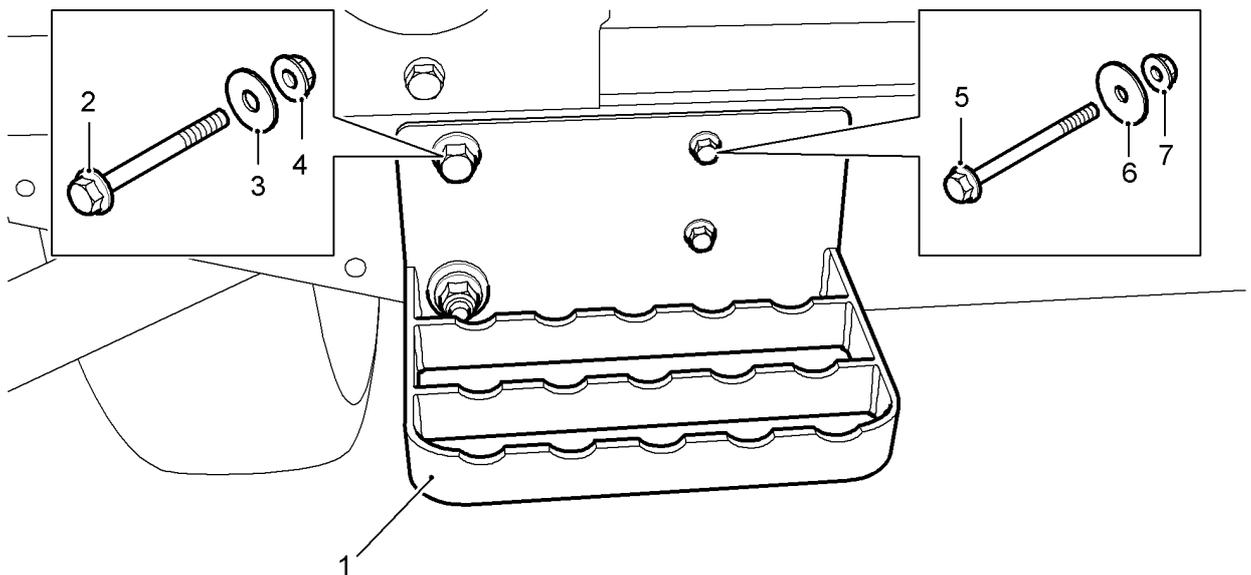
Fig 25 Lifting the Spare Wheel

9.31 Installation of the Rear Step

9.31.1 Remove the four bolts, washers, spring washers and nuts securing the LH Bumperette to the rear of the vehicle.

9.31.2 Secure the rear step (item 41) to the rear crossmember using two M10 bolts (item 42) with large diameter washers (item 43) under the flange nuts (item 44) to the left hand side of the step (Refer to Fig 27).

9.31.3 Install two M8 bolts (item 45) with large diameter washers (item 46) under the flange nuts (item 47) to secure the right hand side of the step (Refer to Fig 27).



MIL2284

- | | | | |
|---|----------------|---|---------------|
| 1 | Rear step | 5 | Bolt M8 x 110 |
| 2 | Bolt M10 x 110 | 6 | Washer M18 |
| 3 | Washer M10 | 7 | Flange Nut M8 |
| 4 | Flange Nut M10 | | |

Fig 27 Fitting the Rear Step

Modification of rear lamp locations

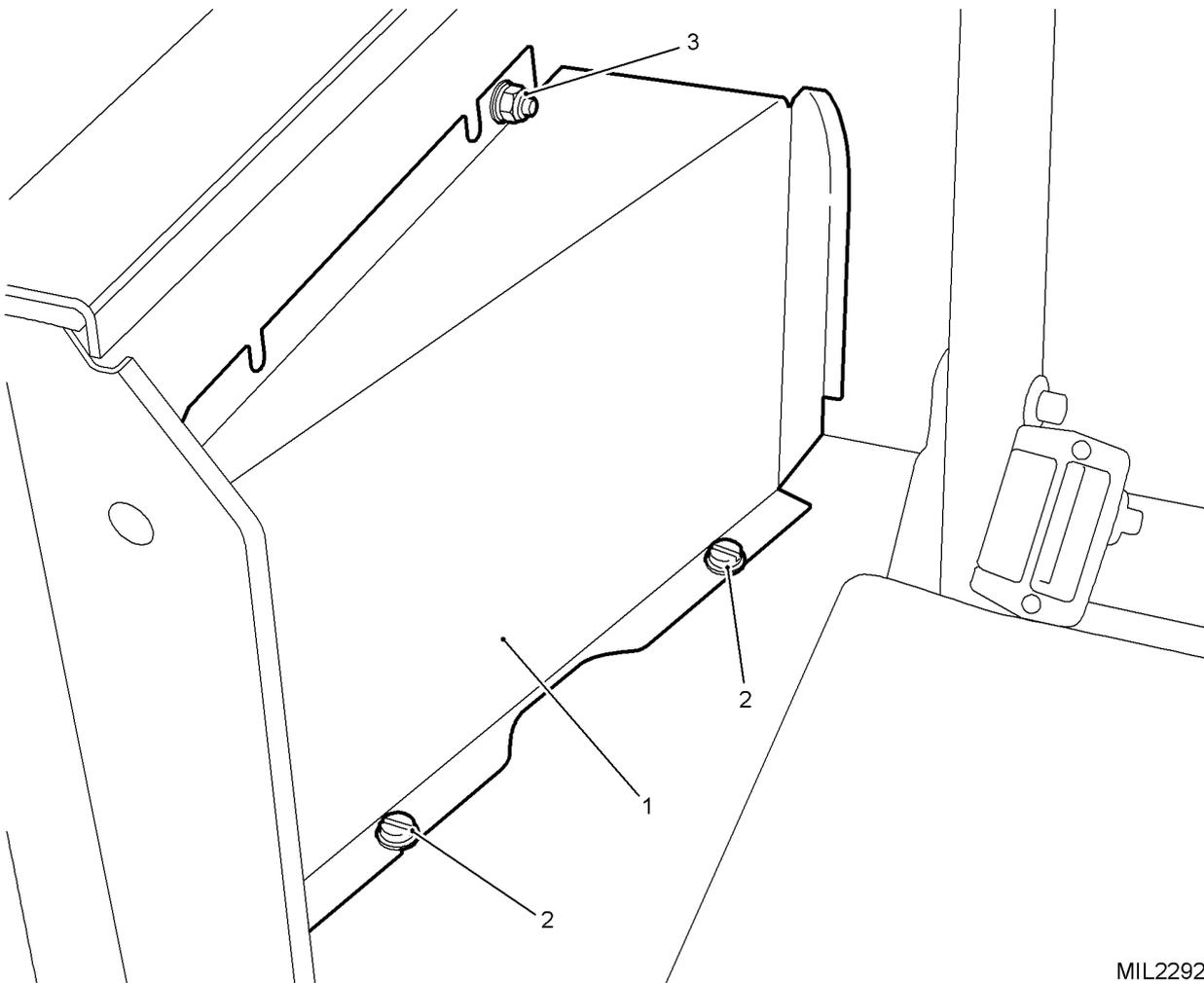
9.32 Carry out the modification as follows.

WARNINGS:

HEALTH AND SAFETY. ENSURE APPROPRIATE CLOTHING AND GOGGLES ARE WORN WHEN DRILLING.

ENSURE THERE IS NOTHING THAT WILL BE DAMAGED BY THE DRILL PASSING THROUGH THE BODYWORK.

9.32.1 Remove the self tapping screws and the nuts, spring washers and plain washers securing the lamp cover panels inside the rear of the vehicle. Refer to Figure 28.



MIL2292

1 Lamp cover panel
2 Self tapping screw and washer

3 Nut, spring washer and washer

Fig 28 Lamp cover panel removal

9.32.2 Remove screws securing the tail lamp and stop lamp assemblies to the rear of the vehicle. Refer to Figure 29.

9.32.3 Disconnect the multi-plugs from the bulb holders.

9.32.4 Position combined side/brake lamp assembly (item 19 or 48) to the rear of the vehicle and secure with two screws. Refer to Figure 33.

9.32.5 Connect the original stop lamp multi-plug to the corresponding socket on the harness assembly (item 21 or 50). Refer to Figure 30.

9.32.6 Feed the red and black wires and the socket of the harness assembly through the grommet and connect to the original side lamp multi-plug.

9.32.7 Insert the three pin multi-plug fitted to the cable assembly in to the combined side/brake lamp (item 19 or 48).

Indicator Removal

9.32.8 Remove the two screws securing the rear indicator lamp unit to the mounted plinth.

9.32.9 Disconnect the multi-plug from the indicator lamp bulb holder. Retain the indicator lamp unit for refitting.

9.32.10 Remove the two screws securing the mounted plinth to the vehicle and remove plinth. Retain the plinth for refitting.

Indicator lamp plinth modification

9.32.11 Turn the mounting plinth over to the rear and remove the small locating spigot from the plinth.

9.32.12 Using one of the lamps removed (tail or brake lamp) as a template cut 2 to 3 strips of Gaffer tape 20mm wide x 132mm long and wrap the individual strips around the base of the removed tail lamp until it can still be inserted into the hole at the rear of the plinth but without excess side to side movement. Refer to Figure 31.

9.32.13 Place the assembly of the plinth/side lamp onto a firm surface and line up the holes in the side lamp with the small lamp retaining holes in the plinth. Refer to Figure 31.

9.32.14 Using a 3mm drill gently insert the drill through the holes in the front of the side lamp and drill vertically down through the rear face of the indicator plinth.

Or alternatively

9.32.15 Turn the mounting plinth over to the rear and remove the small locating spigot from the plinth.

9.32.16 Turn the indicator plinth onto its face and scribe a line on the rear face that is in line with the indicator fixing holes, (in the front face). Scribe a second line at 90 degrees to first, 3mm inboard of the large hole. Refer to Figure 32.

9.32.17 Carefully drill two 3mm holes through the mounting plinth.

Indicator Fitting

9.32.18 Position the indicator mounting plinth to its new position on the rear of the vehicle and secure with the two screws that secured the removed taillight. Refer to Figure 33.

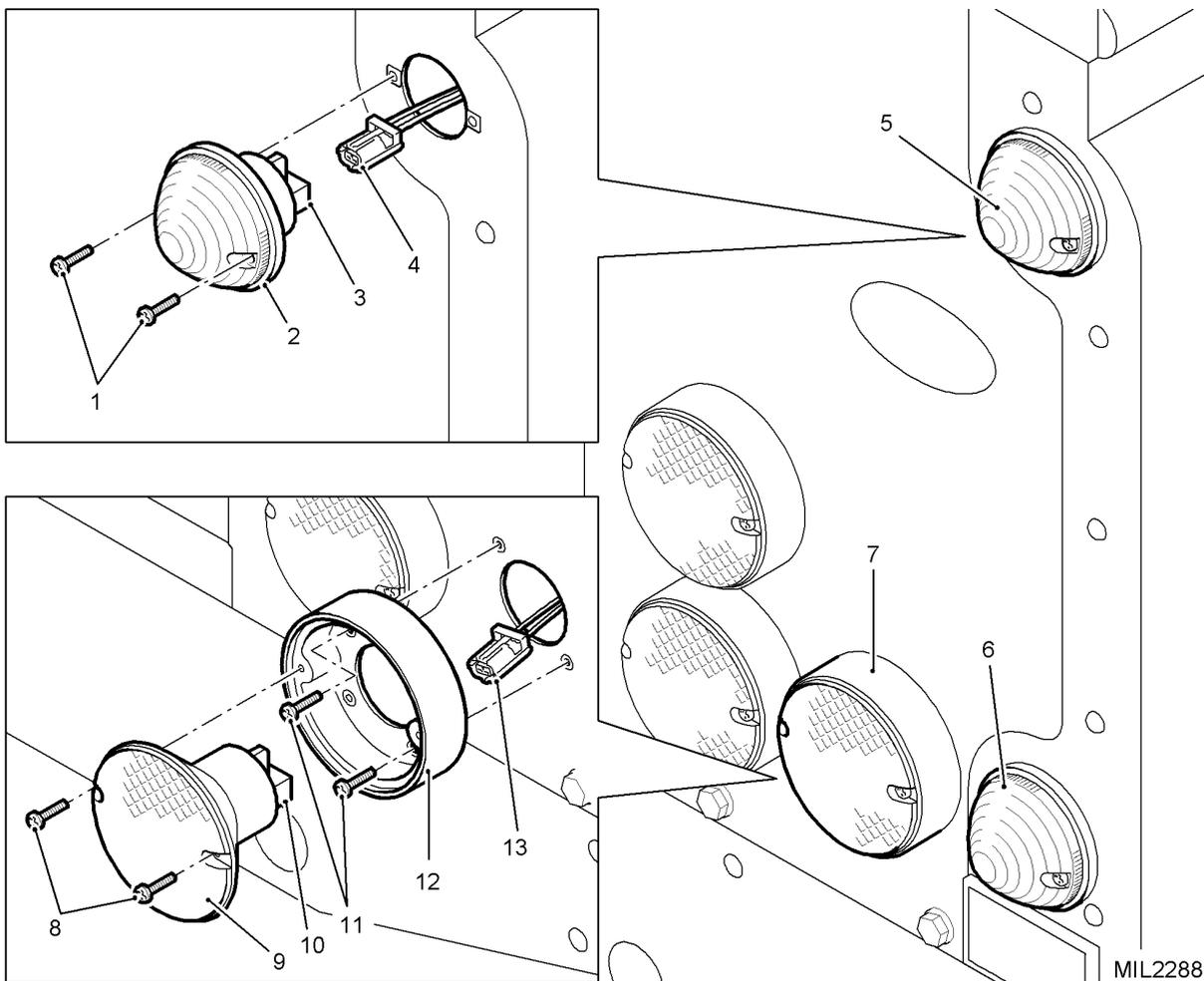
9.32.19 Remove bulb holder from rear of indicator lamp and insert bulb (item 20 or 49), refit bulb holder.

9.32.20 Insert harness plug in to indicator lamp.

9.32.21 Install Indicator lamp unit to plinth secure with two screws previously removed.

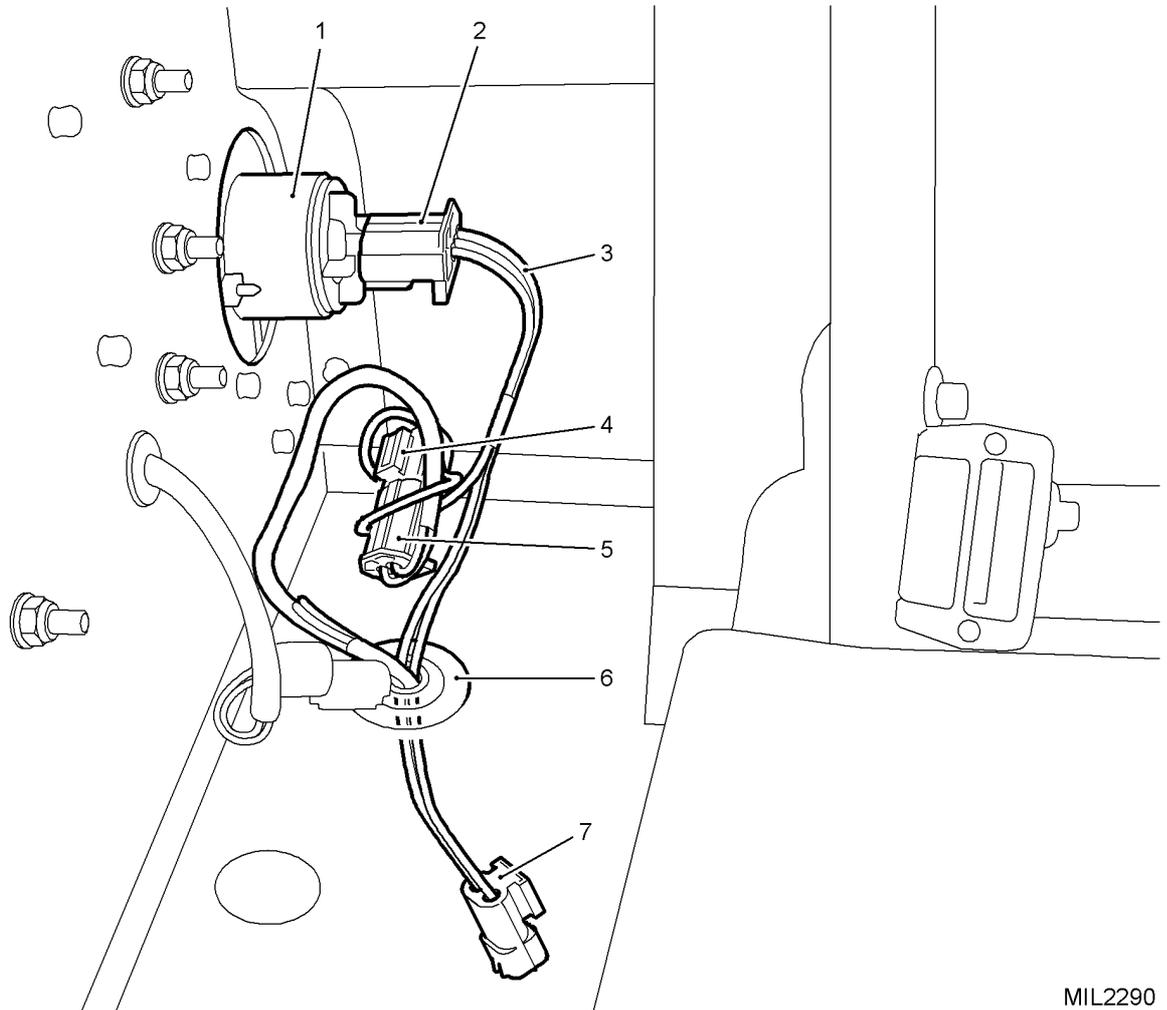
9.32.22 Refit the lamp cover panels, secure the panels with self tapping screws along the bottom lip and nuts, spring washers and plain washers at the top. Refer to Figure 28.

9.32.23 Insert grommets (item 37 or 68) into the original indicator positions and install screws to blank the original fixing holes.



- | | | | |
|---|----------------|----|-----------------|
| 1 | Screws | 8 | Screws |
| 2 | Lens | 9 | Lens |
| 3 | Bulb holder | 10 | Bulb holder |
| 4 | Multi-plug | 11 | Screws |
| 5 | Tail lamp | 12 | Mounting plinth |
| 6 | Brake lamp | 13 | Multi-plug |
| 7 | Indicator lamp | | |

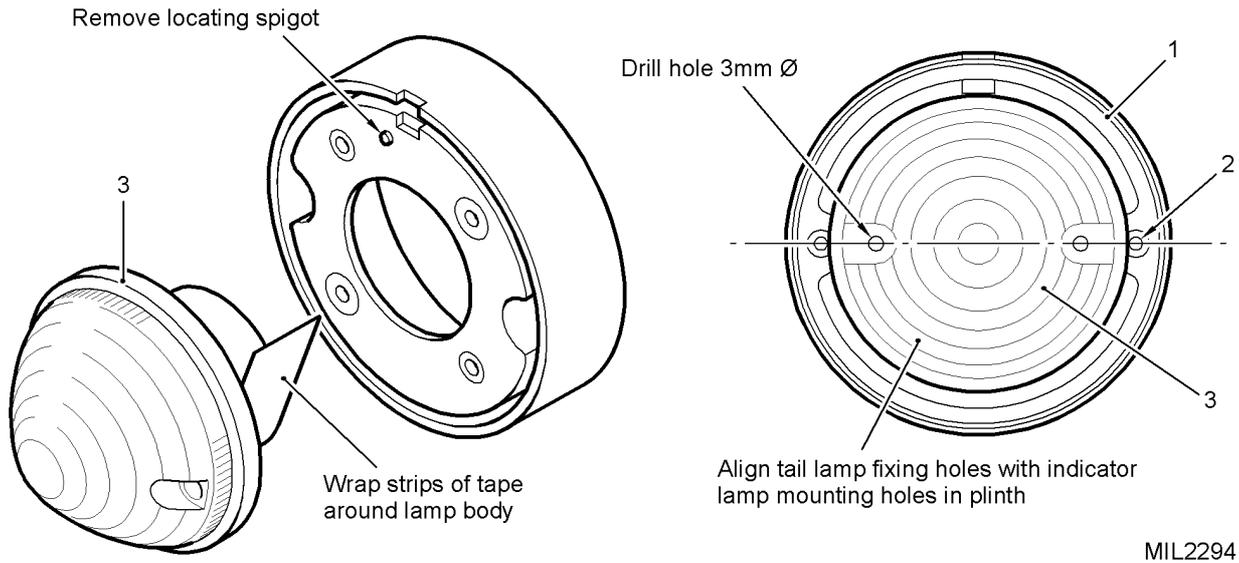
Fig 29 Lamp removal



MIL2290

- | | | | |
|---|------------------------------|---|------------------|
| 1 | Combined tail and brake lamp | 5 | Original |
| 2 | 3 pin multi-plug | 6 | Grommet |
| 3 | Harness assembly | 7 | Tail lamp Socket |
| 4 | Brake lamp socket | | |

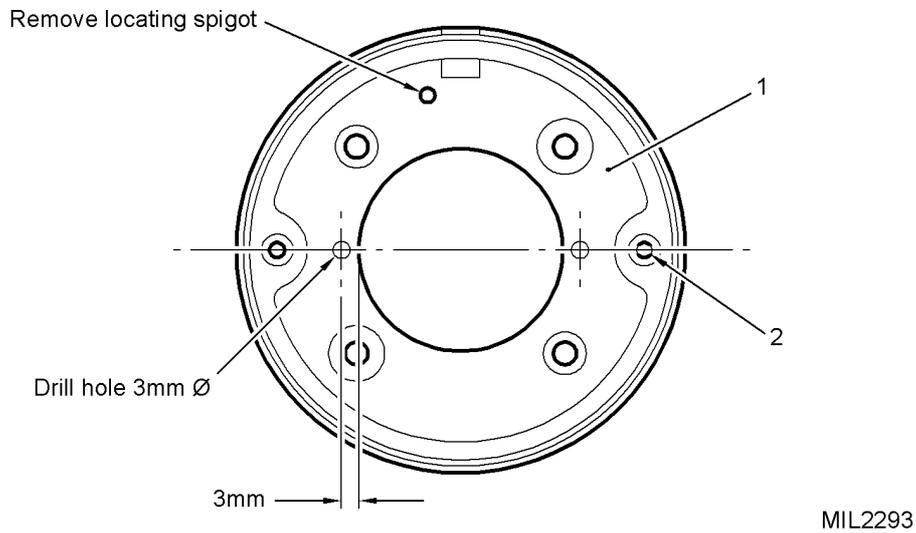
Fig 30 Harness installation



- 1 Indicator mounting plinth
- 2 Indicator lamp fixing hole

- 3 Tail or brake lamp

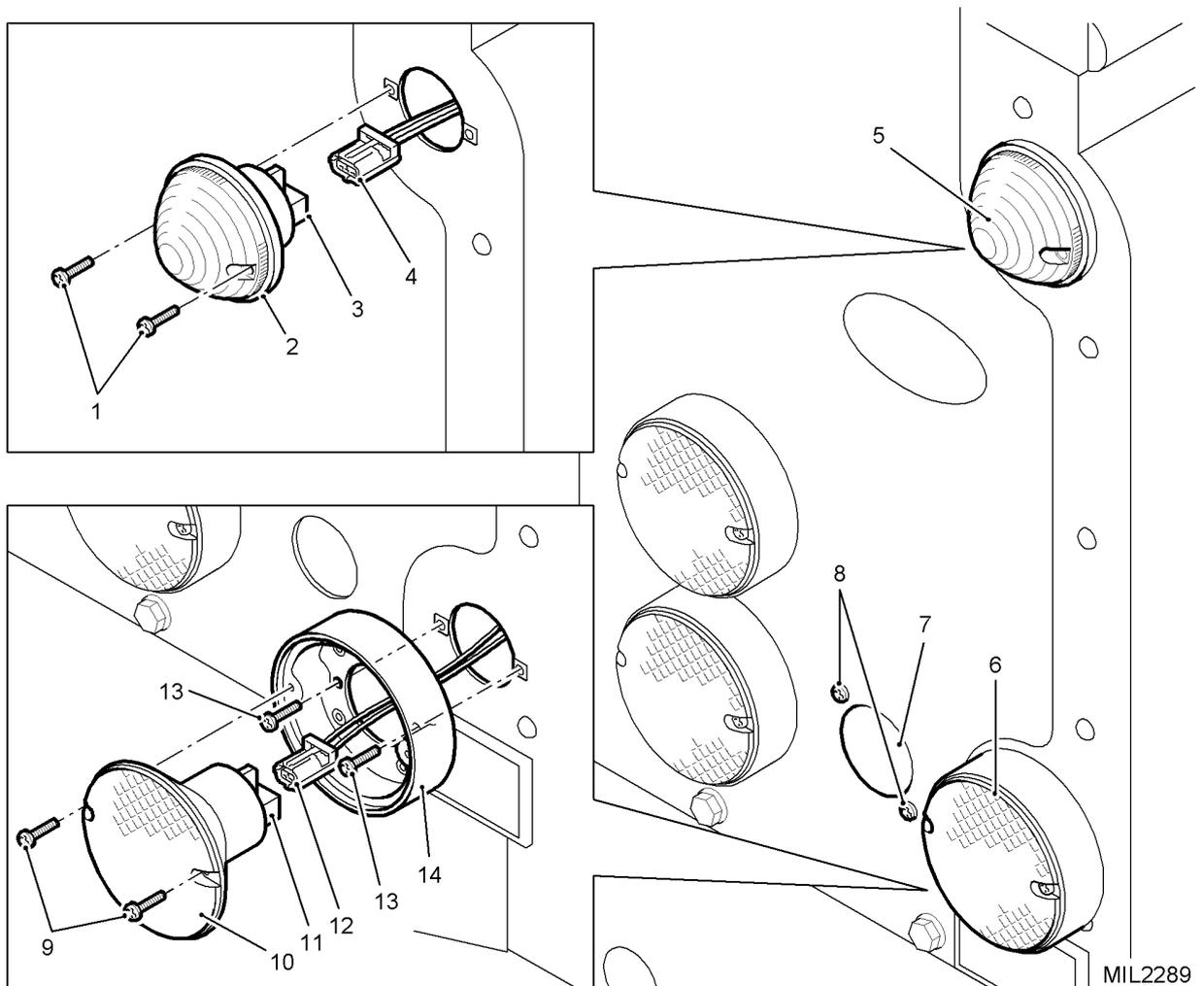
Fig 31 Indicator Plinth Drilling – Viewed from the rear



- 1 Indicator plinth

- 2 Indicator lens mounting fixing hole

Fig 32 Indicator Plinth Drilling – Viewed from the rear



MIL2289

- | | | | |
|---|------------------------------|----|-------------|
| 1 | Screws | 8 | Screw |
| 2 | Lens | 9 | Screw |
| 3 | Bulb holder | 10 | Lens |
| 4 | Multi-plug – 3 pin | 11 | Bulb holder |
| 5 | Combined tail and brake lamp | 12 | Multi-plug |
| 6 | Indicator lamp | 13 | Screw |
| 7 | Grommet | 14 | Plinth |

Fig 33 Lamp installation

TESTING AFTER EMBODIMENT

10 Test for correct operation of all exterior vehicle lamps.

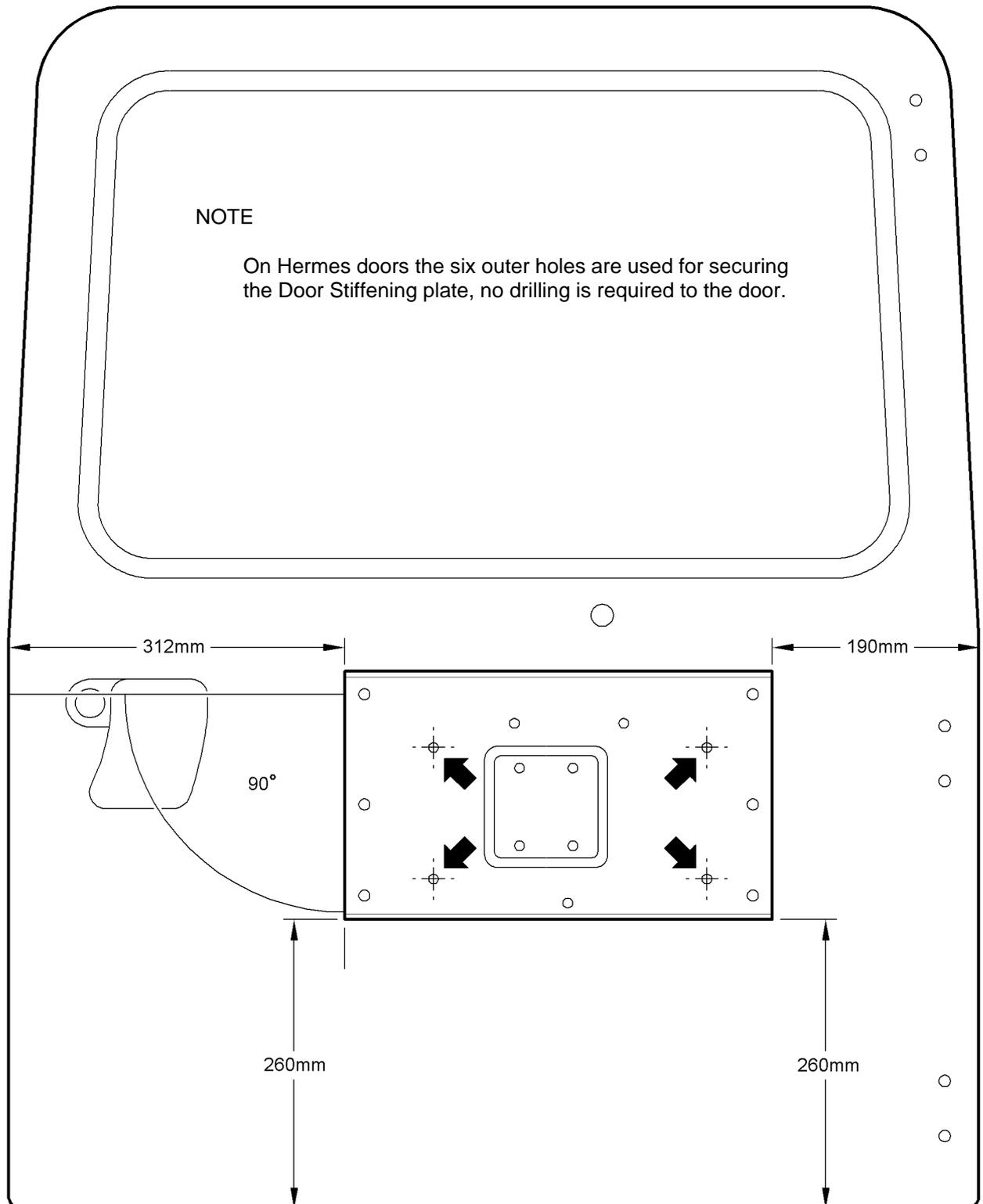
EFFECT ON WEIGHT

11 Negligible.

PUBLICATION AMENDMENTS

12 Nil.

APPENDIX A TO 2320-D-128-811 MODIFICATION INSTRUCTION 42



MIL2272

TRUCK UTILITY MEDIUM (TUM) HS

MODIFICATION INSTRUCTION NO. 43

Sponsor: OSVP PT
Project No.:
File Ref:

Publication Authority: OSVP PT, Abbey Wood

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Removal of battery box and fitting of a rear facing seat and on winter water vehicles the removal or rear compartment radiators and modification to the fitting of the raised air intake.

INTRODUCTION

- 1 This instruction details the conversion of a Land Rover TUM (HS) FFR to a 'Scout' specification.
 - 1.1 Limitations on use of equipment. Nil

APPLICABILITY

- 2 Only vehicles as authorised by Army HQ are to be used for this conversion.

REASON FOR MODIFICATION

- 3 Code 2 - to improve operational performance.

PRIORITY

- 4 Army: Routine.
RAF: Class 3.

ESTIMATED TIME REQUIRED

- 5 Embodiment: 2.25 man hrs.

MODIFICATION IMPLEMENTATION PLAN

6

- 6.1 This modification is to be implemented by:

- 6.1.1 ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.

6.1.2 RAF - Units not later than the next routine maintenance and Vehicle Depots before next issue of vehicle.

6.2 Associated modification instructions. Nil.

6.3 Modification plate strike action. N/A.

Action required by

7

7.1 Units and establishment holding equipment.

7.1.1 Examine JAMES/Vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary units with level 2 REME support demand the stores required.

7.1.3 Upon the embodiment of equipment, units are to record the modification subject and AESP Number in JAMES/Equipment documents.

7.1.4 RAF – Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADPMTMS job certification sheet and to follow the procedures laid down in AP 100C - 08A.

7.2 Army units authorised to carry out levels 2, 3 and 4 maintenance and RAF units.

7.2.1 ARMY – When requested by users or during overhaul of equipment on charge without REME level 2 support, obtain the items listed in Para. 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.3 All receipts of this instruction. Add particulars to AESP ref. 2320-D128-811 Mod instr. index.

Stores tools and equipment

NOTE

Items not codified, if required, should be demanded using the manufacturer's part numbers through the normal system.

8

8.1 Stores to be demanded.

8.1.1 The following set is to be demanded quoting this instruction as authority.

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
			Rear Seat Kit (Auxiliary Parts)	1
			(Comprising)	
1			Base frame	(1)
2		2540-99-510-5858	Seat	(1)
3			Spreader plate	(1)
4			Bracket, left hand	(1)
5			Bracket, right hand	(1)
6		2540-99-399-8279	Safety harness, c/w fittings	(1)
7			Screw, M8	(8)
8			Screw, M8	(4)
9			Washer, M8	(12)
10			Spacer	(4)
11			Nut, nyloc M8	(4)
12			Nut plate	(2)
13			Rivet, nut plate	(2)
			Raised air intake (Auxiliary Parts)	1
			(Comprising)	
14			Top bracket	(1)
15			Bottom bracket	(1)
16			Clamp	(2)
17			Screw, M8	(6)
18			Nut, nyloc M8	(4)

Sequence of operations

NOTE

The item numbers in Para 8 are used as references throughout this instruction.

WARNINGS

HEALTH AND SAFETY. ENSURE APPROPRIATE CLOTHING AND GOGGLES ARE WORN WHEN DRILLING.

ENSURE THERE IS NOTHING THAT WILL BE DAMAGED BY THE DRILL PASSING THROUGH THE BODYWORK.

9 Carry out the modification as follows:

Removal of radio table and battery box

- 9.1 Remove the radio batteries (refer to 2320-D-128-522, Chapter 13-2, Para 3).
- 9.2 Disconnect the earth straps from the table.
- 9.3 Remove the screws, spring washers and plain washers securing the battery box and table assembly to the nut plates mounted to the vehicle floor.
- 9.4 Remove the battery box and table assembly from the vehicle.
- 9.5 Remove the screws securing the nut plates to the vehicle floor.

Installing the base frame and seat

- 9.6 Position the base frame (Item 1) on the vehicle floor, 90mm behind the rear bulkhead and 65mm inboard of the bodyside.
- 9.7 Mark the position of the three base frame rails on the matting, if fitted.
- 9.8 Cut the matting to accept the base frame rails.
- 9.9 Mark the position of the four holes on the floor using the base frame as a template. (Refer to Fig 1).

WARNING

ENSURE THERE IS NOTHING THAT WILL BE DAMAGED BY THE DRILL PASSING THROUGH THE BODYWORK.

- 9.10 Drill four holes 8.5mm dia and deburr.

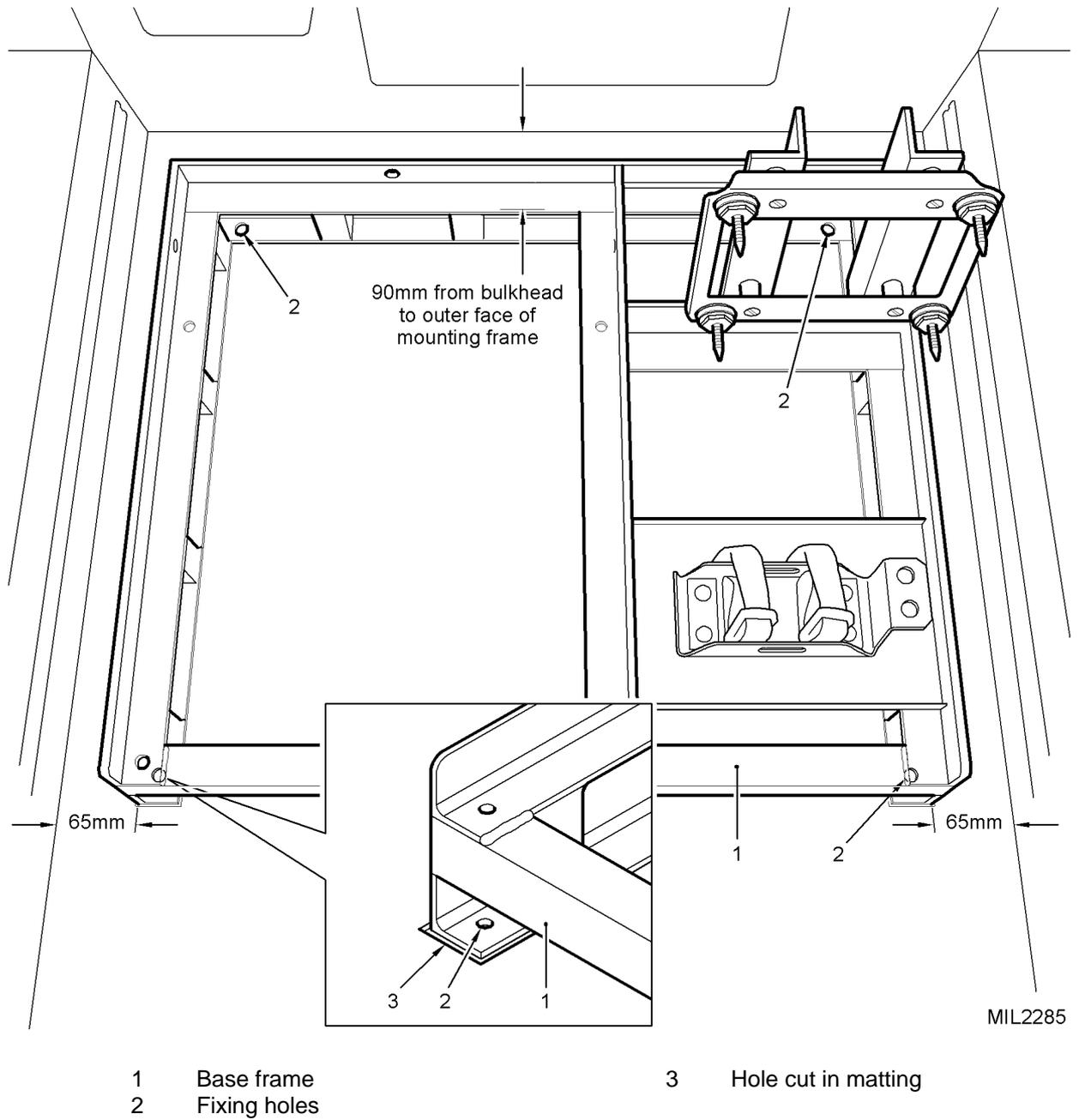
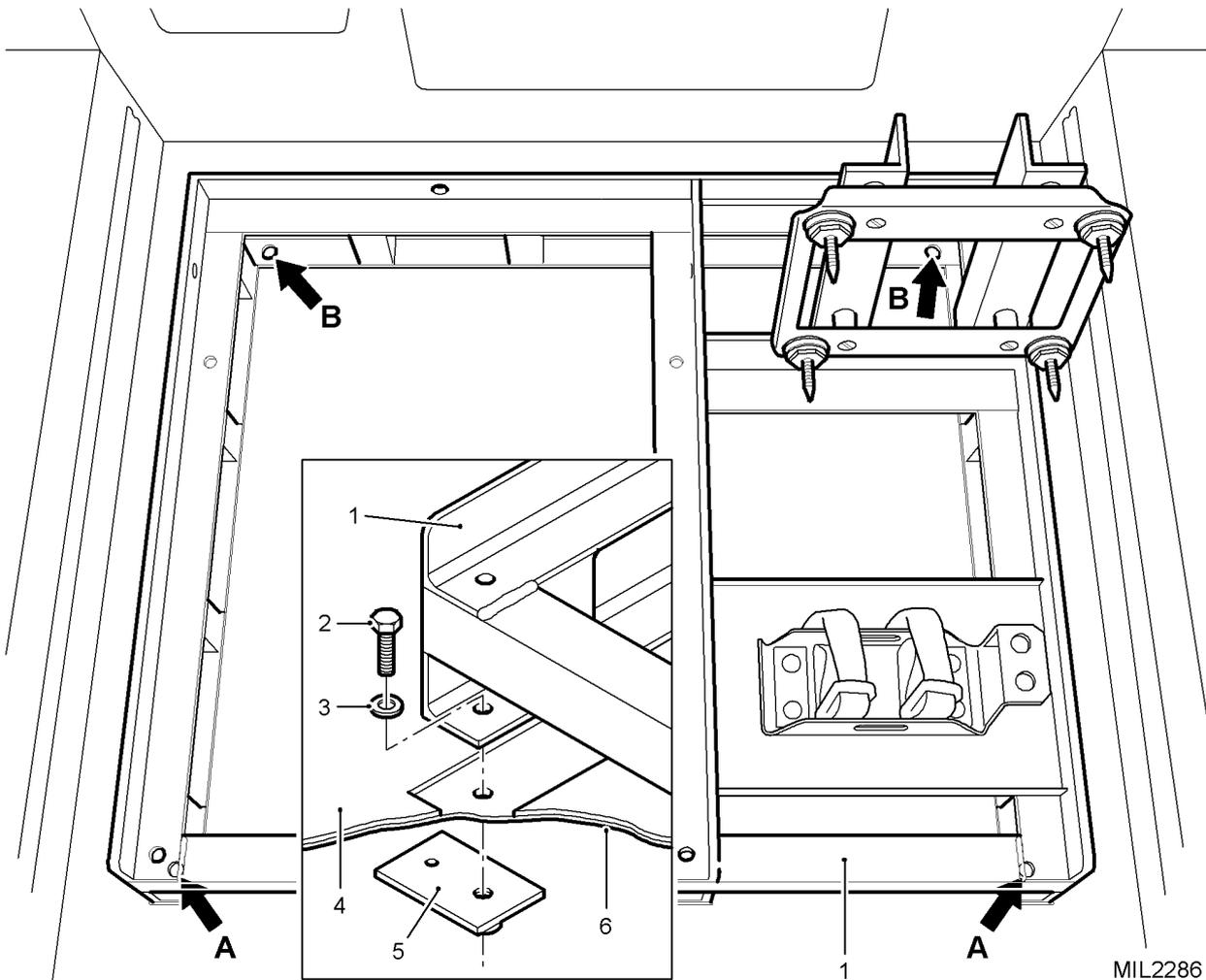


Fig 1 Floor drilling and preparation



MIL2286

- | | | | |
|---|----------------|---|--------------------------------------|
| 1 | Base frame | 4 | Matting (section through, if fitted) |
| 2 | Screw, M8 x ?? | 5 | Nut plate |
| 3 | Washer, M8 | 6 | Floor (section through) |

Fig 2 Installing the base frame

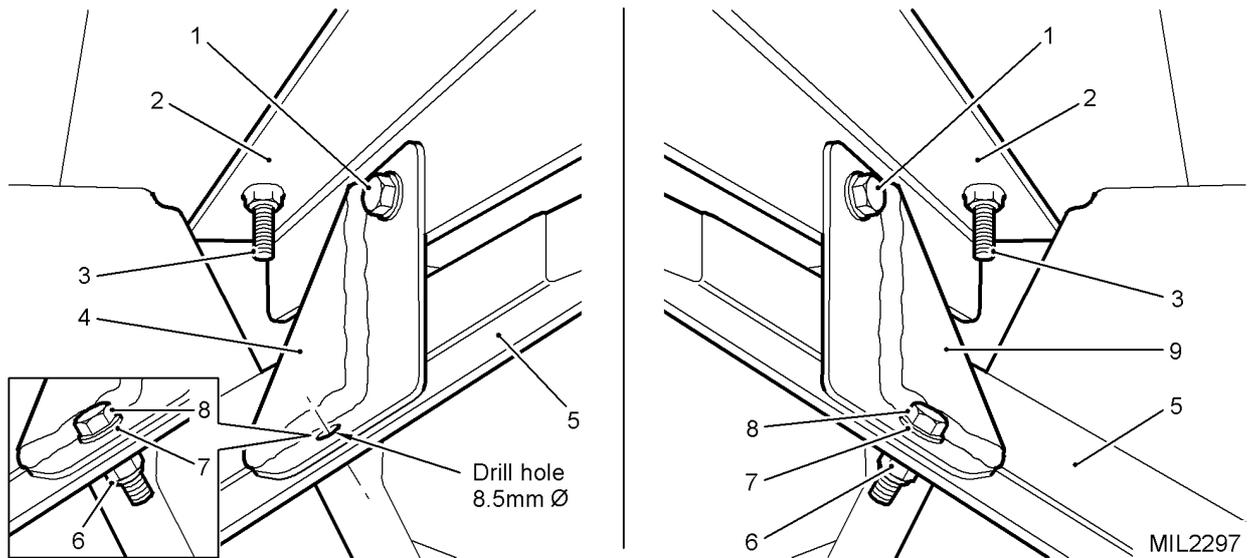
9.11 Position base frame (Item 1) on vehicle floor and secure with two screws (Item 7), washers (Item 9) and nut plates (Item 12) at positions arrowed 'A' in Figure 2. Tighten fixings to xxNm.

9.12 From under the vehicle align the spreader plate (Item 3) with the holes arrowed 'B' in Figure 2 secure with screws (Item 7) and washers (Item 9). (Refer to Fig 3). Tighten screws to xxNm.

9.13 Attach the left and right hand brackets (Items 4 and 5) to the spreader plate with screws (Item 7), washers (Item 9) and nuts (Item 11).

9.14 Using the holes in the brackets as a guide drill 8.5 mm holes in the existing left and right braces. (Refer to Fig 3).

9.15 Attach the brackets to the braces with screws (Item 7), washers (Item 9) and nuts (Item 11). Tighten fixings to xxNm.



- 1 Screw, washer and nut
- 2 Spreader plate
- 3 Base frame securing screw
- 4 Bracket – left hand
- 5 Existing brace

- 6 Nut
- 7 Washer
- 8 Screw
- 9 Bracket – right hand

Fig 3 Spreader plate installation

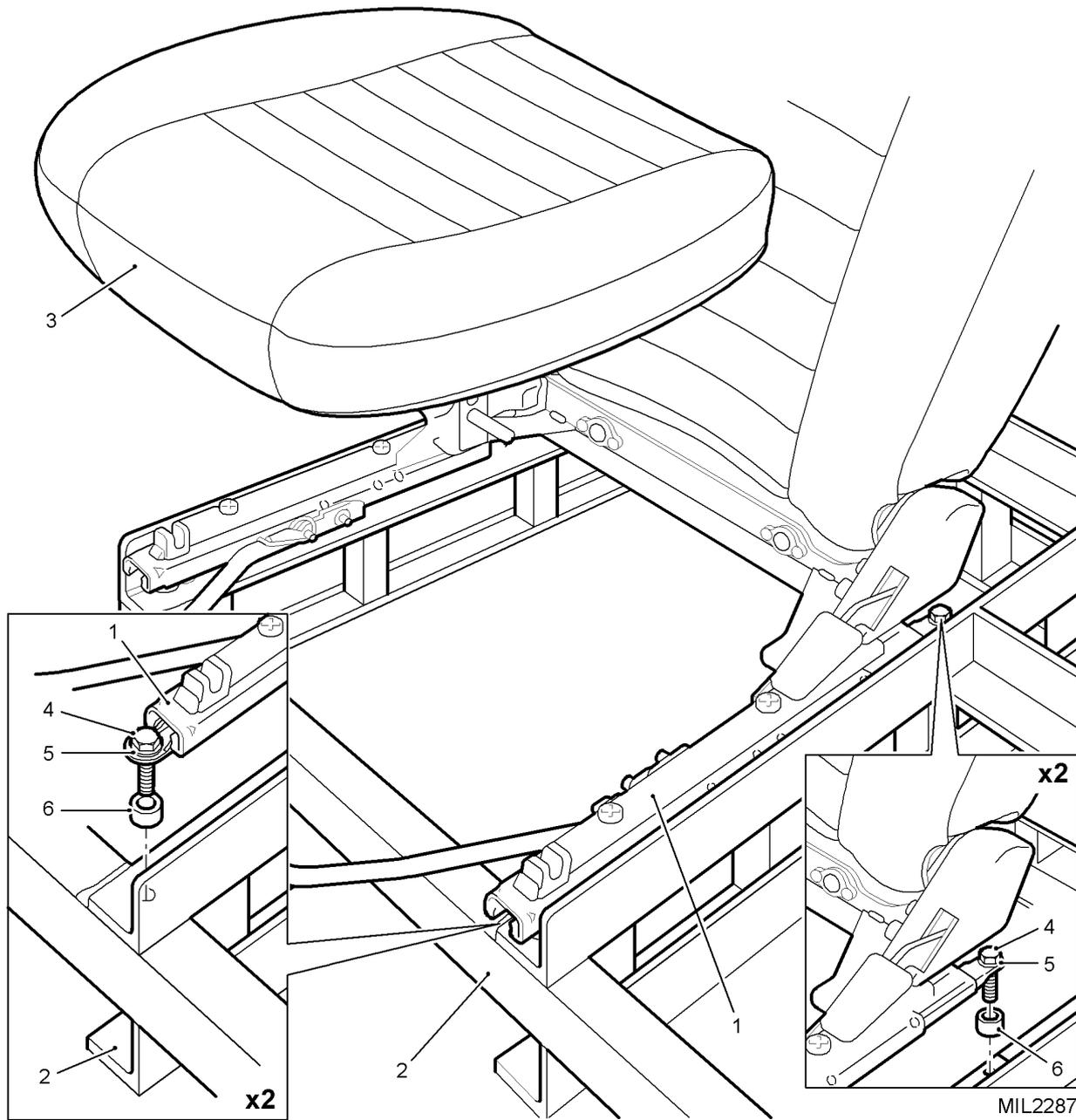
9.16 Locate seat (Item 2) onto base frame and align fixing holes in seat rails with base frame.

NOTE

If necessary, slide the seat on the seat rails to access the seat mounting holes.

9.17 Install four screws (Item 8) with washers (Item 9) through the seat rails and spacers (Item 10), into the tapped holes in the base frame (Refer to Fig 4). Tighten fixings to xxNm.

9.18 Fit the seat cushion to the seat base.



MIL2287

- | | | | |
|---|--------------|---|----------------|
| 1 | Seat rail | 4 | Screw, M8 x ?? |
| 2 | Base frame | 5 | Washer, M8 |
| 3 | Seat cushion | 6 | Spacer |

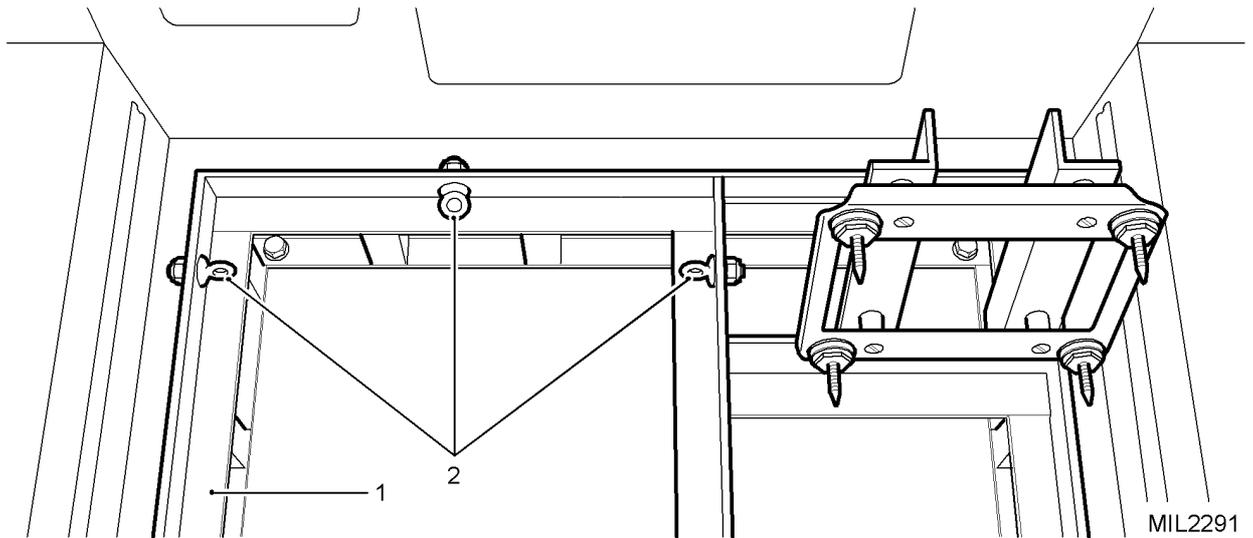
Fig 4 Installing the seat

Installing the Safety Harness

WARNING

ENSURE THAT THE SAFETY HARNESS WEBBING IS NOT TWISTED WHEN SECURING THE HARNESS TO THE EYE BOLTS ON THE BASE FRAME.

10 Clip the anchoring clips of the safety harness (Item 6) to the eye bolts mounted to the base frame on either side and to the rear of the seat. (Refer to Fig 5).



Note: Seat not shown for clarity

1 Base frame

2 Safety harness eyebolts

Fig 5 Safety harness anchoring

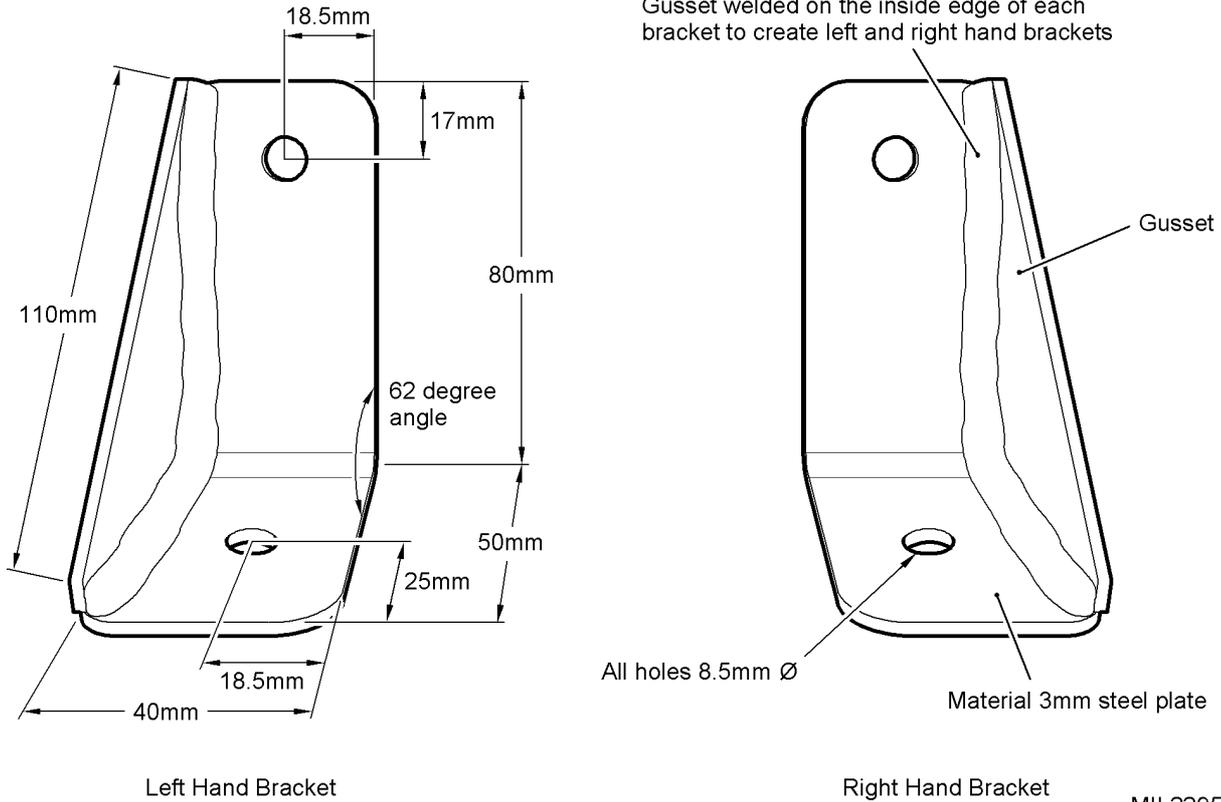


Fig 6 Bracket construction

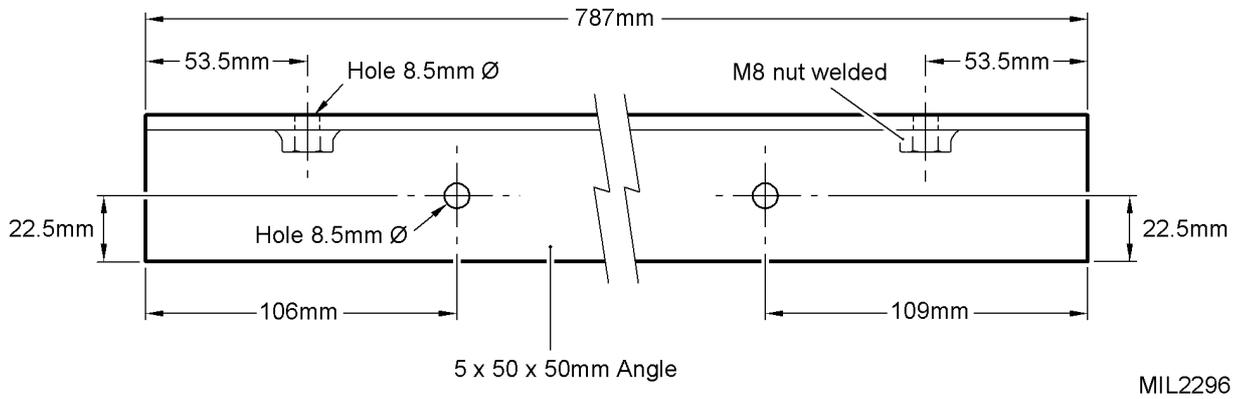
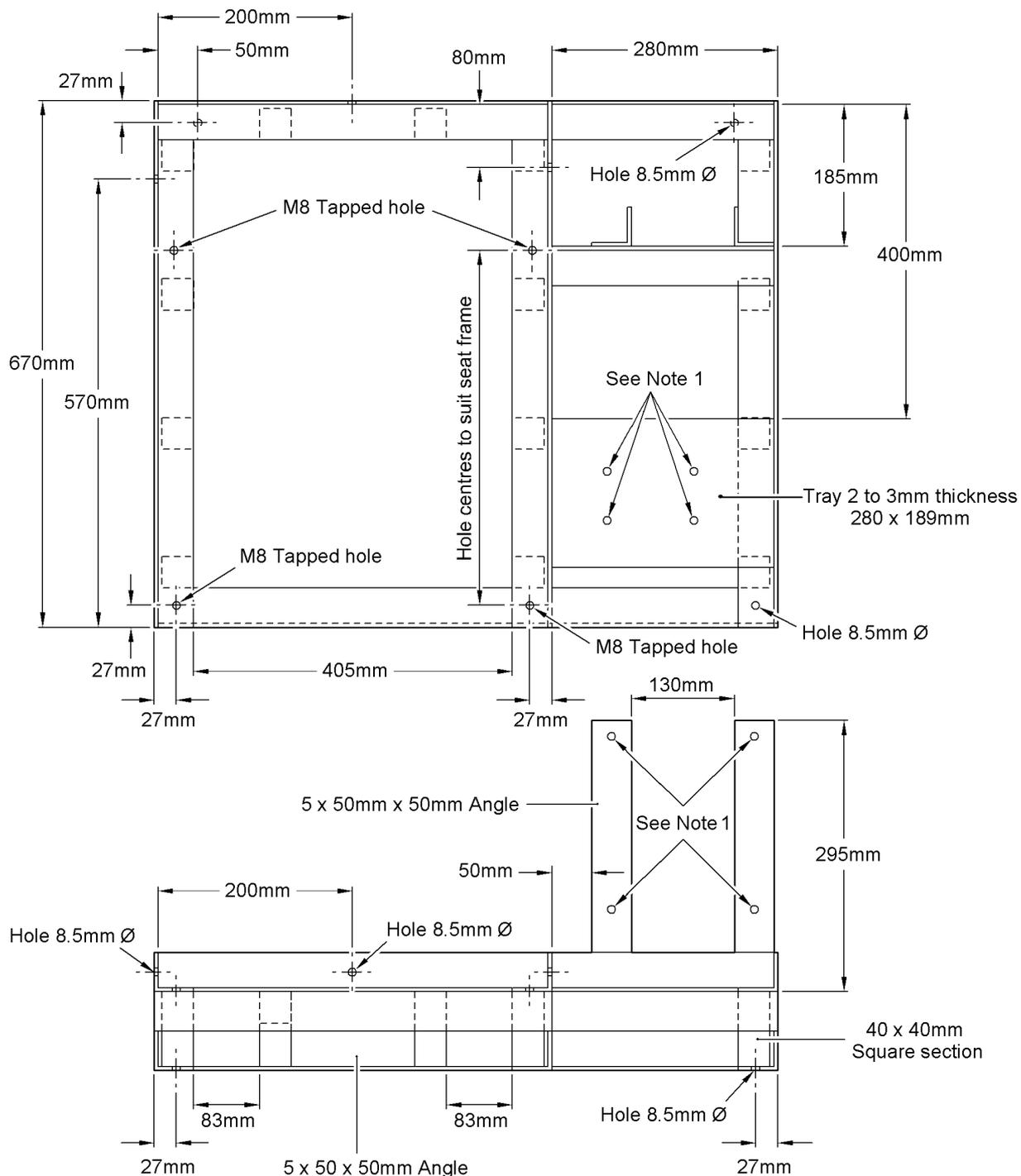


Fig 7 Spreader plate construction



Note 1: Size and position of holes to suit equipment

MIL2298

Fig 8 Base frame construction

WINTER WATER VEHICLES ONLY**Rear compartment radiator removal****WARNING**

PRESSURISED COOLING SYSTEM. DO NOT REMOVE THE RADIATOR OR EXPANSION TANK FILLER CAP WHEN THE ENGINE IS HOT. THE COOLING SYSTEM IS PRESSURISED AND PERSONAL SCALDING COULD RESULT.

NOTE

Refer to 2320-D-128-522 Chap 18-3 for procedure for removing rear compartment radiators.

Pipework modification**CAUTION**

After the removal of the rear compartment radiators and modification of the pipework has been completed it will be necessary to bleed the cooling system.

- 10.1 Slacken the lower hose clip securing the hose. (Refer to Fig 9).
- 10.2 Rotate the hose through 90 degrees and tighten lower hose clip.
- 10.3 Repeat Paras 9.1 and 9.2 to the other hose.
- 10.4 Bend pipes to suit installation.
- 10.5 Connect the hoses to the pipes from the stop tap using hose clips.
- 10.6 Check tightness of compression nuts on stop tap.
- 10.7 Check tightness of screws holding 'P' clips.

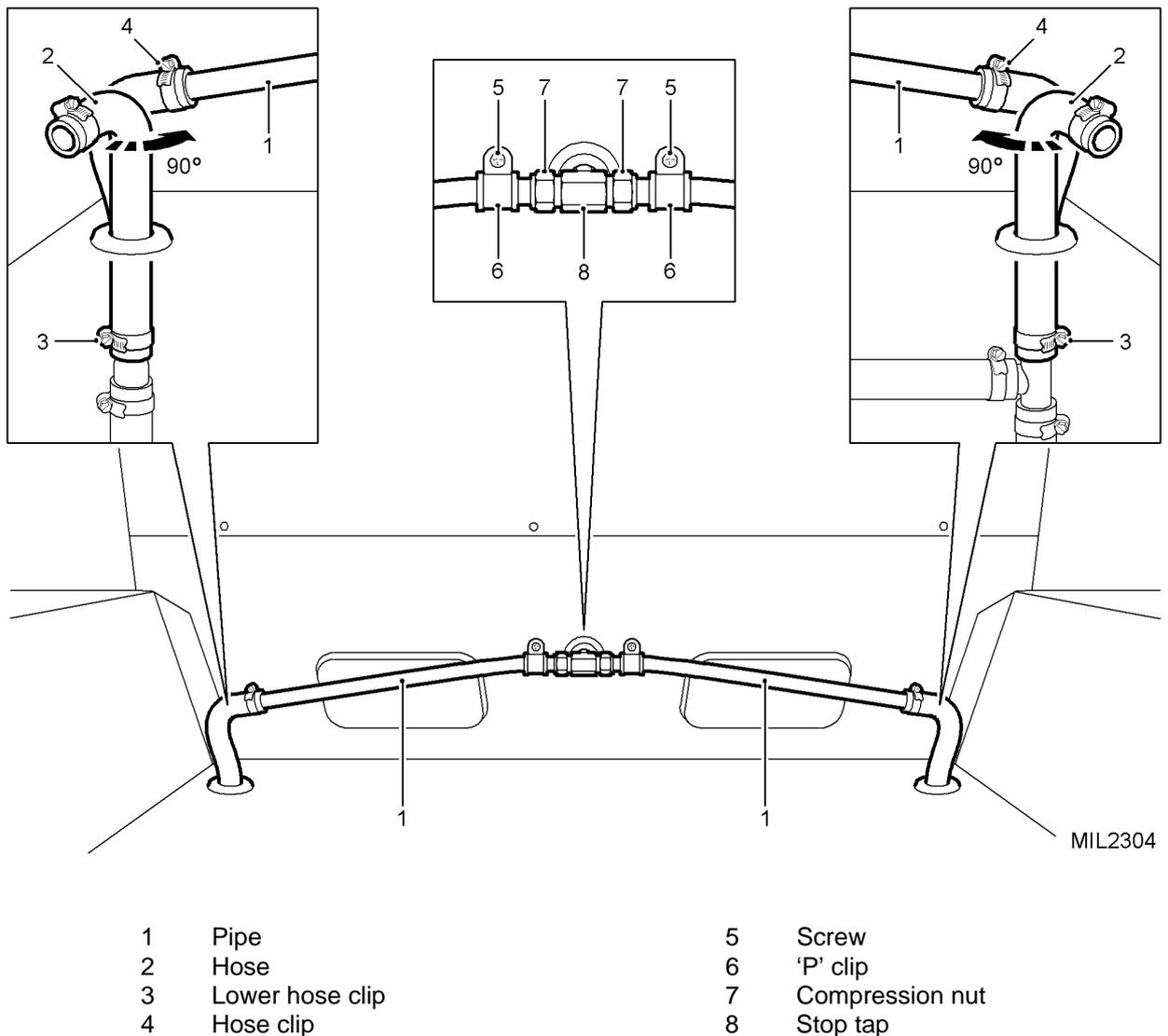


Fig 9 Pipework modification

Bleeding the Water Heating System

WARNINGS

(1) PRESSURISED SYSTEM. WHEN THE ENGINE IS HOT THE COOLING SYSTEM IS PRESSURISED AND THE RAPID RELEASE OF HOT COOLANT COULD RESULT IN PERSONAL INJURY. DO NOT REMOVE THE RADIATOR OR EXPANSION TANK FILLER CAPS OR THERMOSTAT HOUSING BLEED SCREW UNTIL THE ENGINE HAS COOLED SUFFICIENTLY.

(2) OVERHEATING. INADEQUATE BLEEDING COULD RESULT IN THE WATER HEATER OVERHEAT SWITCH ACTUATING DURING OPERATION.

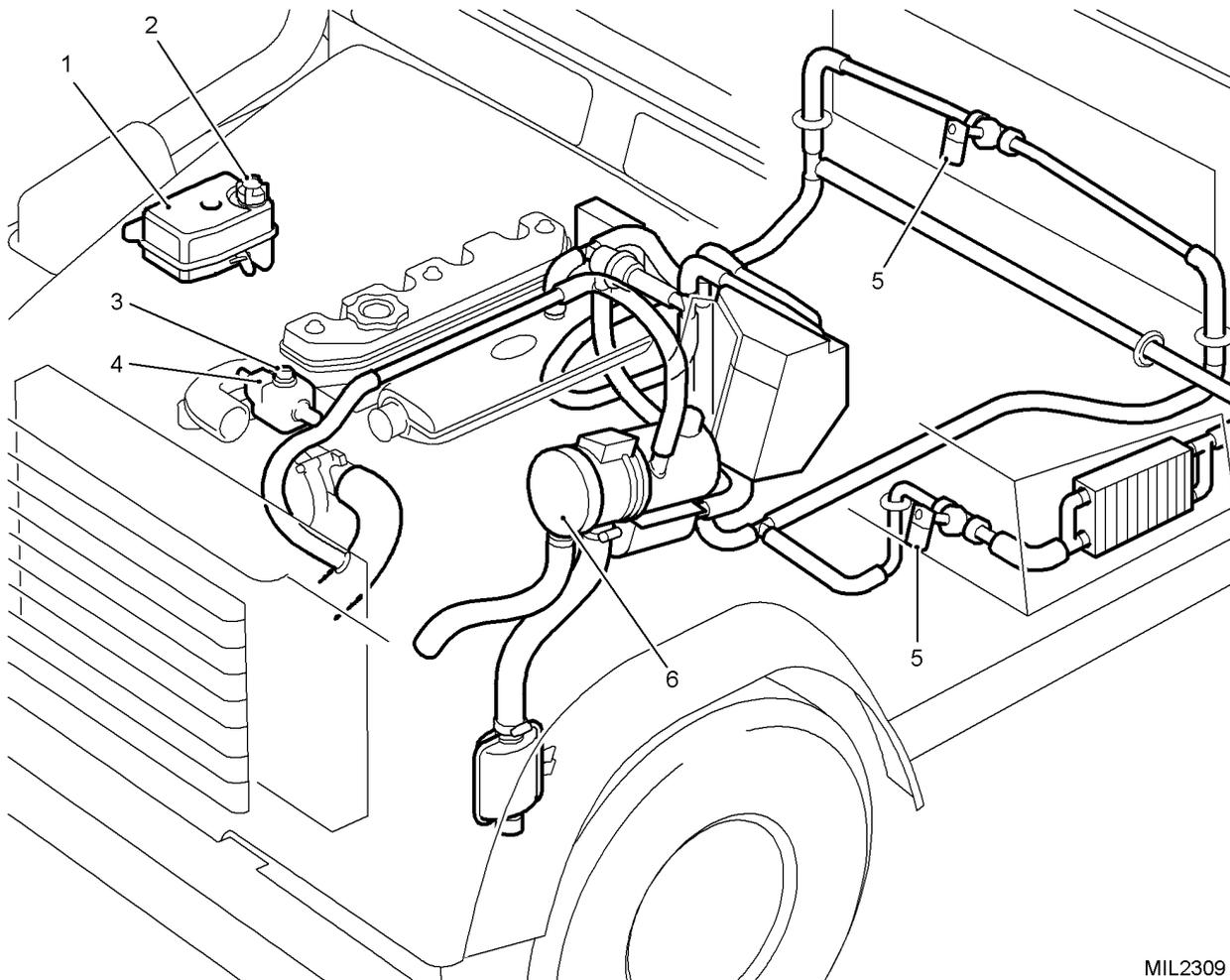
11 After removal of the rear radiators and modification of the pipework has been completed it will be necessary to bleed the cooling system.

NOTE

Refer to 2320-D-128-522 Chap 12-2 for procedure for bleeding water heating system.

CAUTION

When bleeding the system ensure the stop tap on the bulkhead is open. (Refer to Fig 10).



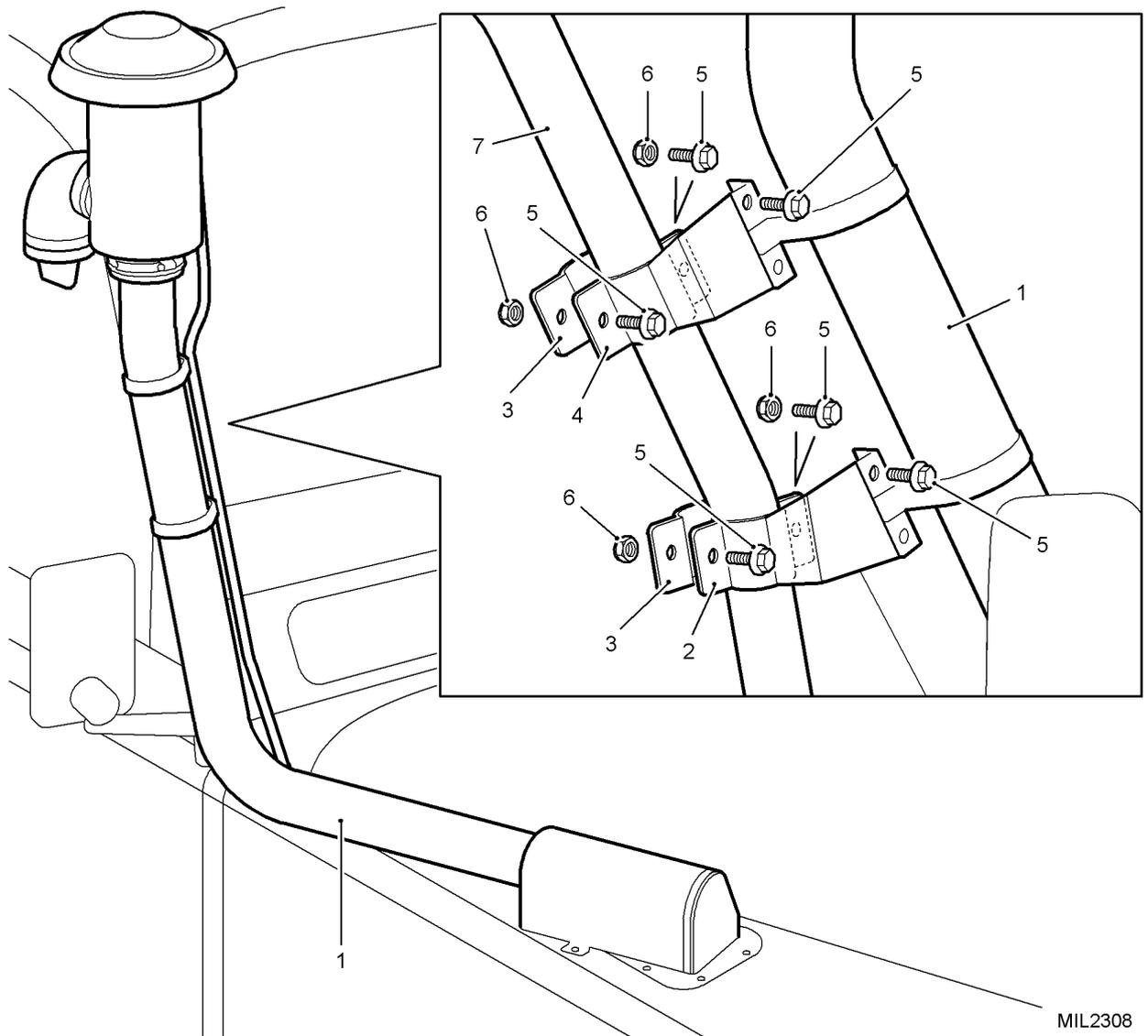
MIL2309

- | | | | |
|---|--------------------------------|---|--------------------|
| 1 | Expansion tank | 4 | Thermostat housing |
| 2 | Expansion tank filler cap | 5 | Stop tap |
| 3 | Thermostat housing bleed screw | 6 | Heater |

Fig 10 Bleeding the heater system

Raised air intake installation

- 11.1 Attach the top and bottom brackets (Items 14 and 15) to the raised air intake with screws (Item 17). Do not fully tighten screws at this stage.
- 11.2 Fit raised air intake complete with brackets to the roll cage and secure using clamps (Item 16), screws (Item 17) and nuts (Item 18). Do not fully tighten screws at this stage.
- 11.3 Check alignment of air intake and then fully tighten the screws on top and bottom brackets.



MIL2308

- | | | | |
|---|------------------------|---|----------|
| 1 | Raised intake assembly | 5 | Screw |
| 2 | Bottom bracket | 6 | Nut |
| 3 | Bracket | 7 | Roll bar |
| 4 | Top bracket | | |

Fig 11 Raised intake installation

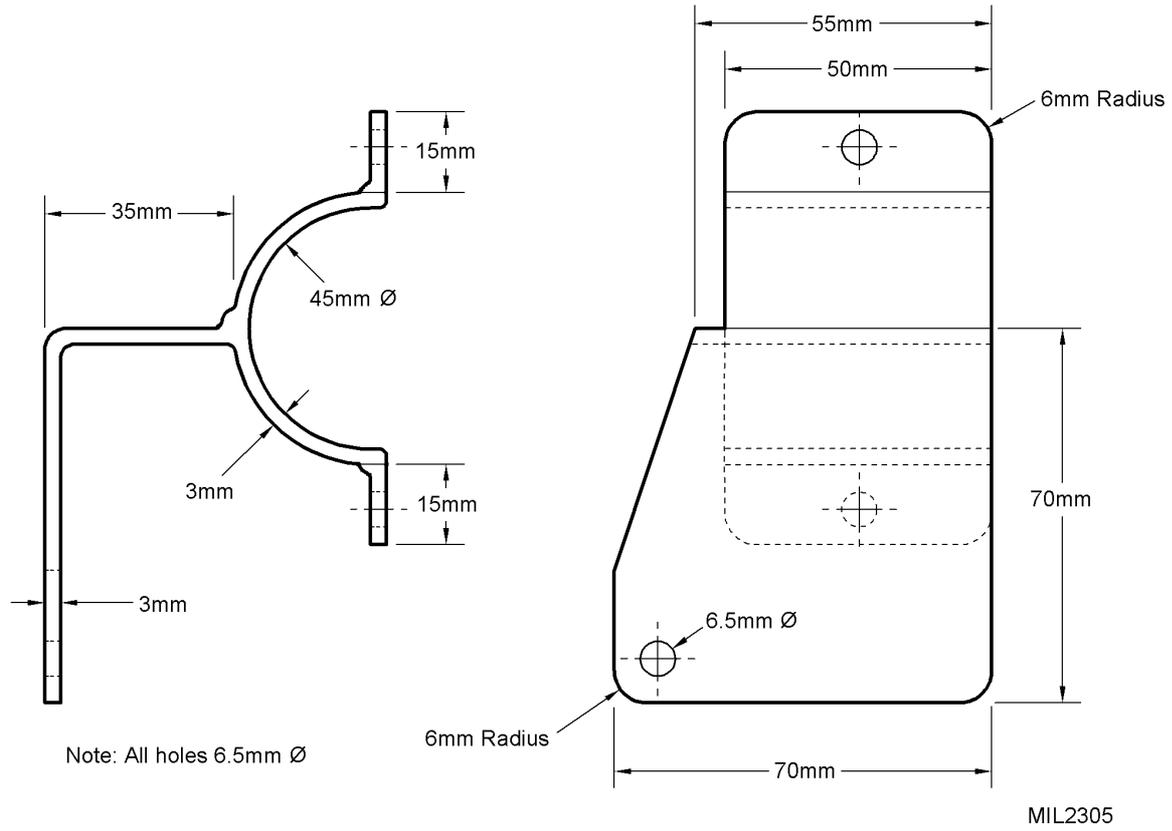


Fig 12 Top bracket construction

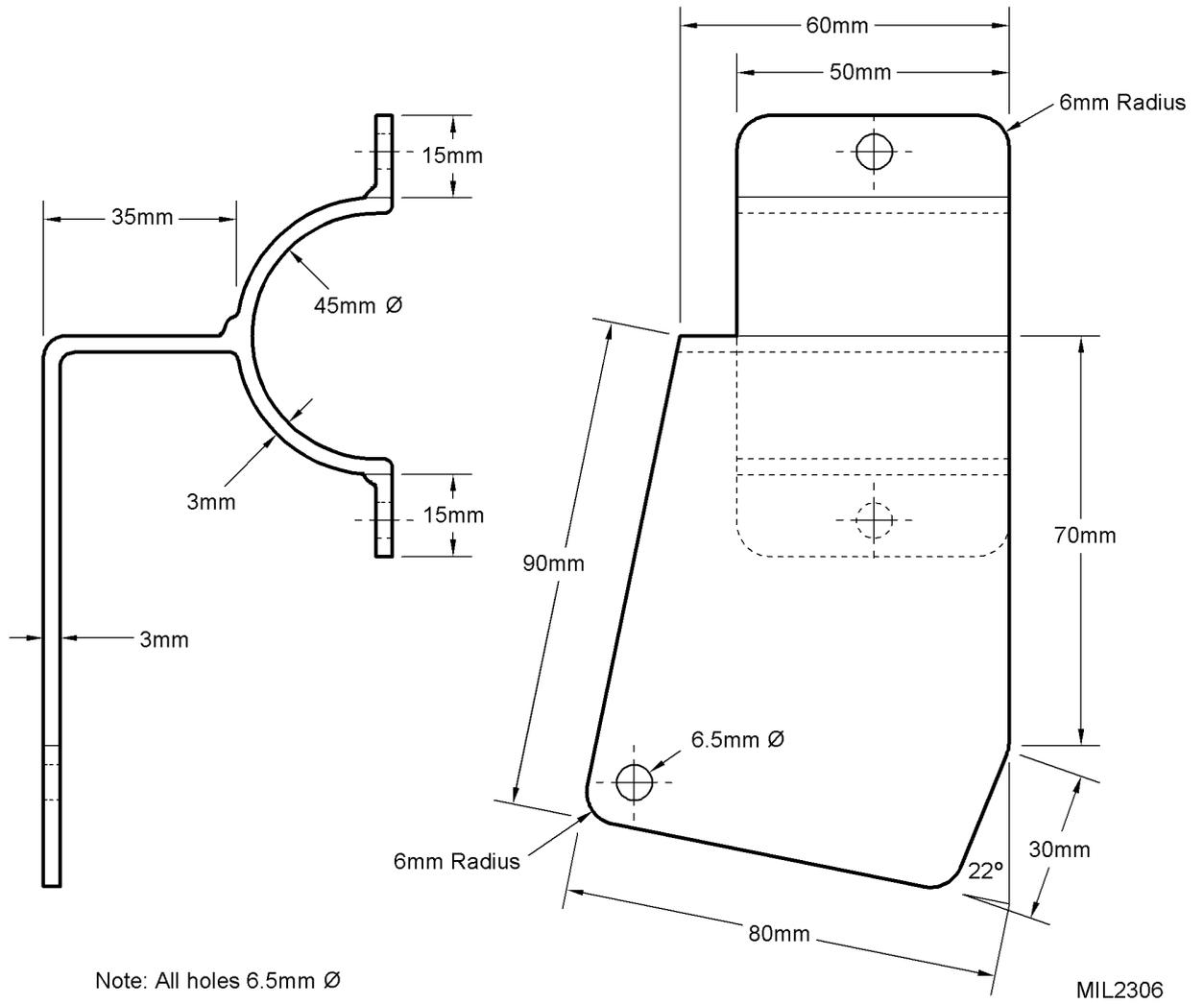


Fig 13 Bottom bracket construction

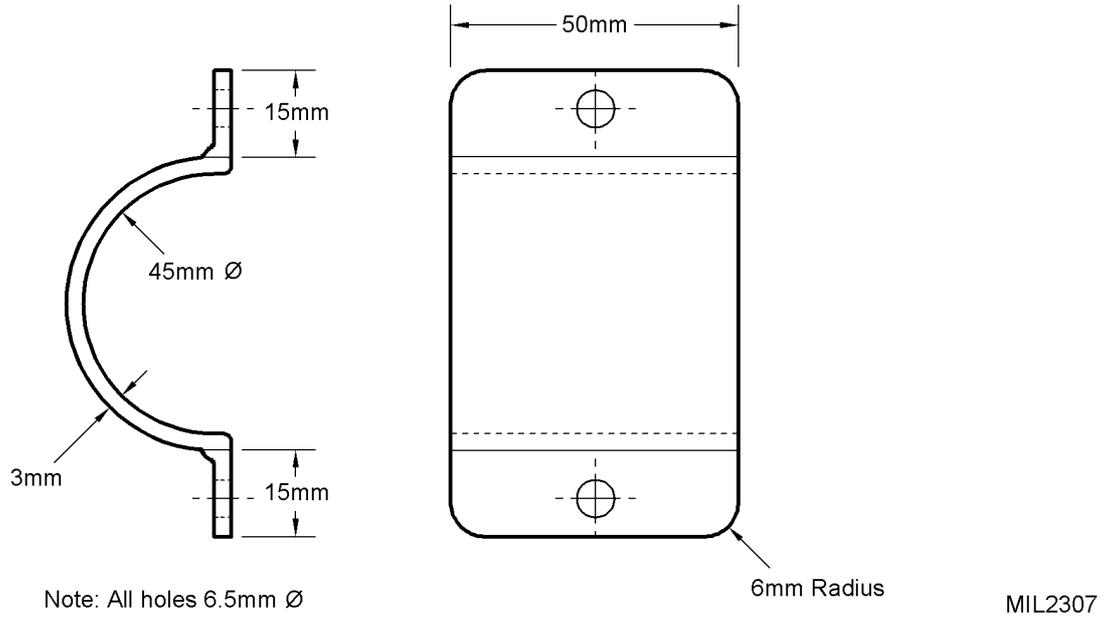


Fig 14 Clamp construction

TESTING AFTER EMBODIMENT

12 Nil.

EFFECT ON WEIGHT

13 N/A

PUBLICATION AMENDMENTS

14 Nil

TRUCK UTILITY MEDIUM (TUM) HS

MODIFICATION INSTRUCTION NO. 44

Sponsor: OSVP PT
Project No.:
File Ref:

Publication Authority: OSVP PT, Abbey Wood

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Replacing the six way lighting switch with a seven way lighting switch.

INTRODUCTION

1 This instruction details the removal of the existing six way lighting switch and the fitting of a seven way lighting switch to all variants including winter water vehicles.

1.1 Limitations on use of equipment. Nil

APPLICABILITY

2 On failure of the 6 Way Lighting Switch in service, the unit should demand a replacement 7 Way Lighting Switch as detailed in para. 8.1.1, as a service replacement.

REASON FOR MODIFICATION

3 Code 2 - to improve operational performance.

PRIORITY

4 Army: Routine.
RAF: Class 3.

ESTIMATED TIME REQUIRED

5 Embodiment: 0.5 man hrs.

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

6.1.1 ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.

6.1.2 RAF - Units not later than the next routine maintenance and Vehicle Depots before next issue of vehicle.

6.2 Associated modification instructions. Nil.

6.3 Modification plate strike action. N/A.

Action required by

7

7.1 Units and establishment holding equipment.

7.1.1 Examine JAMES/Vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary units with level 2 REME support demand the stores required.

7.1.3 Upon the embodiment of equipment, units are to record the modification subject and AESP Number in JAMES/Equipment documents.

7.1.4 RAF – Record modification details on AF G1084A and Form 4870. Units operating STAMA are also to record modification details on ADPMTMS job certification sheet and to follow the procedures laid down in AP 100C - 08A.

7.2 Army units authorised to carry out levels 2, 3 and 4 maintenance and RAF units.

7.2.1 ARMY – When requested by users or during overhaul of equipment on charge without REME level 2 support, obtain the items listed in Para. 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.3 All receipts of this instruction. Add particulars to AESP ref. 2320-D128-811 Mod instr. index.

Stores tools and equipment

NOTE

Items not codified, if required, should be demanded using the manufacturer's part numbers through the normal system.

8

8.1 Stores to be demanded.

8.1.1 The following set is to be demanded quoting this instruction as authority.

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
	7XD	5930-99-881-7621	.Seven way lighting switch (Comprising)	1
1	7XD	5930-99-832-9696	..Switch	(1)
2	7XD	5975-99-829-3417	..Boot	(1)
3		HIL0034	..Wiring loom	(1)
4		HIL0039	..Self Adhesive label	(1)
5		HIL0026	Switch panel	1

Sequence of operations

NOTE

The item numbers in Para 8 are used as references throughout this instruction.

9 Carry out the modification as follows:

ALL VARIANTS – EXCLUDING WINTER WATER VEHICLES

Removal of Six way lighting switch

9.1 Disconnect the vehicle batteries refer to 2320-D-128-522, Chapter 13-1, Para 2. If fitted isolate the radio batteries.

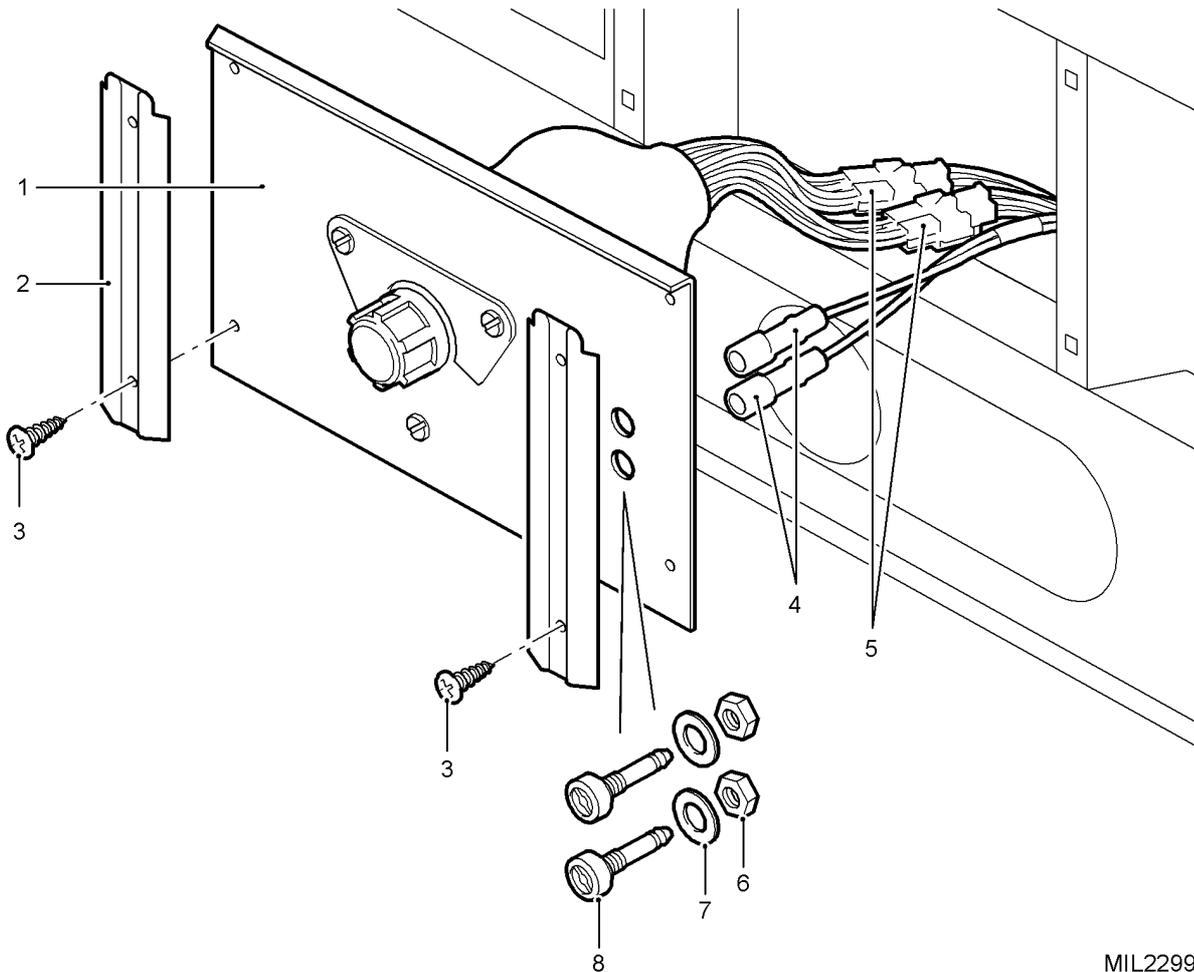
9.2 Remove the four screws that secure the two trims, retain for refitting. (Refer to Figure 1).

10

10.1 Move the switch panel forwards and disconnect the two insulated terminal connectors from the rear of the inspection lamp sockets.

10.2 Disconnect the black and the white lighting switch multi-plugs from the main harness.

10.3 Undo the plastic nuts and remove the fibre washers from the positive and negative inspection lamp sockets. Remove the posts from the switch panel, **retain** posts and fixings for refitting.



1	Switch panel	5	Multi-plugs
2	Trim	6	Plastic nut
3	Screw	7	Fibre washer
4	Insulated terminal connections	8	Inspection lamp sockets

Fig 1 Six way lighting switch removal

Fitting the Seven way lighting switch

10.4 Fit the positive and negative inspection lamp sockets removed earlier to the new switch panel (Item 5), ensure that the plastic insulators and the fibre washers are located correctly. Secure with plastic nuts. (Refer to Figure 2).

10.5 Install the switch body (Item 1) into the new panel (Item 5).

NOTE

Ensure the lock tabs are positioned in the recesses in the switch panel.

10.6 Position the self adhesive switch label (Item 4) on the panel, align the cut outs and secure to the mounting panel.

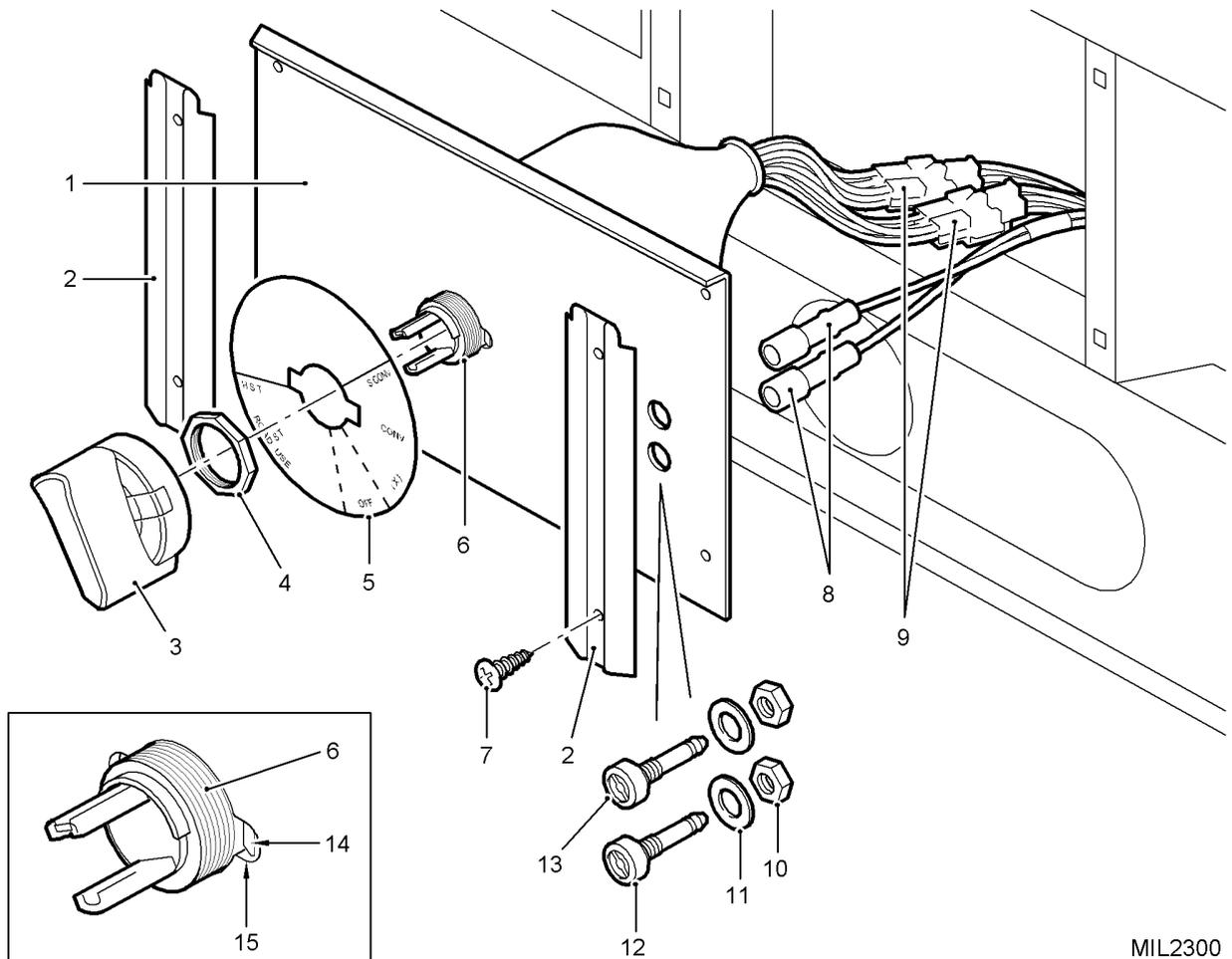
10.7 Secure the switch body to the mounting panel with the nut.

10.8 Align the switch control knob with the shaft and install.

10.9 Connect the black and white light switch multi-plugs to the main harness.

10.10 Fit the insulated terminal connector with the brown wire to the rear of the positive (red) inspection lamp socket. Fit the insulated terminal connector with the black wire to the negative (black) inspection lamp socket.

10.11 Install the new switch panel and secure with trims and screws removed earlier.



MIL2300

- | | | | |
|---|--------------------------------|----|--------------------------------|
| 1 | Switch panel | 9 | Multi-plugs |
| 2 | Trim | 10 | Plastic nut |
| 3 | Control knob | 11 | Fibre washer |
| 4 | Nut | 12 | Inspection lamp socket - Black |
| 5 | Self adhesive label | 13 | Inspection lamp socket - Red |
| 6 | Switch body | 14 | Lock tabs |
| 7 | Screw | 15 | Recess |
| 8 | Insulated terminal connections | | |

Fig 2 Seven way lighting switch installation

WINTER WATER VEHICLES**Removal of Six way lighting switch**

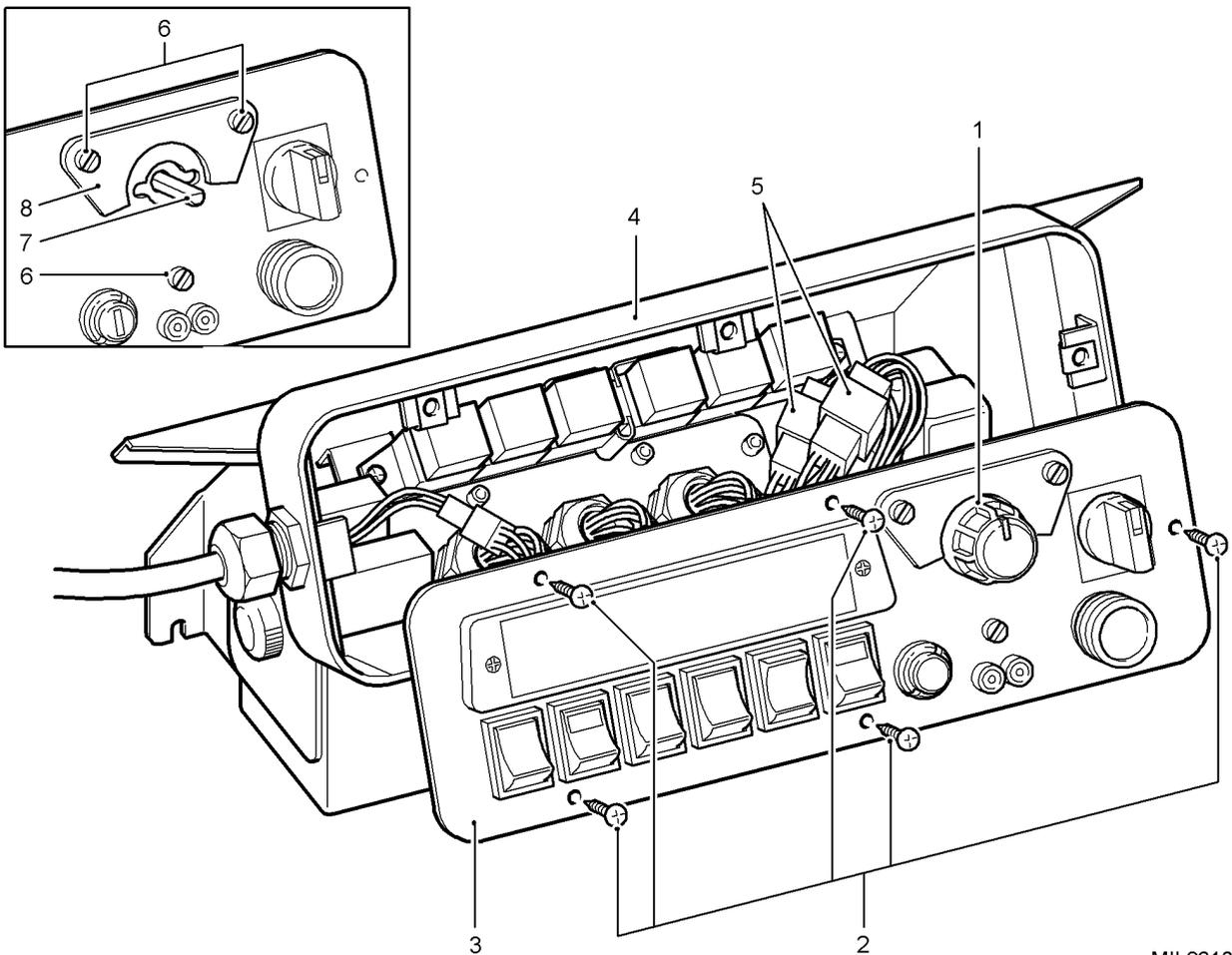
10.12 Disconnect the vehicle batteries (refer to Chap 13-1) and on FFR vehicles the radio batteries (refer to Chap 13-2).

10.13 Undo retaining screw and remove the control knob from main lighting switch. Refer to Figure 3.

10.14 Remove the five screws and ease forward the mounting panel from the centre console (Item 4).

10.15 Disconnect multi-plug connectors.

10.16 Remove the three screws securing switch and indicator plate to mounting panel and withdraw switch and plate.



MIL2310

- | | | | |
|---|----------------|---|-----------------------|
| 1 | Control knob | 5 | Multi-plug connectors |
| 2 | Screws | 6 | Screws |
| 3 | Mounting panel | 7 | Switch |
| 4 | Centre console | 8 | Indicator plate |

Fig 3 Six way lighting switch removal

Fitting the Seven way lighting switch

10.17 Install the switch body (Item 1) into the mounting panel. (Refer to Figure 4).

NOTE

Ensure the lock tabs are positioned in the recesses in the mounting panel.

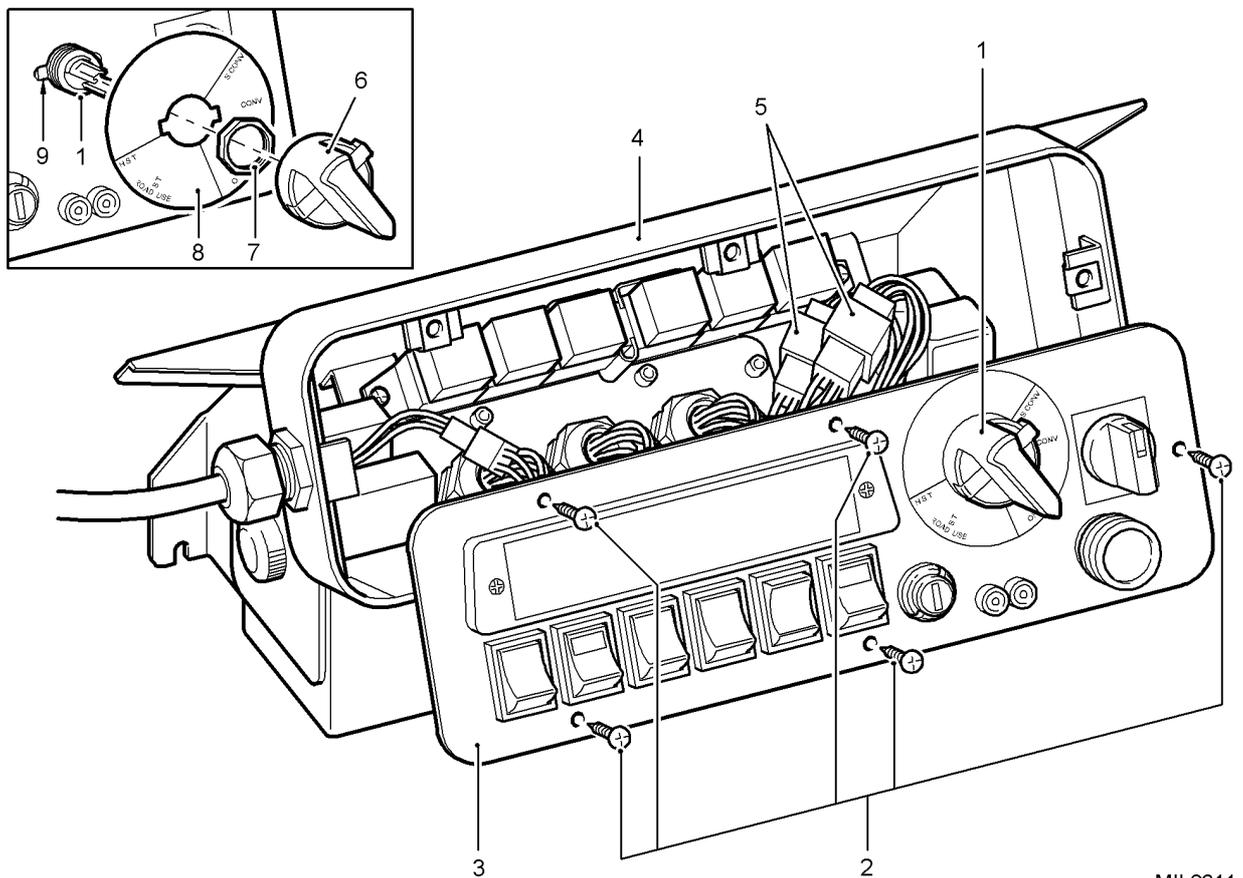
10.18 Position the self adhesive switch label (Item 4) on the panel, align the cut outs and secure to the mounting panel.

10.19 Secure the switch body to the mounting panel with the nut.

10.20 Align the switch control knob with the shaft and install.

10.21 Connect the black and white light switch multi-plugs to the main harness.

10.22 Refit the mounting panel onto the centre console and secure with five screws.



MIL2311

- | | | | |
|---|-----------------------|---|---------------------|
| 1 | Switch | 6 | Control knob |
| 2 | Screws | 7 | Nut |
| 3 | Mounting panel | 8 | Self adhesive label |
| 4 | Centre console | 9 | Lock tabs |
| 5 | Multi-plug connectors | | |

Fig 4 Seven way lighting switch installation

TESTING AFTER EMBODIMENT

11 Test for correct operation of the main lighting switch. Refer to 2320-D-128-201 Chap 2-1 and for Winter water vehicles 2320-D-128-201 Chap 2-4.

EFFECT ON WEIGHT

12 Negligible.

PUBLICATION AMENDMENTS

13 Nil.

TRUCK UTILITY MEDIUM (TUM) HS

MODIFICATION INSTRUCTION NO. 45

Sponsor: OSVP
Project No.:
File Ref:

Publication Authority: OSVP, Abbey Wood

AMENDMENT RECORD

Amdt No.	Incorporated By (Signature)	Date	Amdt No.	Incorporated By (Signature)	Date
1			4		
2			5		
3			6		

SUBJECT: Conversion of ODETTE Land Rovers to TUM (HS) GS.

INTRODUCTION

1 This instruction details the conversion of an ODETTE Land Rover to a TUM (HS) GS.

NOTE:

If Modification Instruction No. 39 (REMUS) hasn't already been embodied, it should be done so at the same time as this Instruction to prevent the duplication of work.

1.1 Limitations on use of equipment. Nil

APPLICABILITY

2 TUM(HS) Vehicles only, with following Asset codes: NB 5020 3101; NB 5020 3102; NB 5020 3103.

REASON FOR MODIFICATION

3 Code 6 – Removal of ODETTE vehicles from service.

PRIORITY

4 Army: Routine.

ESTIMATED TIME REQUIRED

5 Embodiment: (TBC) man hrs dependant on equipment fitted to vehicle.

MODIFICATION IMPLEMENTATION PLAN

6

6.1 This modification is to be implemented by:

6.1.1 ARMY - Units authorised to carry out levels 2, 3 and 4 maintenance.

6.2 Associated modification instructions. Cat 811 Mod Instructions 12, 16, 35 and 39.

6.3 Modification plate strike action. Yes.

Action required by

7

7.1 Units and establishment holding equipment.

7.1.1 Examine JAMES/Vehicle documents to see if modification is applicable.

7.1.2 Examine equipment or modification record plate to see if modification is embodied and where necessary units with level 2 REME support demand the stores required.

7.1.3 Upon the embodiment of equipment, units are to record the modification subject and AESP Number in JAMES/Equipment documents.

7.2 Army units authorised to carry out levels 2, 3 and 4 maintenance.

7.2.1 When requested by users or during overhaul of equipment on charge without REME level 2 support, obtain the items listed in Para. 8 and carry out this modification.

7.2.2 Record completion details of modification against appropriate entry in equipment documents.

7.3 All receipts of this instruction. Add particulars to AESP ref. 2320-D128-811 Mod instr. index.

Stores tools and equipment

8

8.1 Stores to be demanded.

8.1.1 Only parts necessary to carry out the conversion of the variant being undertaken are to be demanded quoting this instruction as authority.

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
Hood Support				
1	7XD	2510-99-126-3324	Tube Assembly, Hood Support	1
2	7FW	5305-99-842-0480	Screw, M10 x 25	4
3	G1	5310-99-122-6476	Washer, plain M10	4
4	7XD	5310-99-215-8581	Nut,nyloc M10	4
Hardtop				
5	7XD	2510-99-998-9200	Panel, Body, Vehicular	1
6	7XD	5330-99-709-0778	Seal	2
7	7XD	5330-99-968-1992	Seal, Nonmetallic Special Shaped Section	A/R
8	7XD	9330-99-721-4452	Plastic Strip, Pressure Sensitive Adhesive Coated	A/R
9	7XD	5325-99-828-1012	Grommet, Rubber	2
10	7XD	2540-99-331-8336	Plug	2
Rear Seats				
11	7XD	2540-99-591-3266	Seat assembly inward facing	4
12	7XD	5305-99-858-0971	Screw, M6 x 16	16
13	7XD	5310-99-788-7549	Washer, plain M6	16
14	G1	5310-99-139-5313	Nut, M6	16
15	7XD	5340-99-299-0077	Anchorage rear seat	A/R
16		5320-99-970-3518	Rivet, Blind, 3/16" x 0.45" lng	A/R
Rear Seat Belts				
		2540-99-834-8997	Auto Retracting Seat Belt Kit Comprising, per kit:	8
17		NP	Auto Retracting Seat Belt (ARB) Reel	(1)
18		NP	Seat Belt Buckle	(1)
19		NP	Mounting Bracket	(3)
20	G1	5306-99-941-0328	Bolt 7/16 UNF x 40 (Seat belt reels to Brkt)	(1)
21	G1	5305-99-941-0553	Bolt 7/16 UNF x 20 (seat belt buckle to Brkt)	(2)
22	G1	5305-99-941-0555	Bolt 7/16 UNF x 25 (bracket to floor)	(3)
23		NP	Spacer (fitted between buckles)	(1)
24	G1	5310-99-941-0927	Nut 7/16 UNF	(3)
25	G1C	5310-99-120-6046	Shake-proof washer 7/16 UNF	(3)
Jerrycan Stowage				
26	7XD	5340-99-008-1086	Strap, Webbing	1

Item No	DMC	NSN/Part No	Designation	Qty per eqpt
27	7XD	5340-99-258-0182	Strap, Webbing	1
28	7XD	2540-99-875-8021	Plate, Reinforcing	2
29	G1	5320-99-970-3518	Rivet, Blind, 3/16" x 0.45" lng	4
30	7XD	2540-99-730-8462	Staple, Hood Strap	2
31	7XD	5320-99-135-4157	Rivet, Blind, 3/16" x 0.45" lng	4
32	7XD	7240-99-810-4781	Label, Water Stowage	1
Emergency Hammer				
33	7XD	4240-99-725-3396	Hammer, Window Breaker	1
34	G1	5305-99-135-0600	Screw, Machine M4 x 25mm	2
35	G1	5310-99-122-3408	Washer, Flat M4	4
36	G1	5310-99-122-5643	Nut, Self-Locking, Hexagon M4	2
Rear Side Body Panel Repair				
37			Aluminium Plate, 2mm, Locally Sourced	A/R
38		5320-99-970-3518	Rivet, Blind, 3/16" x 0.45" lng	A/R

Sequence of operations

NOTE:

The item numbers in Para 8 are used as references throughout this instruction.

WARNINGS:

HEALTH AND SAFETY. ENSURE APPROPRIATE CLOTHING AND GOGGLES ARE WORN WHEN DRILLING.

ENSURE THERE IS NOTHING THAT WILL BE DAMAGED BY THE DRILL PASSING THROUGH THE BODYWORK.

9 Carry out the modification as follows:

9.1 Position the vehicle onto flat, level ground, apply the handbrake and remove the ignition keys.

9.2 Disconnect the vehicle batteries.

9.3 Remove the fast fuse and spare fuse from the radio power supply fuse box behind the front seats and fix label 'DO NOT USE'.

WARNING:

TO ISOLATE THE OUTPUT FROM THE FFR ALTERNATOR THE FAST FUSE MUST BE REMOVED FROM THE RADIO POWER SUPPLY FUSE BOX. THE SPARE FUSE MUST ALSO BE REMOVED TO PREVENT REINSTALLATION.

9.4 Remove the radio batteries from the battery stowage box under the radio table. Refer to Cat 201 chap 4-2 Para 10.

NOTE:

Equipment removed is to be placed in a suitable container marked with vehicle registration and asset number and placed into storage. The batteries should be managed using local procedures.

REMOVAL

NOTE:

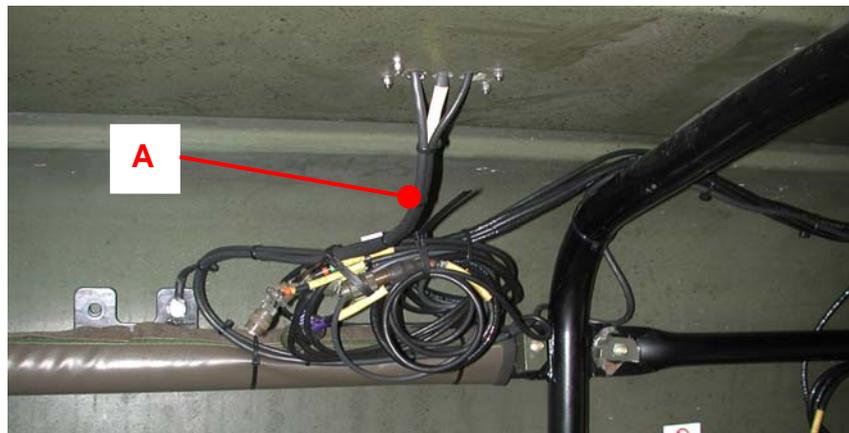
This instruction covers various configurations of the Odette Land Rover. The equipment to be removed is not fitted to all variants of this vehicle.

Exterior

Air Conditioning Mounting Platform Removal

9.5 Position access platform suitable for working at height.

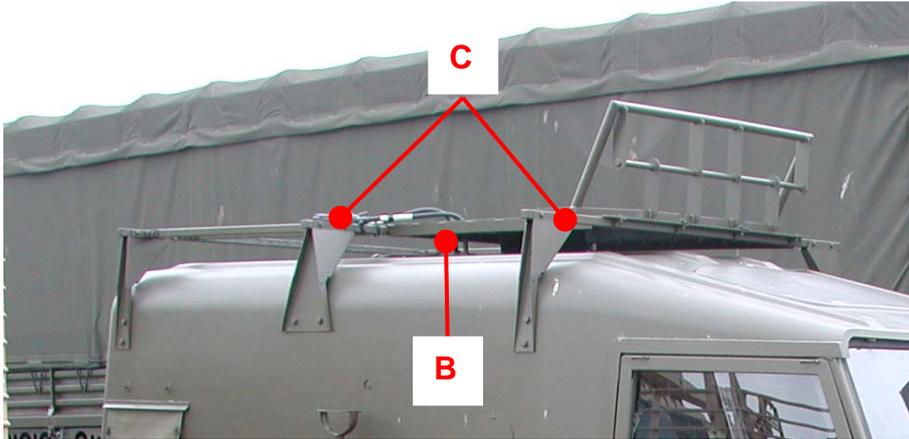
9.6 From inside the vehicle remove cable ties from the harness (**Component A**) passing through the hardtop. Remove fixings securing sealing plate to hardtop. If necessary cut connectors/plugs from the harness to allow removal through hardtop. Remove sealing plate and harness.



Photograph 1

9.7 Remove the fixings securing the eight saddle clamps securing the air conditioning mounting platform (**Component B**) to the front and centre roof bars (**Component C**). With assistance lift and lower the mounting platform from the roof.

9.8 Remove the two bolts securing the bottom of the ladder to the body of the vehicle.

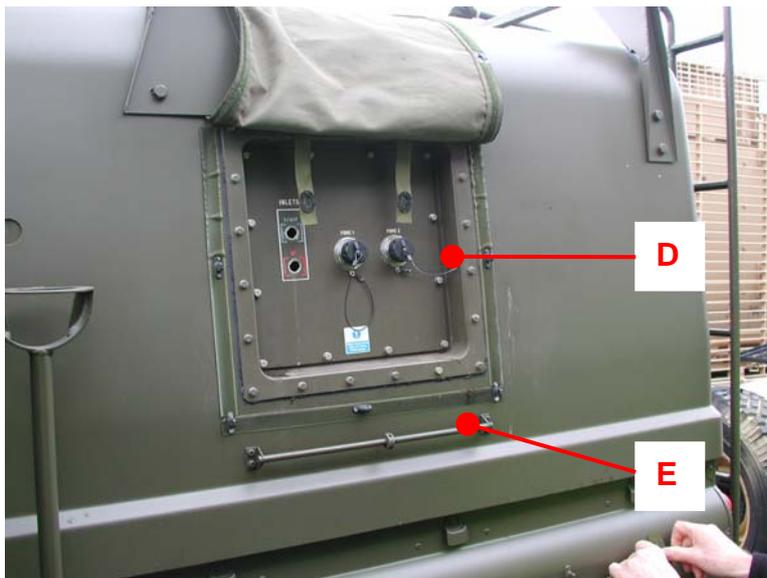


Photograph 2

- 9.9 With assistance remove the two bolts securing the top of the ladder, roof bar and the support bar to the roof bar mounting bracket and remove ladder.
- 9.10 On the front, rear and centre roof bars remove the remaining bolts securing roof bars and the support bars to the roof bar mounting brackets and remove from vehicle.
- 9.11 Remove the roof bar mounting brackets from the six roll cage locations and collect the spacers. Replace the nuts and bolts securing the tie bar cant rails and brace rails and tighten and secure all fixings.
- 9.12 Remove Access Platform.

Input Panel Removal (Component D)

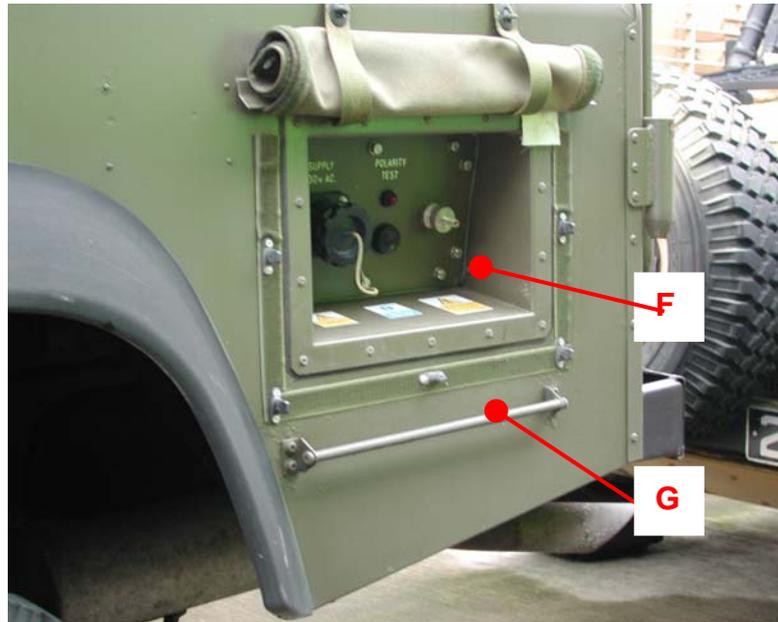
- 9.13 Remove fixings securing the input panel to the hardtop. Remove the panel with any associated wiring.
- 9.14 Remove fixings securing rail to hardtop, remove rail (Component E).



Photograph 3

Power Supply Panel Removal (Component F)

- 9.15 Remove fixings securing the power supply panel to the rear side body panel. Remove panel with any associated wiring.
- 9.16 Remove fixings securing rail to body panel, remove rail (Component G).
- 9.17 Remove fixings securing the flap and catches.
- 9.18 Remove the Velcro from the body panel.

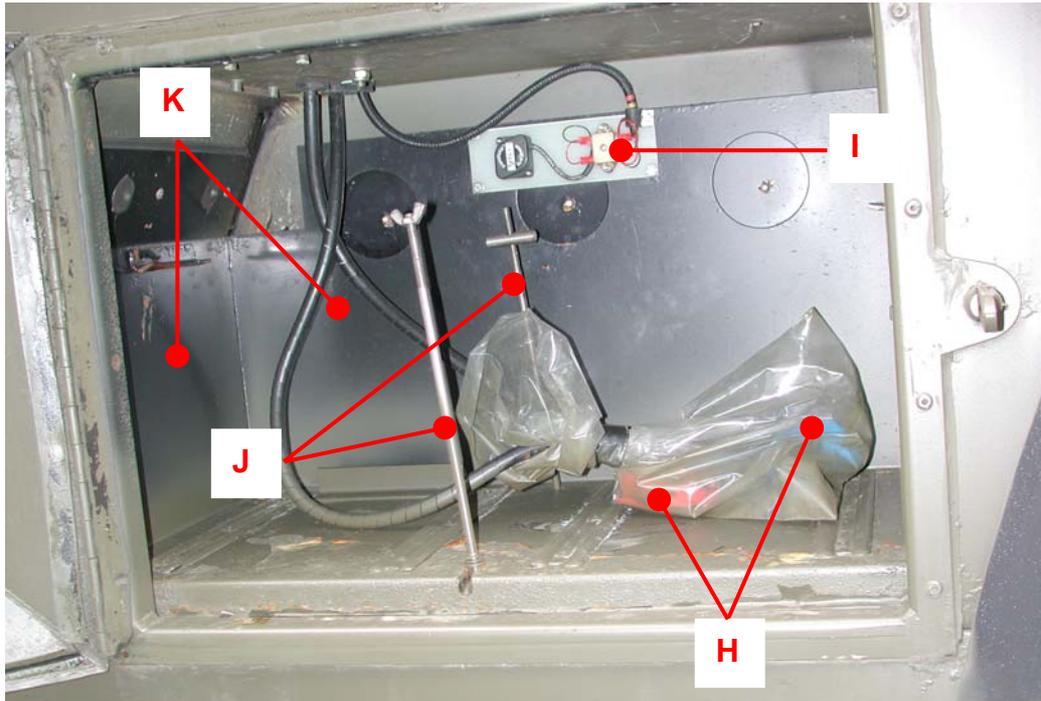


Photograph 4

- 9.19 Fabricate a suitable aluminium panel (item 37) to cover the aperture in the rear side panel.
- 9.20 Pre paint the aluminium panel before fitting.
- 9.21 Install the painted panel and secure with rivets (item 38).
- 9.22 Install rivets to fill the redundant fixing holes

LH Jerrycan Stowage Compartment

- 9.23 Remove battery terminal clamps from leads (Component H).
- 9.24 Disconnect and remove buzzer panel (Component I).
- 9.25 Remove Battery clamps (Component J).
- 9.26 Withdraw cables from the Stowage Compartment.
- 9.27 Remove side and rear panels (Component K).



Photograph 5

Aerial Mounting Base Removal

- 9.28 Remove the fixings securing the radio aerial mounting bases on both sides of the vehicle.

Aerial Coaxial Cable Stowage

- 9.29 Open the hinged covers on the aerial stowage compartments on each wing and remove the coaxial cables.

Interior

Radio Operator Seat Removal

9.30 Remove the radio operator seats, retaining straps and seat support rails.

Rear Seat Belt Removal

Remove all existing seat belts from the rear of the vehicle

9.31 Remove all static lap belts by releasing clips and unhooking clips from eye plate brackets.

9.32 Remove fixings securing eye plate brackets and remove brackets from vehicle.

RADHAZ Curtain Removal

9.33 If damaged remove the RADHAZ curtains in the reverse order of procedure given in Cat 811 Modification Instruction No. 12.

Interior Light Panel Removal

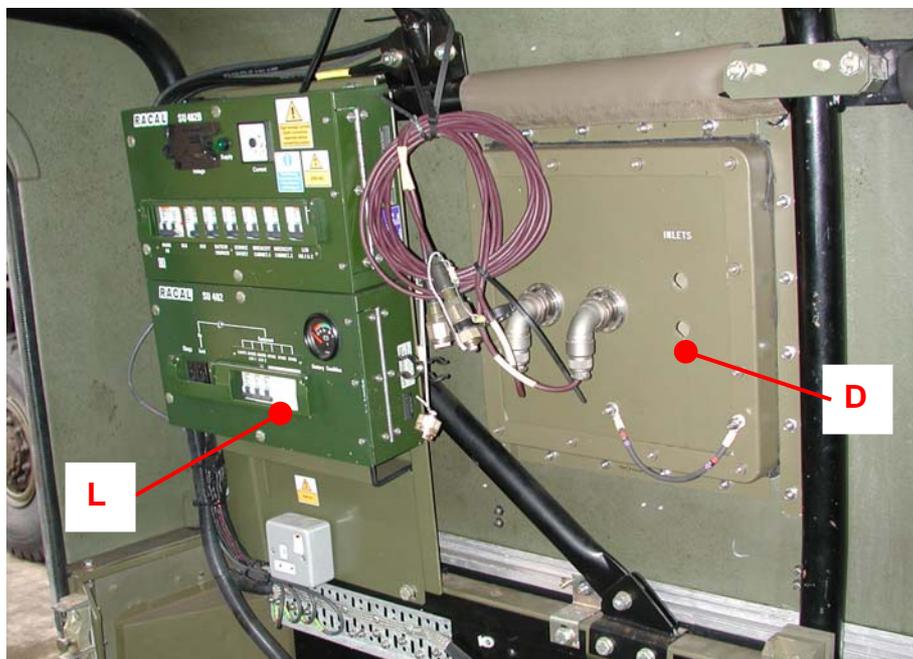
9.34 Remove Interior Light Panel from between the middle rollover hoop and the rear intermediate hoop and associated wiring.

Power Control Panel Removal (Component L)

9.35 Disconnect wiring and remove cable ties to enable removal of the power control panel.

9.36 Remove the fixings securing the power control panel to roll bar and body side inner panel.

9.37 Remove control panel complete with any associated wiring.



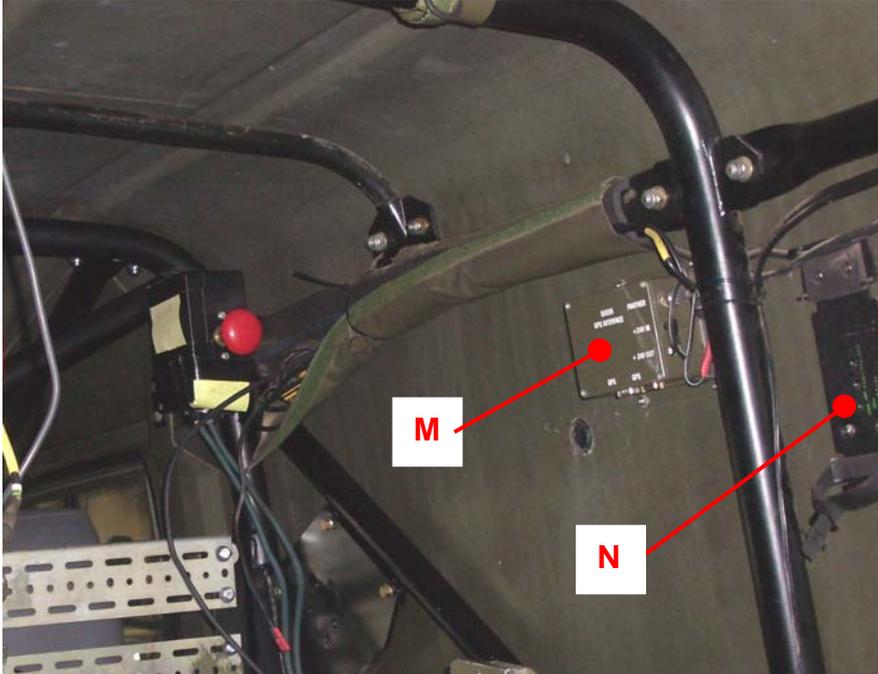
Photograph 6

GPS Interface Removal (Component M)

- 9.38 Remove the fixings securing the GPS Interface to the hardtop.
- 9.39 Remove interface with any associated wiring.

Holder Removal (Component N)

- 9.40 Remove the fixings securing the holder to the hardtop and remove holder.



Photograph 7

Equipment support/table Removal (Component O)

- 9.41 Remove any wiring cable tied to the equipment support/table.
- 9.42 With assistance support the equipment support/table while removing the fixings securing it to the front roll protection brace mounting brackets.
- 9.43 With assistance remove the equipment support/table from the vehicle.
- 9.44 Refit front roll protection brace mounting bracket fixings.

Filter/Power Unit Removal (Component P)

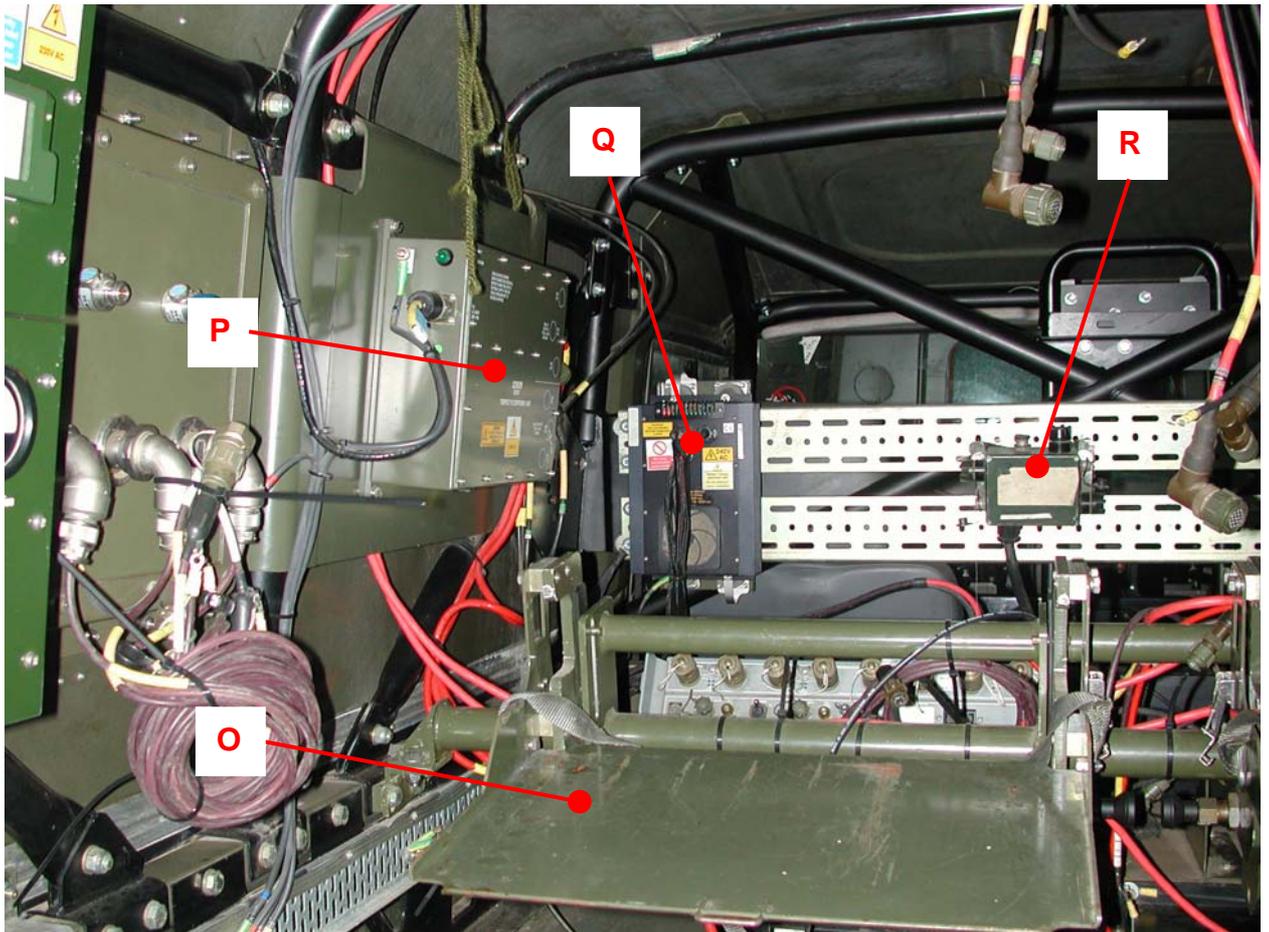
- 9.45 Disconnect connectors to the Filter/Power Unit.
- 9.46 Remove the fixings securing the Filter/Power Unit mounting plate to the roll protection bar.
- 9.47 Remove the Filter/Power Unit complete with mounting plate.

Module Removal (Component Q)

- 9.48 Remove the fixings securing the module to the dexion racking.
- 9.49 Remove module complete with any associated wiring.

Auxiliary Junction Box Removal (Component R)

- 9.50 Disconnect any connectors to the Auxiliary Junction Box.
- 9.51 Remove the fixings securing the terminal box to the dexion racking.
- 9.52 Remove Junction Box complete with any associated wiring.



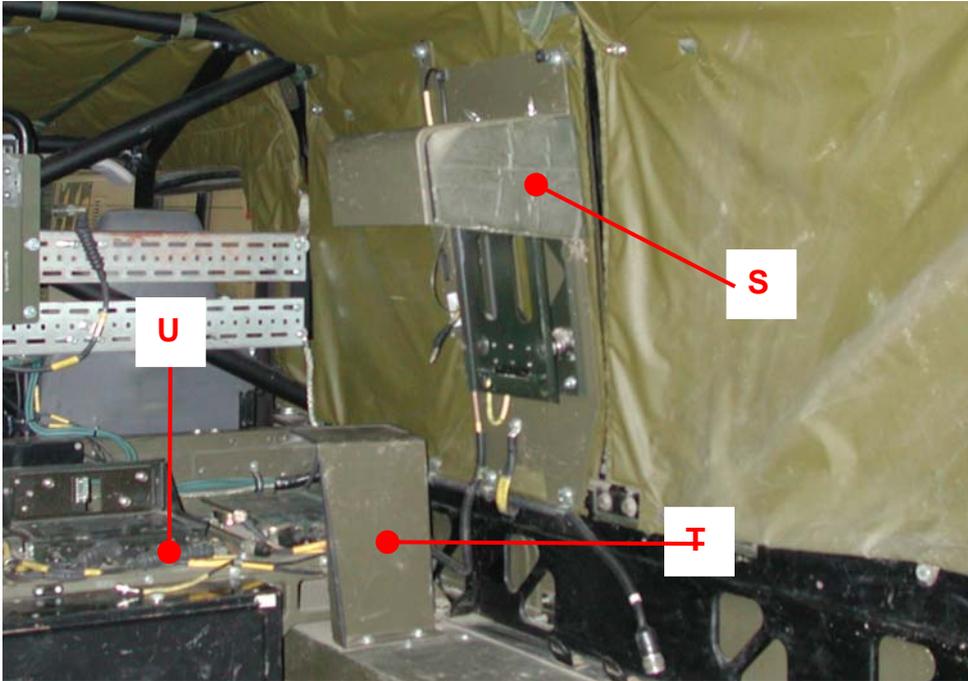
Photograph 8

Equipment Rack/Shroud Removal (Component S)

- 9.53 Disconnect earth strap from Equipment Rack mounting panel.
- 9.54 Remove the fixings securing the Equipment Rack/Shroud Assembly to the roll protection cage and body side inner panel.
- 9.55 Remove the Equipment Rack/Shroud Assembly complete with any associated wiring.

Equipment Guard Removal (Component T)

9.56 Remove the fixings securing the Equipment Guard to the top of the body side panel and remove guard.



Photograph 9

Equipment Table Removal (Component U)

9.57 Disconnect earth straps from the table.

9.58 Remove fixings securing the table to the bodyside panels and the FFR battery box.

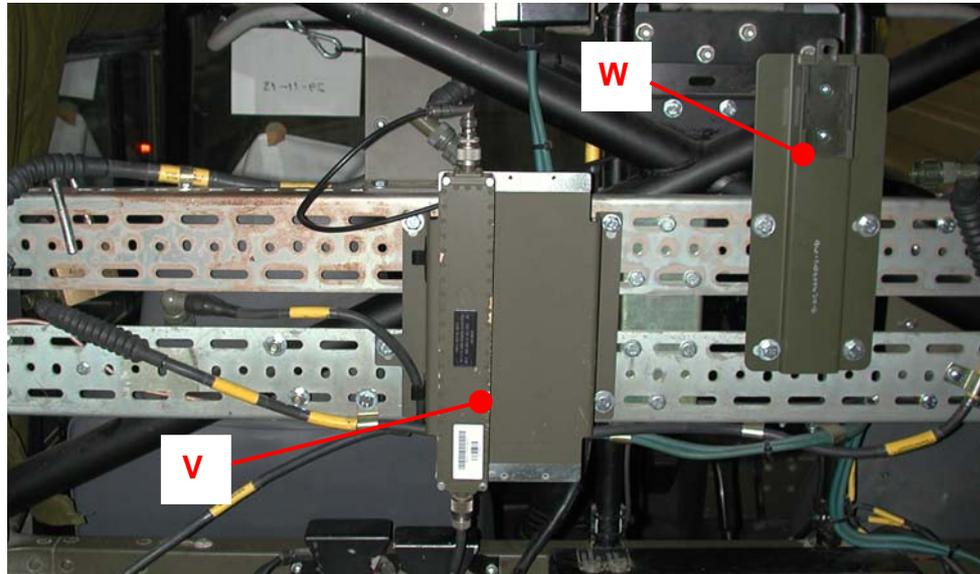
9.59 With assistance remove the table complete with auxiliary mounts and any additional wiring from the vehicle.

Module Removal (Component V)

9.60 Remove the fixings securing the module to the dexion racking and remove module with any associated wiring.

Holder Removal (Component W)

9.61 Remove the fixings securing the holder to the dexion racking and remove holder.



Photograph 10

FFR Standard Parts Removal

9.62 Remove battery isolation switch, terminal box, relay box, power import/export socket and associated cables in the reverse order of procedure given in Cat 811 Modification Instruction No. 16.

WARNINGS:

THE RADIO POWER FUSE BOX BEHIND THE FRONT SEATS MUST NOT BE REMOVED. THIS FUSE BOX IS USED TO ISOLATE THE POWER FROM THE FFR ALTERNATOR.

TO ISOLATE THE OUTPUT FROM THE FFR ALTERNATOR THE FAST FUSE MUST BE REMOVED FROM THE RADIO POWER SUPPLY FUSE BOX. THE SPARE FUSE MUST ALSO BE REMOVED TO PREVENT REINSTALLATION BY THE USER.

FFR Battery Box/Table Removal

- 9.63 Remove battery ventilation pipe work and fittings.
- 9.64 Disconnect earth straps from the table (if fitted).
- 9.65 Remove fixings securing the battery box to the vehicle floor.
- 9.66 With assistance remove battery box from the vehicle.

Redundant Bracketry Removal

9.67 Remove any redundant mounting brackets and cable clamps from inside rear of the vehicle

Redundant Wiring Removal

9.68 Remove any redundant wiring and cable ties from inside rear of the vehicle. If necessary remove connectors to enable wiring to be pulled through panels etc.

Hardtop Removal

NOTE:

If hardtop needs replacement due to removal of Input Panel (Component D) etc leaving large holes in the hardtop follow the procedure below.

- 9.69 Remove spare wheel blanking plate from hardtop and retain.
- 9.70 Remove rear door top hinge fixings from hardtop and retain fittings.
- 9.71 Remove fixings securing hardtop and retain fittings.
- 9.72 With assistance remove hardtop from vehicle.

INSTALLATION**Intermediate hood stick Installation**

NOTE:

On vehicles previously fitted with an air conditioning module on the roof an intermediate hood support will need to be installed.

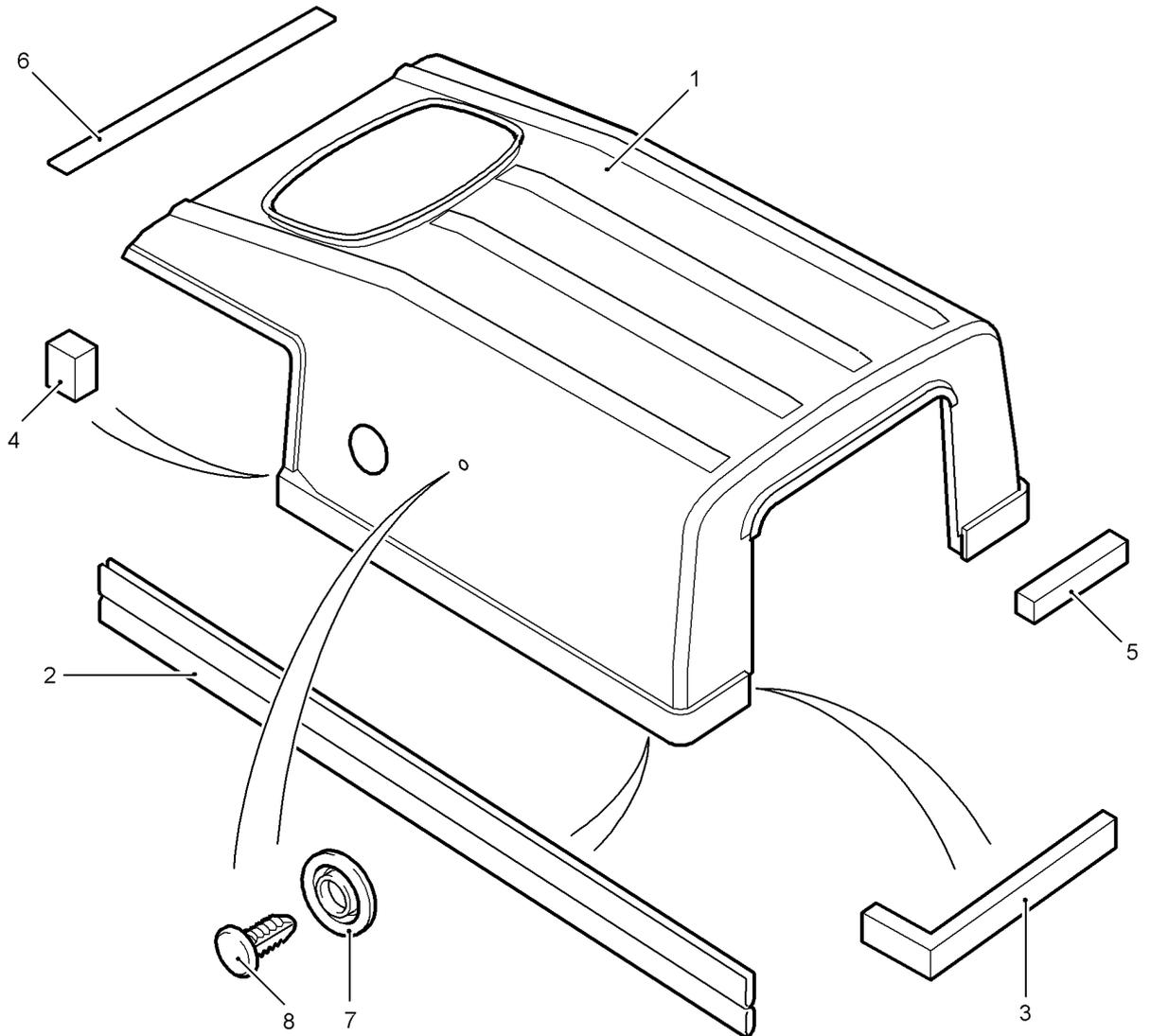
9.73 Install intermediate hood support (item 1) and secure with screws (item 2), washers (item 3) and nuts (item 4).

NOTE:

Refer to Cat 811 Modification Instruction No. 39. Check torque of all roll over protection system bolts.

Hardtop Installation

- 9.74 With assistance install hardtop (item 5), seals (items 6 and 7) and plastic strip (item 8) on vehicle. Fit seals as shown in Fig 1.
- 9.75 Install fixings previously removed to secure hardtop.
- 9.76 Install fixings to secure the rear door top hinge to the hardtop.
- 9.77 Refit the spare wheel blanking plate removed from the previous hardtop.



MIL2312

- | | | | |
|---|--------------------|---|------------------------------|
| 1 | Hardtop | 5 | Seal, rear |
| 2 | Seal bodyside | 6 | Plastic strip, self adhesive |
| 3 | Seal, rear corner | 7 | Grommet |
| 4 | Seal, front corner | 8 | Plug |

Fig 1 Hardtop installation

Rear Seats Installation

NOTE:

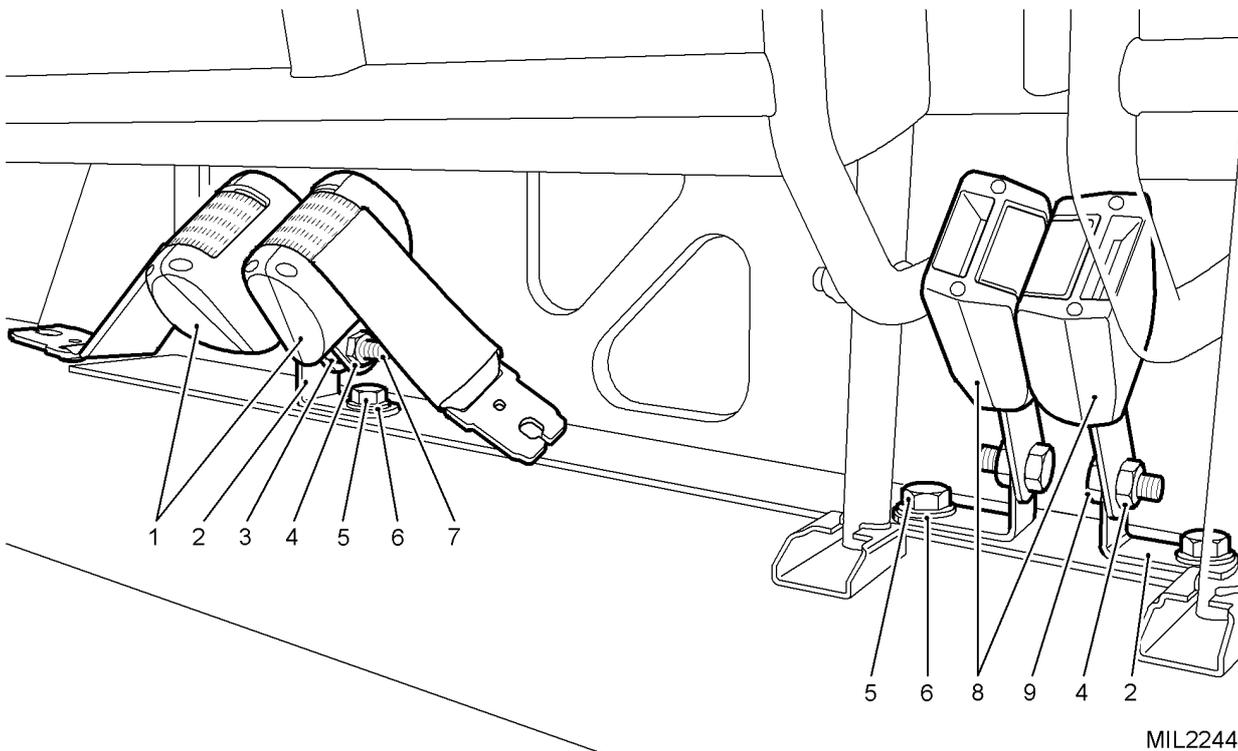
Check to make sure that the rear seat anchorage brackets are already fitted to the bodyside assembly.

9.78 If required install the rear seat anchorage brackets (item 15) and secure to the bodyside assembly with pop rivets (item 16).

9.79 Secure the rear seats (item 11) to the internal bodyside assembly with screws (item 12), washers (item 13) and nuts (item 14).

Rear Seat Belts Installation

- 9.80 Fold the rear seats to improve access to the seat belts
- 9.81 Using the existing mounting points fit mounting brackets (item 19) using 7/16 x 25 bolts (item 22) with shake proof washer (item 25).
- 9.82 Fit ARB reels (item 17) as shown in Fig 2. The reels are mounted back to back in middle of the seat and are fixed to a single mounting bracket with a 7/16 x 40 bolt (item 20) with spacer (item 23) and nut (item 24).
- 9.83 Fit the seat buckles (item 18) to their mounting brackets using a 7/16 x 20 bolt (item 21) and nut (item 24).
- 9.84 All of the rear seat belt fixings should be tightened to a torque of 32Nm.



- | | | | |
|---|--------------------|---|--------------------|
| 1 | Seat belt reel | 6 | Shake-proof washer |
| 2 | Mounting bracket | 7 | Bolt 7/16 UNF x 40 |
| 3 | Spacer | 8 | Seat belt buckle |
| 4 | Nut 7/16 UNF | 9 | Bolt 7/16 UNF x 20 |
| 5 | Bolt 7/16 UNF x 25 | | |

Fig 2 Rear seat belt installation

LH Jerrycan Stowage Compartment

9.85 Fit webbing straps (items 26 and 27), reinforcing plates (item 28) to jerrycan storage compartment using existing holes and rivets (item 29).

9.86 Fit hood staples (item 30) to jerrycan storage compartment using existing holes and rivets (item 31).

9.87 Apply Label (item 32) to jerrycan storage compartment door.

Emergency Hammer

NOTE:

Refer to procedure given in Cat 811 Modification Instruction No. 35 for the fitting of an Emergency Hammer (item 33).

Outstanding Modifications

NOTE:

Check the Cat 811 for any TUM(HS) GS modifications that have not yet been fitted and action as required.

Final Procedures

9.88 All fasteners affected during the modification should be now tightened to their respective torque settings.

9.89 Inspect rear floor matting, repair or replace as necessary.

9.90 Reconnect the vehicle batteries.

9.91 Paint any areas of bare metal or areas that are the wrong colour NATO green.

TESTING AFTER EMBODIMENT

10 Nil.

EFFECT ON WEIGHT

11 TBC

PUBLICATION AMENDMENTS

12 Nil

