TRUCK UTILITY LIGHT (TUL) HS

AND TRUCK UTILITY MEDIUM (TUM) HS

MODIFICATION INSTRUCTION NO. 42

Sponsor: OSVP
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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)** (Comprising)	1
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** (Comprising)	1
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.

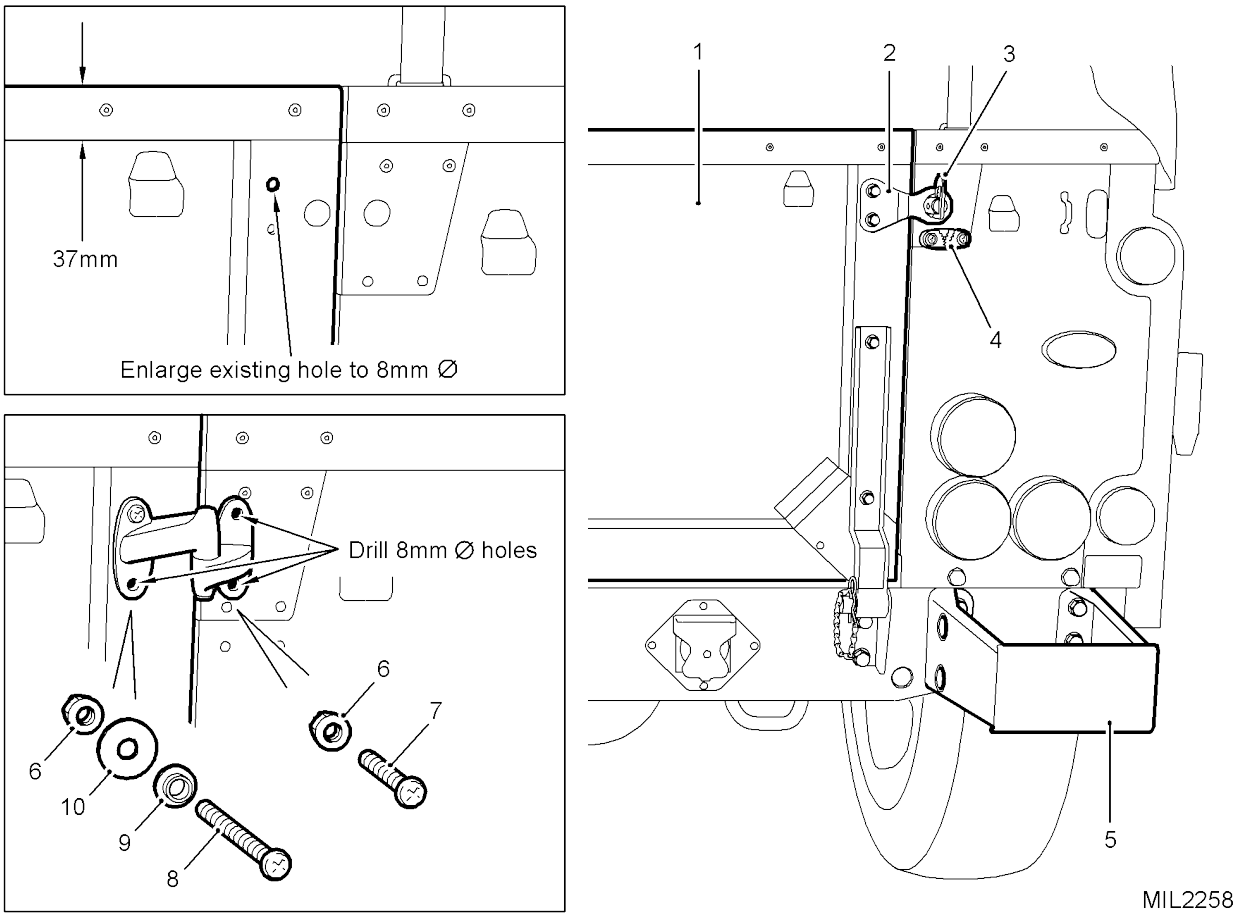
9.2 Remove the RH side bumperette, the RH rope cleat, the RH antiluce cotter and closure plate. Removing the closure plate will also result in the inner cable/chain bracket being removed). Retain these parts for the present. (Refer to Fig 1).

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

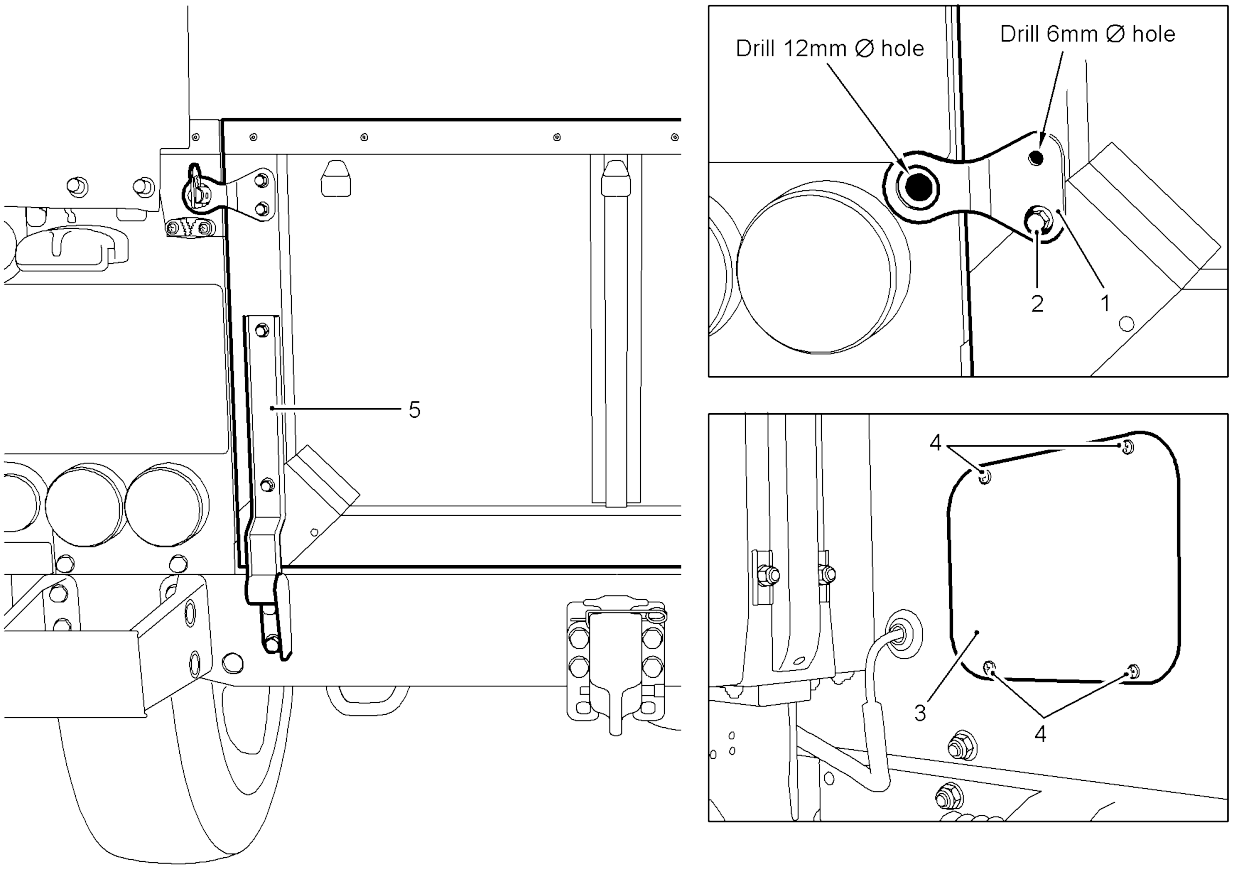
9.7 Drill out the lower tailgate hole in the tailgate to 8mm dia, deburr the hole. Fit the second hinge (item 1) using the lower hole of the hinge and M8 fixings (Items 3, 4, 5 and 6) ensuring the nylon washer (item 4) is fitted between the hinge and the tailgate. Ensure that the hinge and hinge pin 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.



1 Closure plate
2 Fixings
3 LH under body lamp access panel
4 Screws
5 LH bottom tailgate hinge

Fig 2 Fitting the Antiluce Cotter and Closure Plate

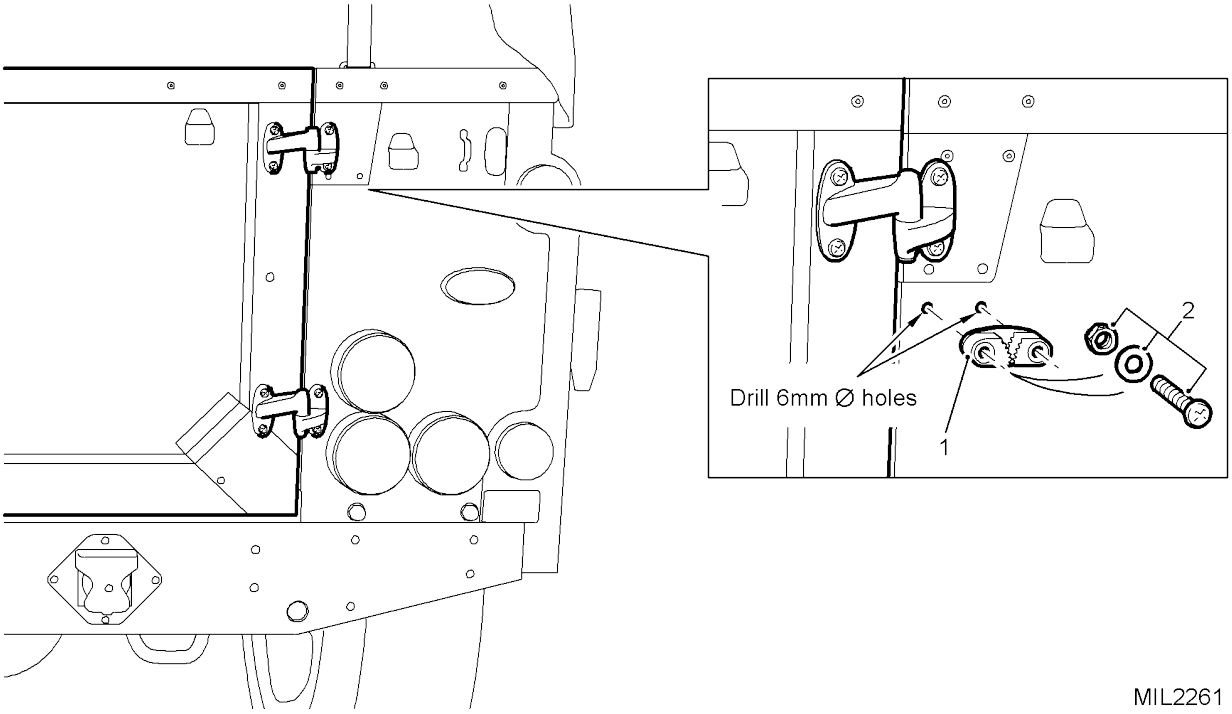
9.10 Fit the antiluce cotter closure plate to the lower hole of both the original hinge and the antiluce cotter closure plate. Ensure the plate is correctly aligned and use as a template to drill the second fixing 6mm hole, secure with fixings. (Refer to Fig 2).

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).



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.

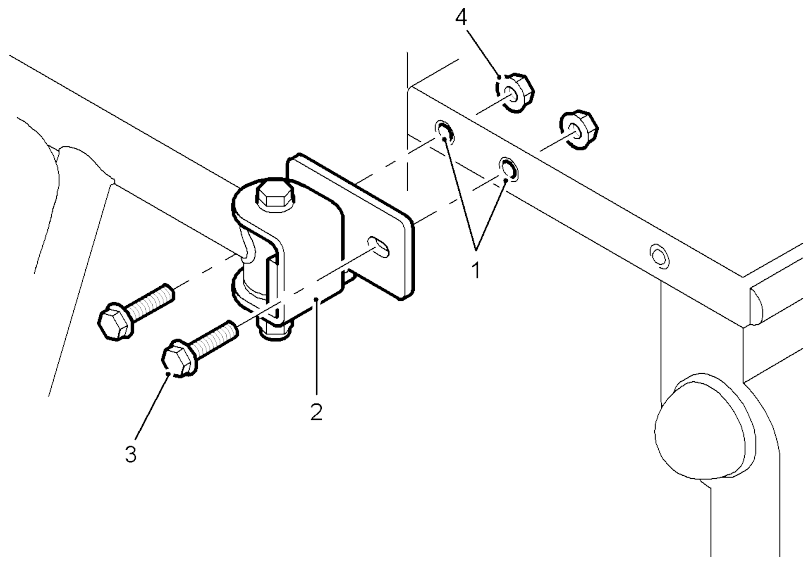
NOTE:

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).



1	Pop rivets	3	Screw, M10
2	Top hinge	4	Nyloc nut, M10

Fig 4 Top Hinge of Swing Away Carrier Frame Complete Assembly

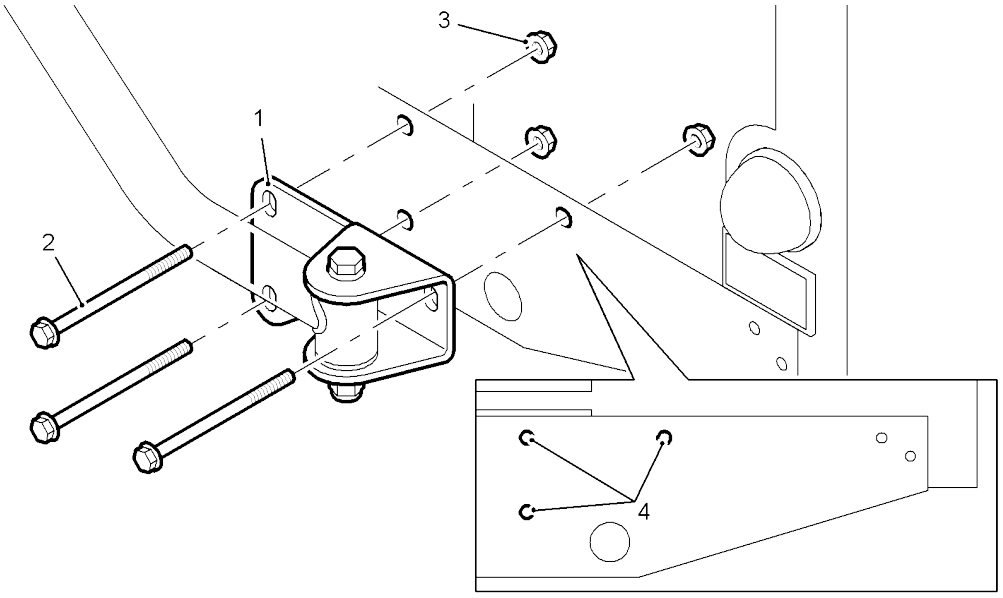
NOTE:

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).

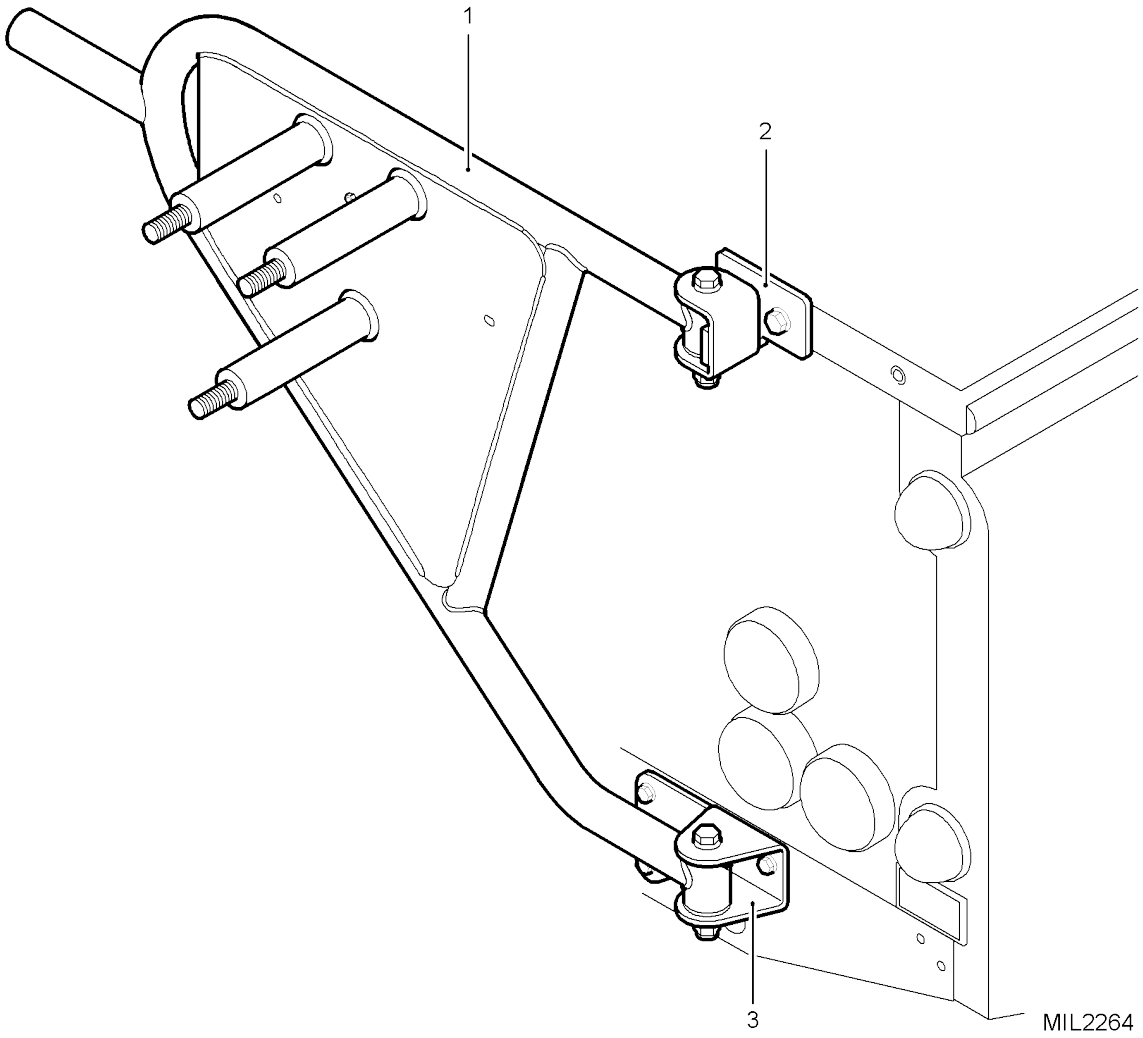
NOTE:

To ensure that the wheel carrier fits squarely the upper and lower hinges should be parallel to the edge of the body.



1	Bottom hinge	3	Nyloc nut, M8
2	Bolt, 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

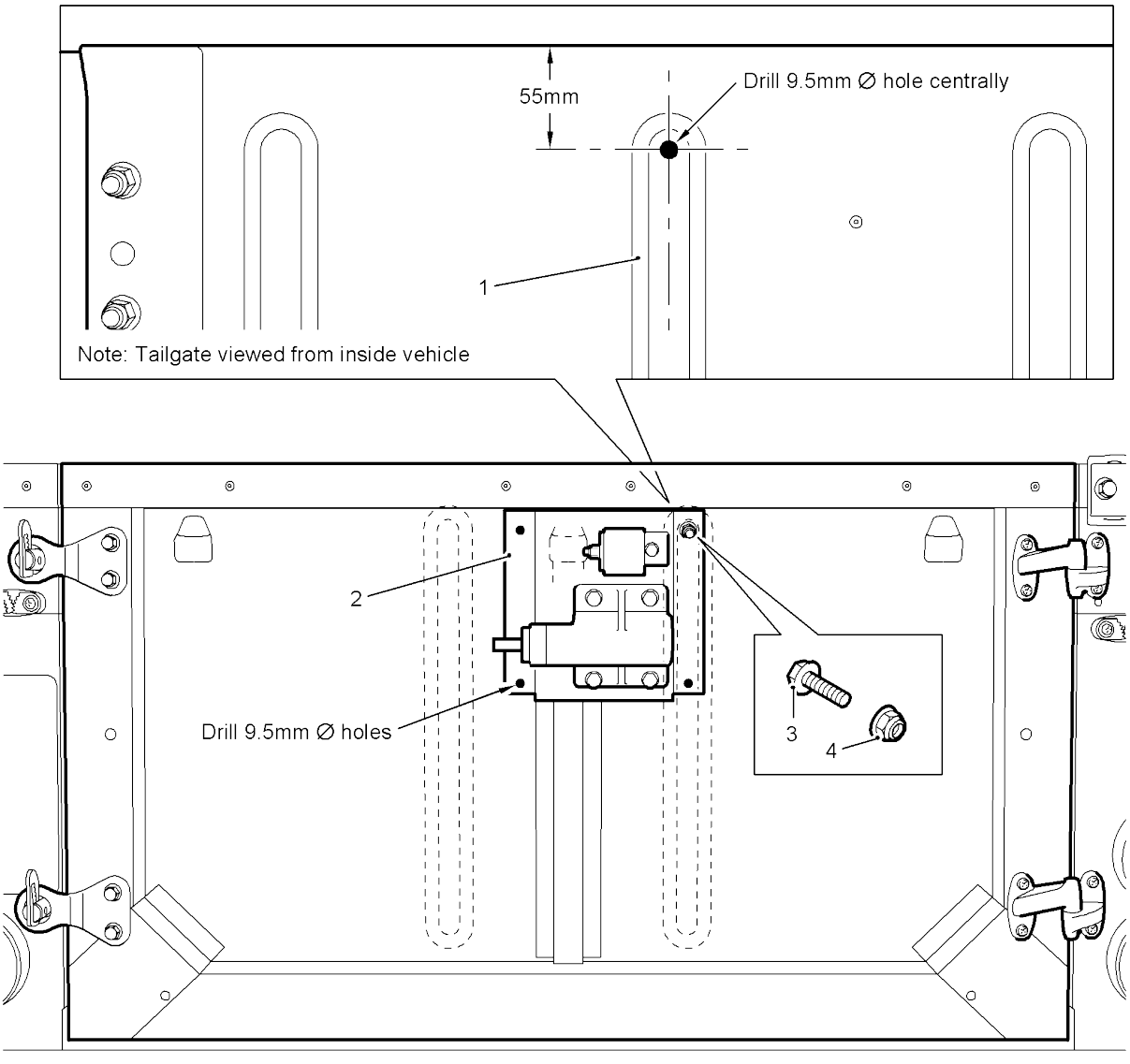
9.19 Fitting the Tailgate Stiffening Plate.

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. (Refer to Fig 7).

9.19.4 Fit the Tailgate Stiffening Plate to the tailgate, secure with screws (item 34) and nuts (item 35).



1	Strengthening Rib	3	Screw, M8
2	Door Plate	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.

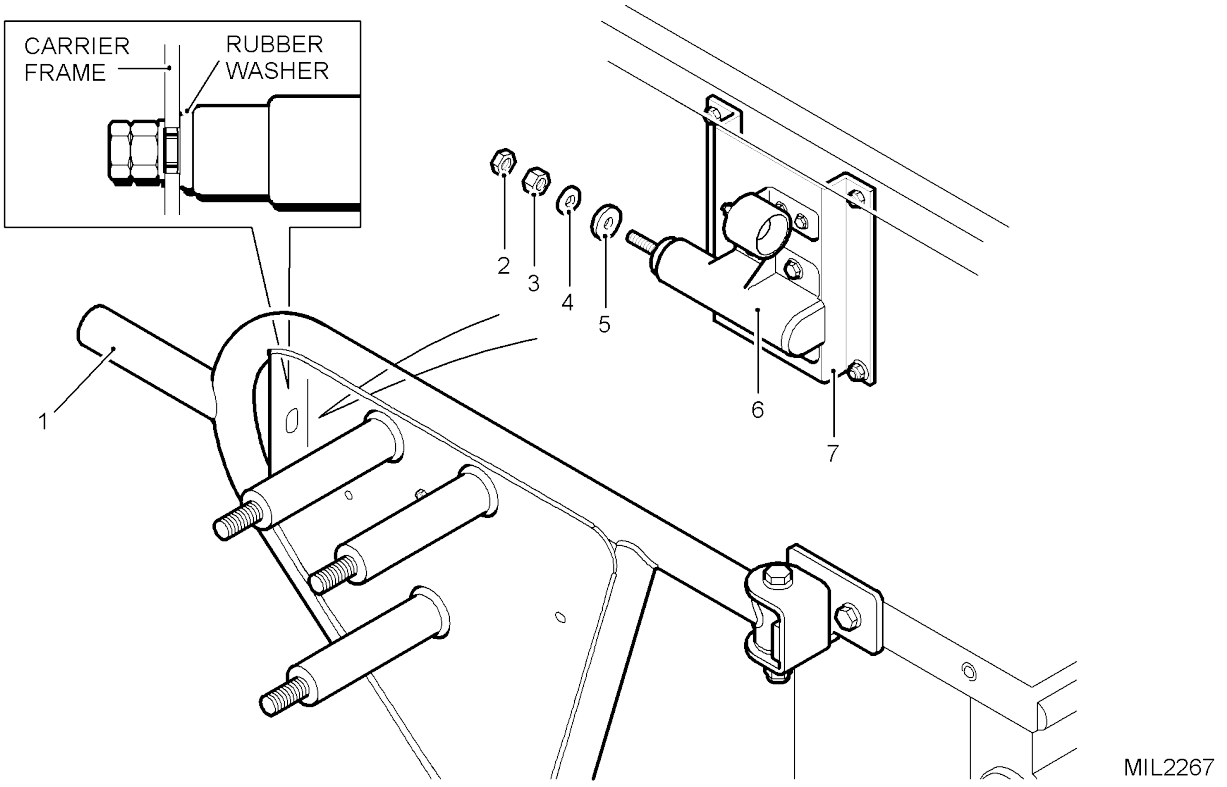
9.20.3 Close the tailgate and carrier, centralise the piston bolt.

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).



1	Wheel carrier	5	Rubber washer, M12
2	Lock nut, M12	6	Piston carrier assembly
3	Nut, M12	7	Door plate
4	Washer, M12		

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:

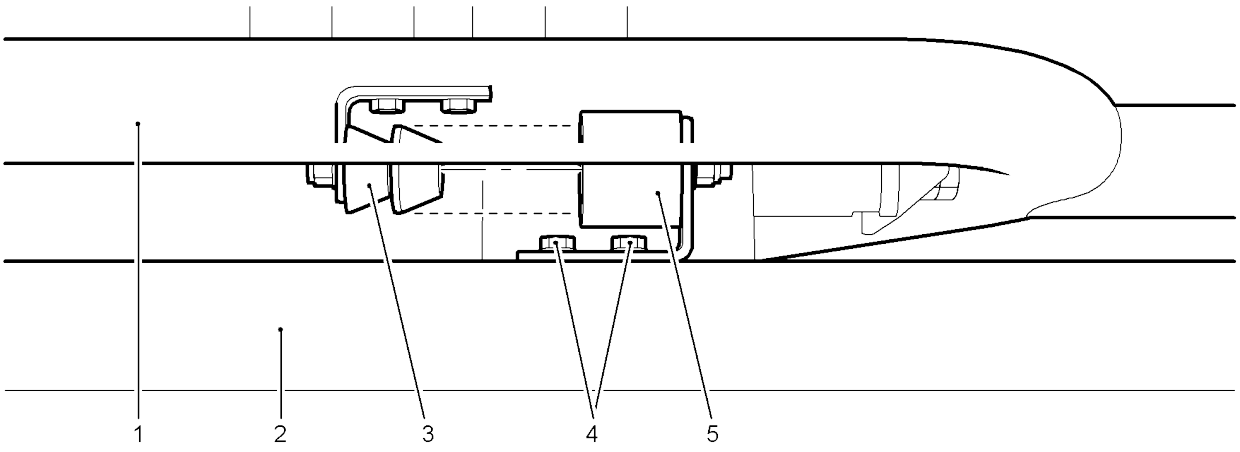
The safety catch is factory fitted and set up prior to despatch and no further adjustment should be necessary.
If adjustment is required to reduce door opening angle refer to procedures 9.20.9 and 9.20.10 below.

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°.

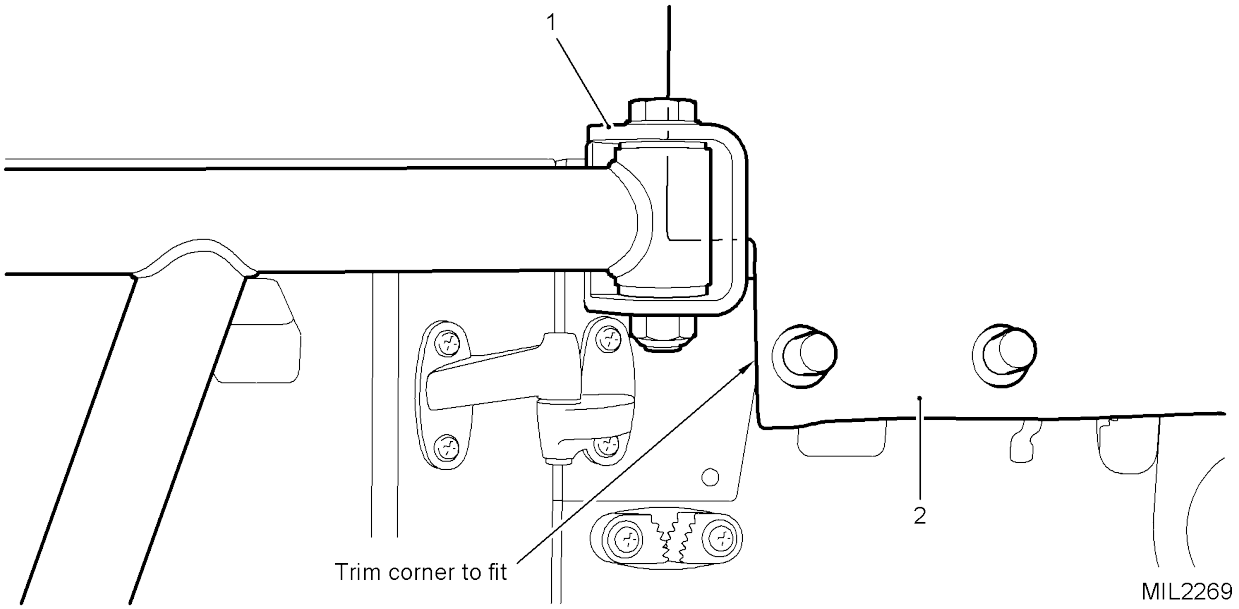


Note: Swing Away Carrier viewed from above MIL2283

1 Swing away carrier frame
2 Tailgate
3 Door holder male rubber
4 M6 Bolts -mounting bracket
5 Door holder female 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).



1 Top hinge 2 Canopy

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.

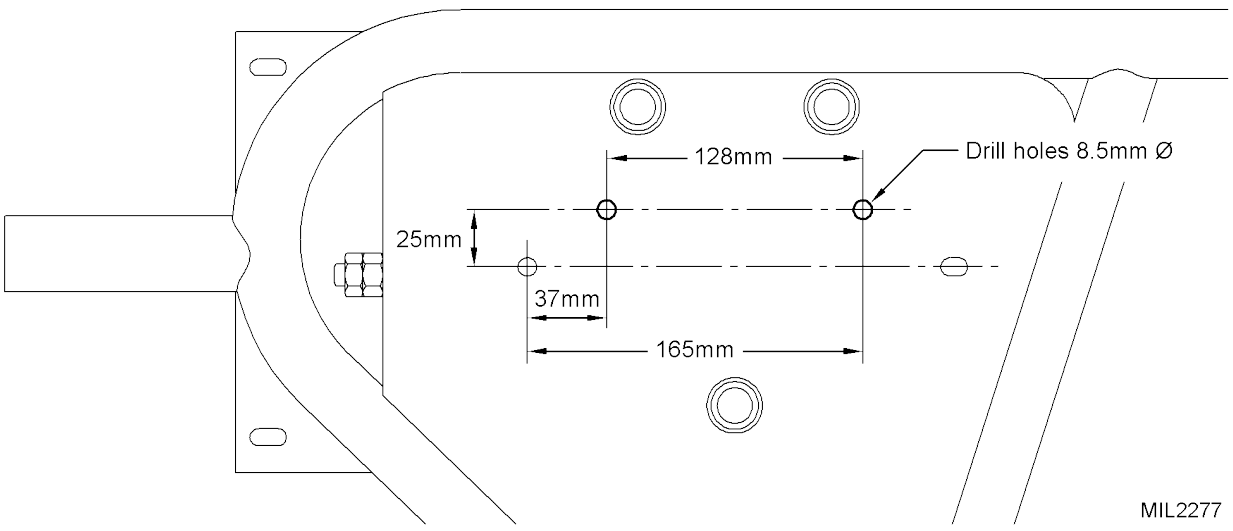
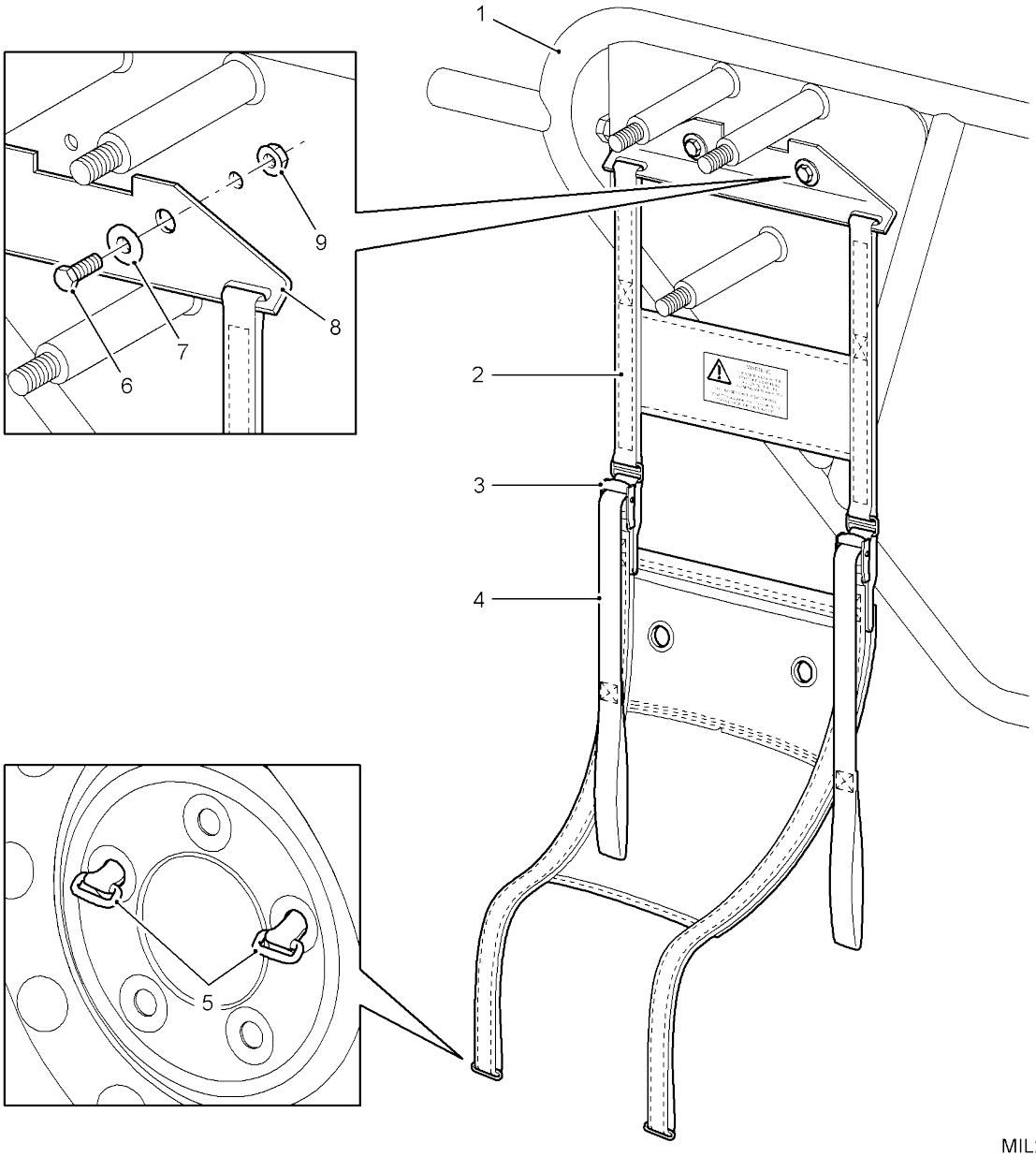


Fig 11 Drilling Spare Wheel Carrier

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).



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:

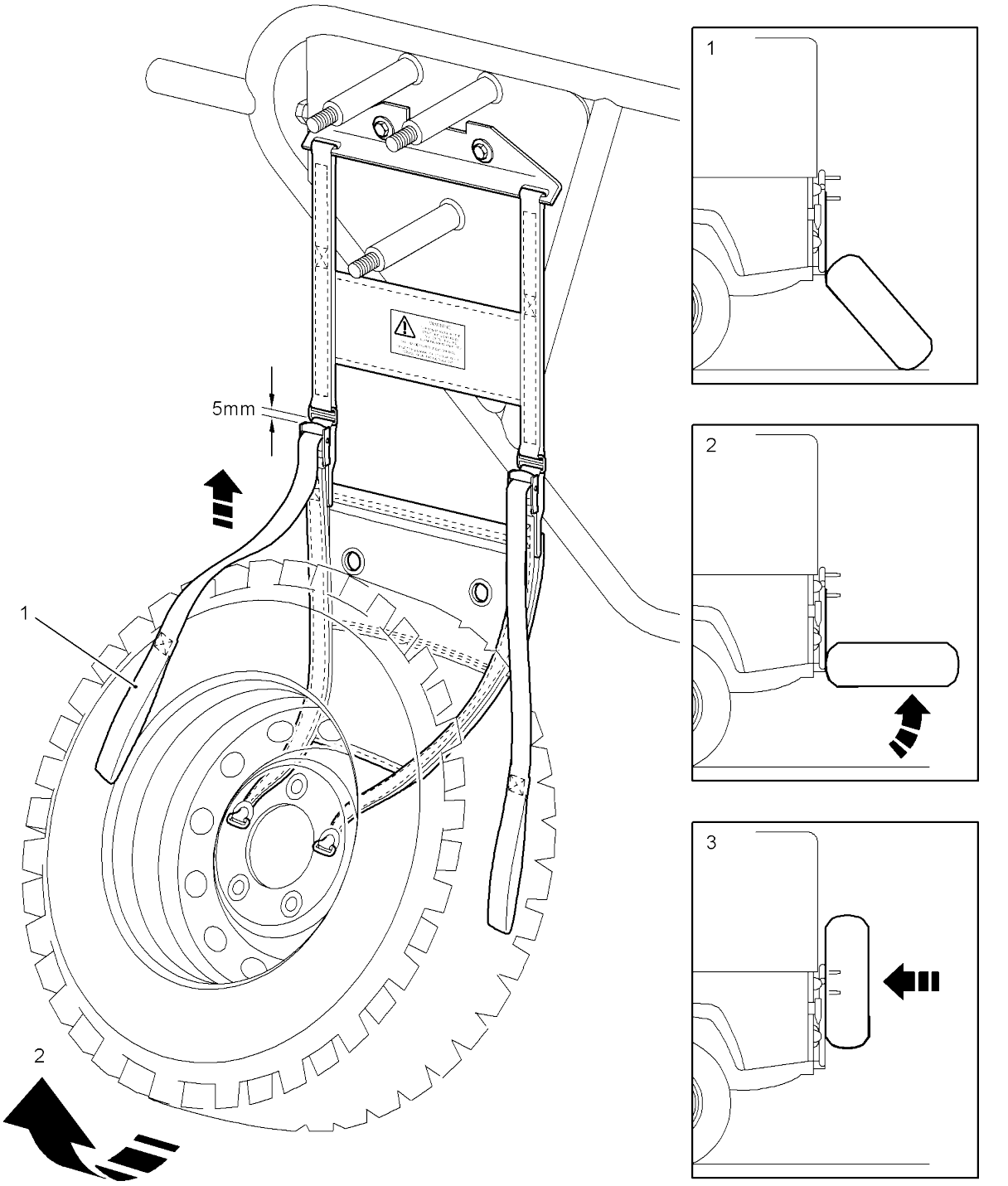
The plastic stops should be one wheel stud hole apart.

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).

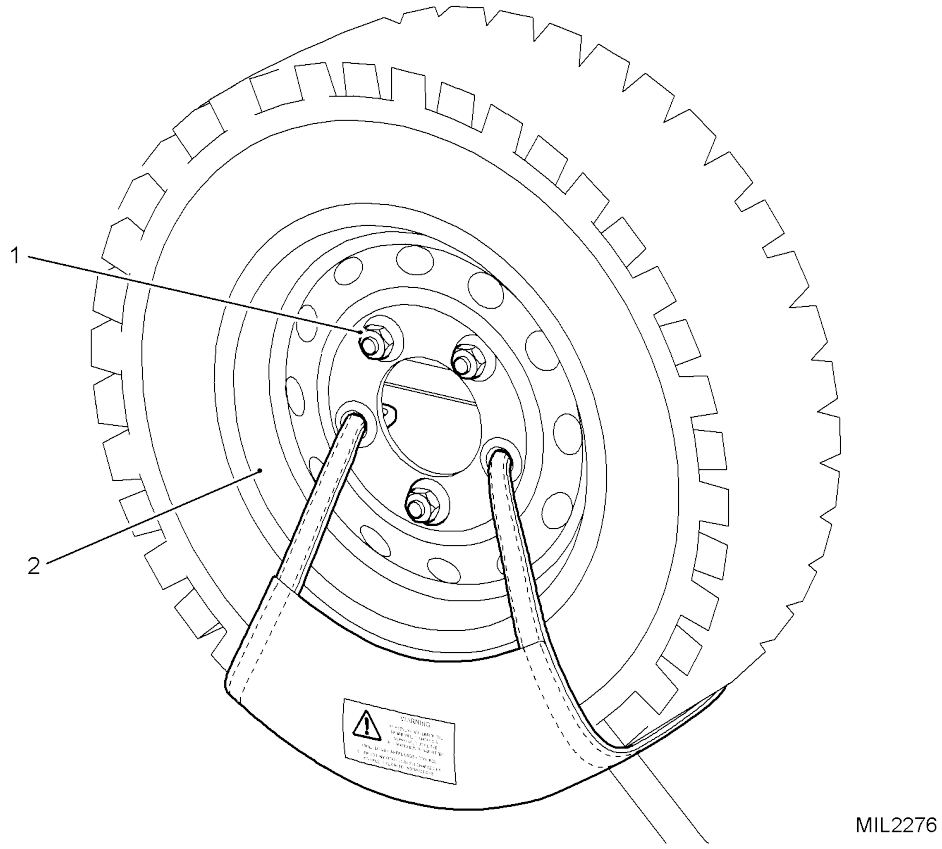
9.22.6 If the straps have been adjusted correctly the centre of the wheel should locate up against the wheel carrier. With both hands push the wheel upwards to locate the spare wheel onto the wheel studs on the carrier.



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).



1 Wheel nuts x3 2 Spare wheel

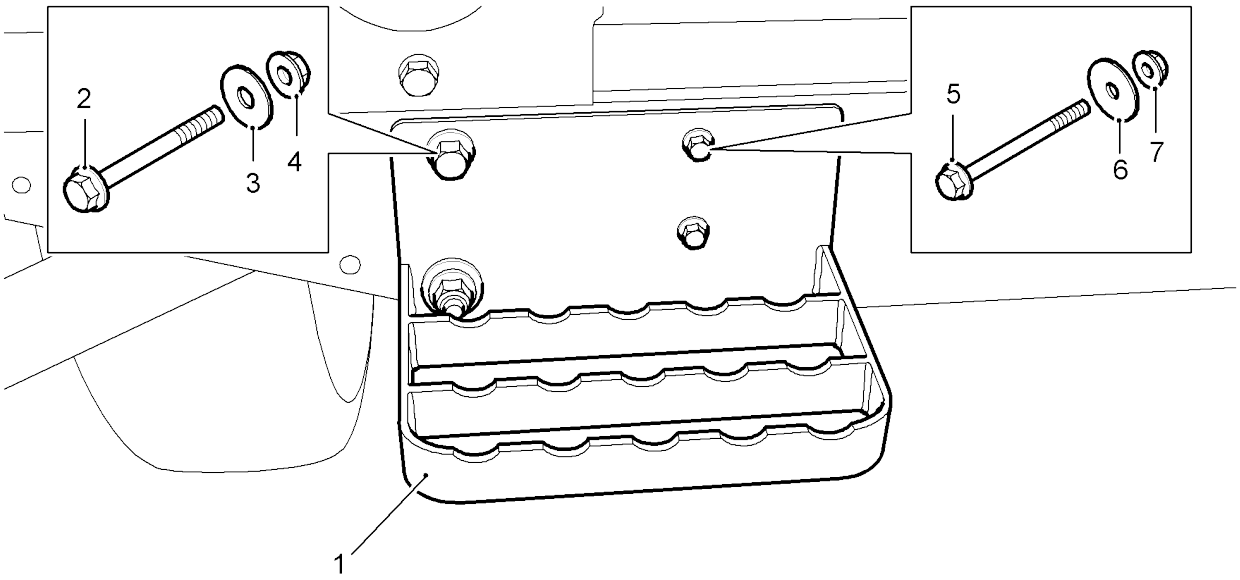
Fig 14 Securing the spare wheel

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).



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.

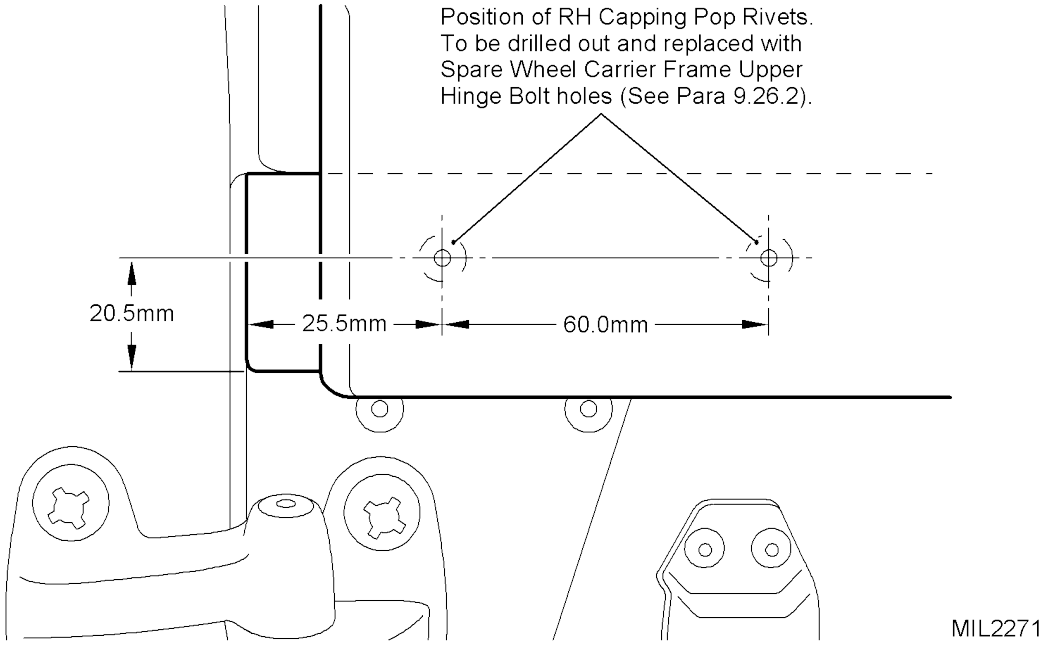
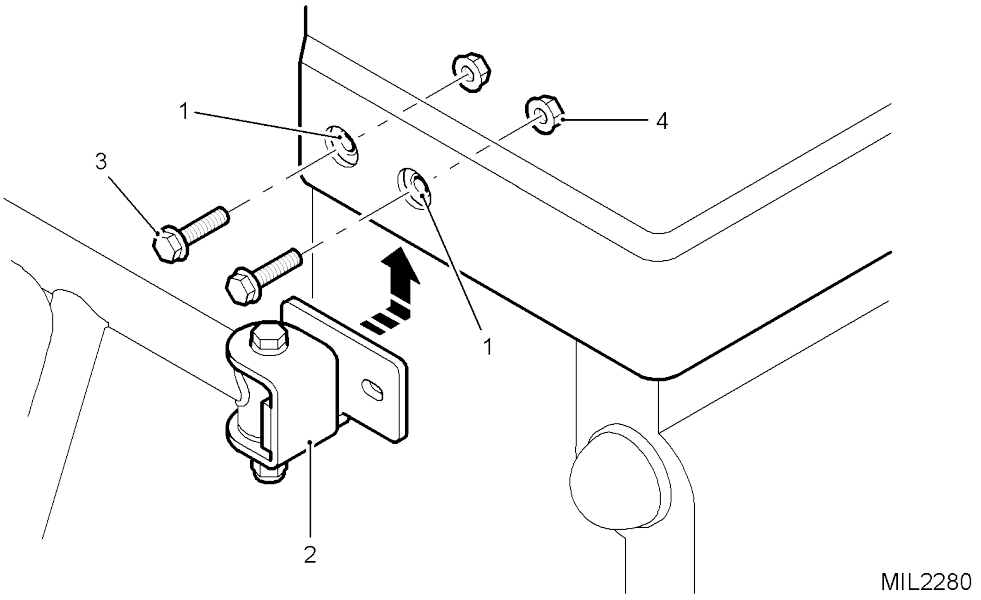


Fig 16 Location of Top Hinge Holes (in line with Capping Rivets)



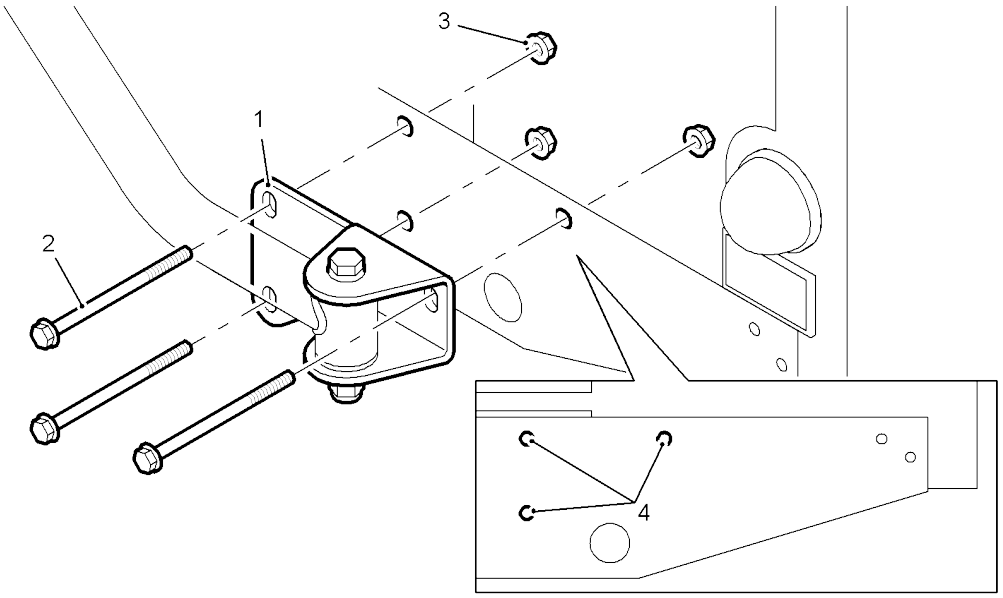
1	Pop rivets	3	Screw, M10
2	Top hinge	4	Nyloc nut, M10

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).

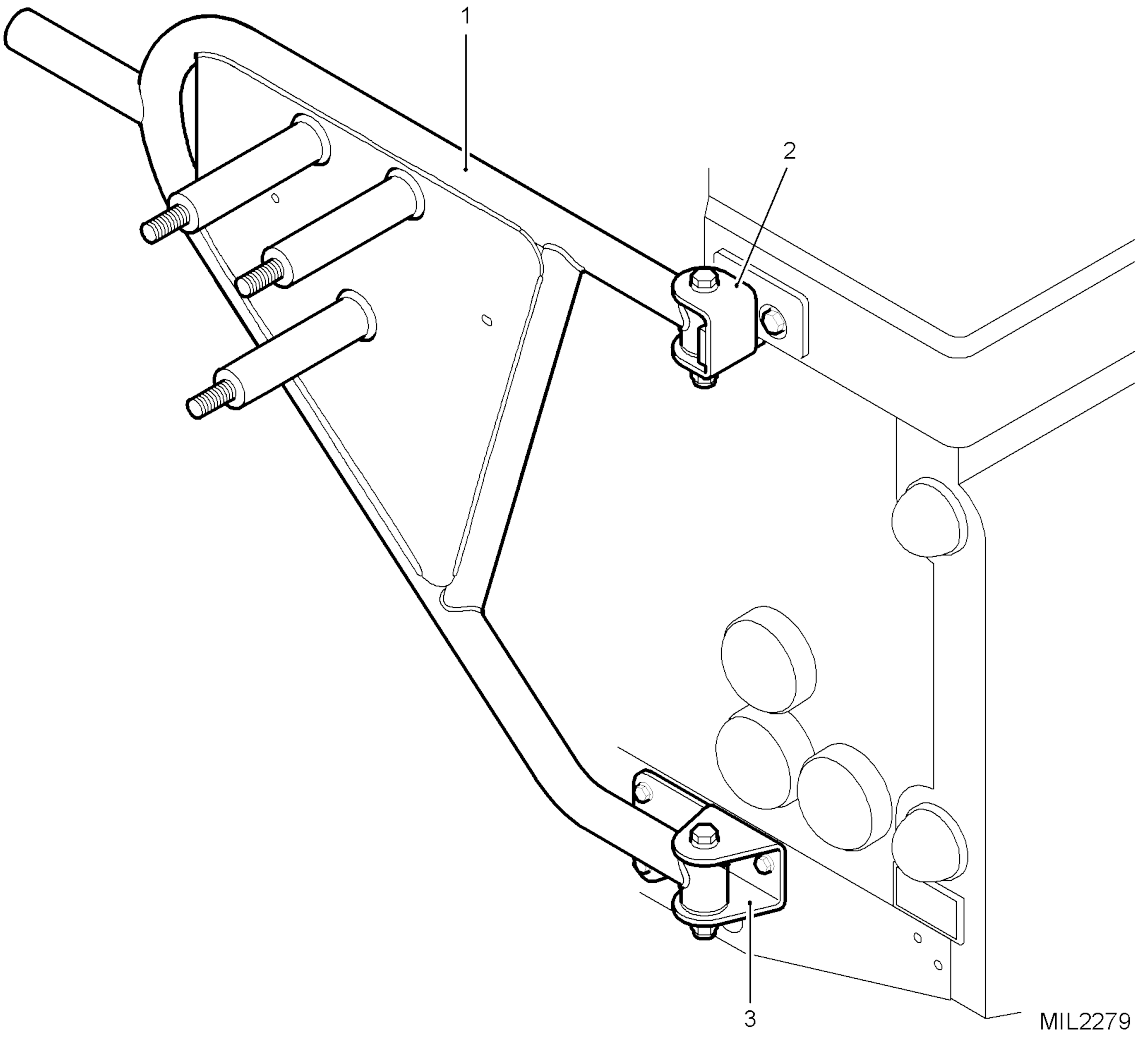
NOTE:

To ensure that the wheel carrier fits squarely the upper and lower hinges should be parallel to the edge of the body.



1	Bottom hinge	3	Nyloc nut, M8
2	Bolt, M8	4	Fixing holes

Fig 18 Bottom Hinge



1 Swing away carrier frame assembly
2 Top hinge
3 Bottom hinge

Fig 19 Wheel Carrier Fitting

9.27 Fitting the door stiffening plate.

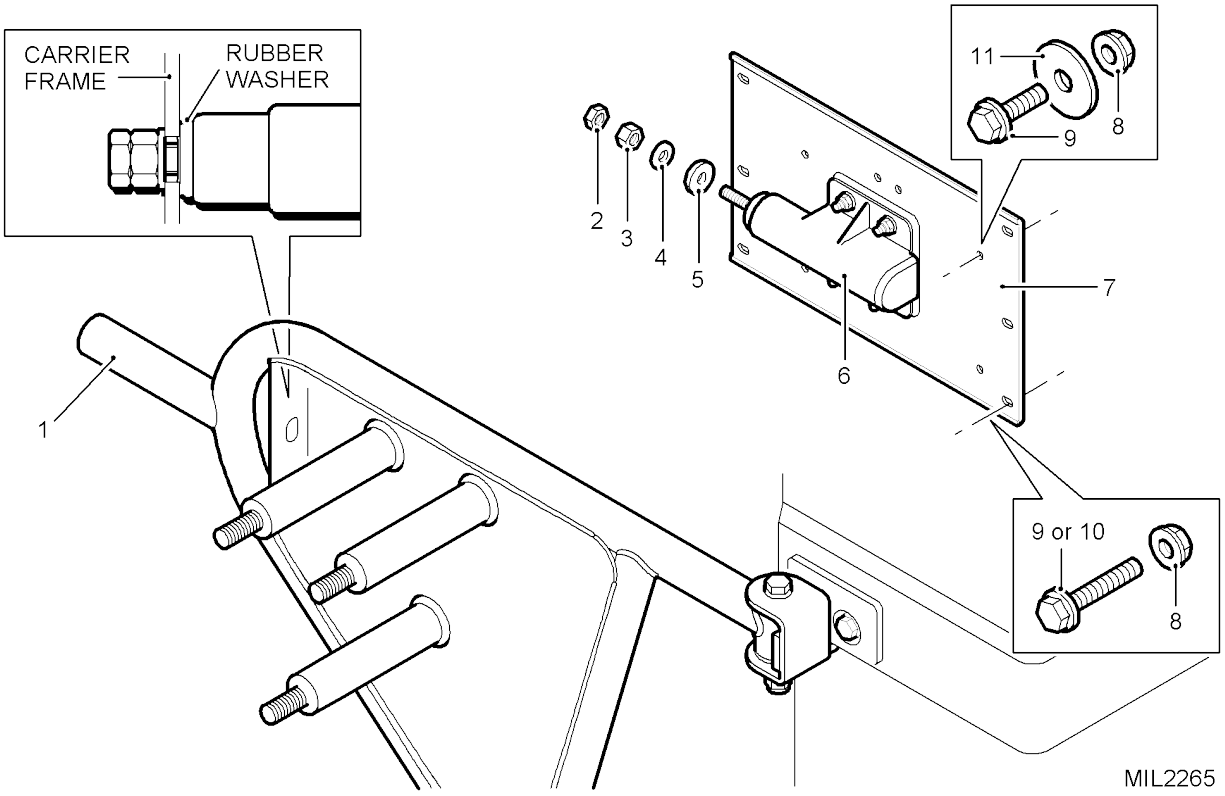
9.27.1 Remove the fixings securing the door interior handle.

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.

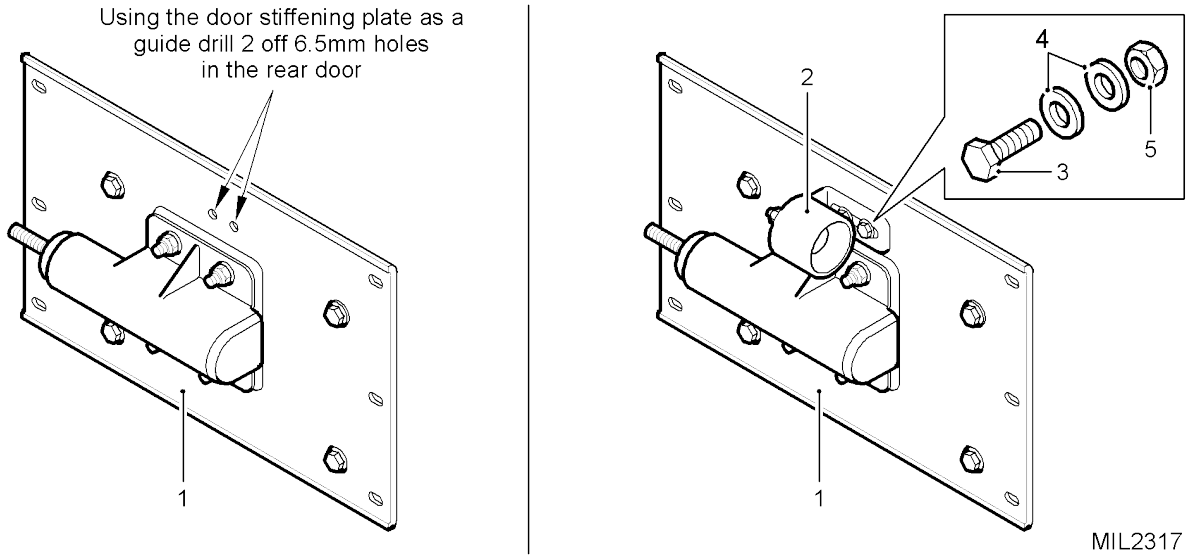
9.28.9 After the final installation is complete, check that the rear door opening angle does not exceed 85°. Indicated when the spare wheel and tyre assemble mounted on the swing away carrier obscures the vehicles R/H tail lights when the rear door is fully open. If adjustment is required, disconnect 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:

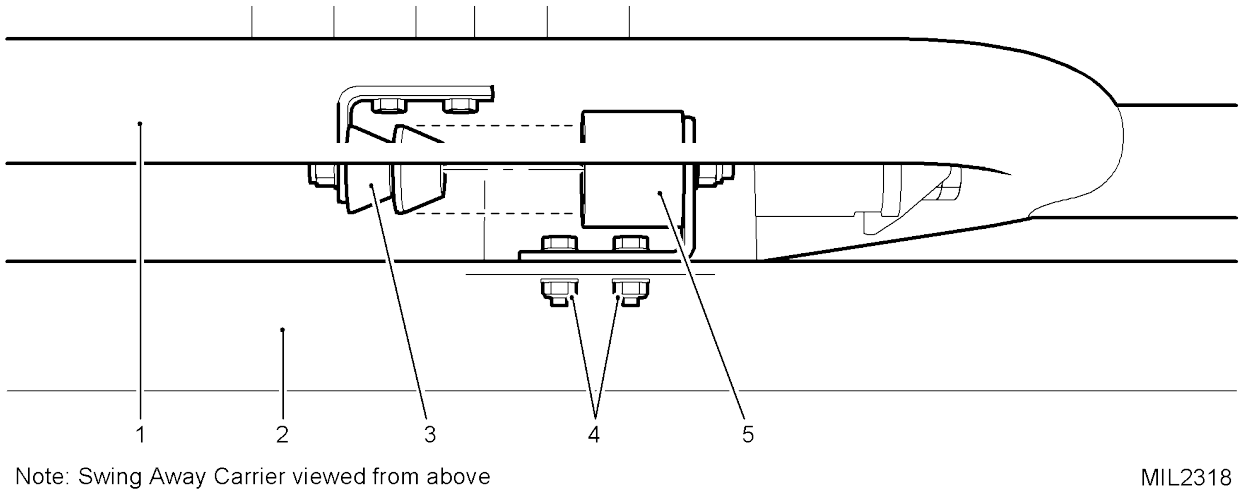
Moving the bracket towards the right hand side of the vehicle (when viewed from behind the vehicle) will reduce the opening angle of the door. Reconnect the swing away frame to the door at the piston assembly and check the opening angle. Adjust either way as required to obtain the maximum opening angle 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.



1 Door stiffening plate
2 Door holder female rubber
3 Bolt, M6 x 20
4 Washers, M6
5 Nyloc nut, M6

Fig 21 Door Holder Female Rubber Installation



1 Swing away carrier frame
2 Rear door
3 Door holder male rubber
4 M6 Nuts -mounting bracket
5 Door holder female rubber

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.

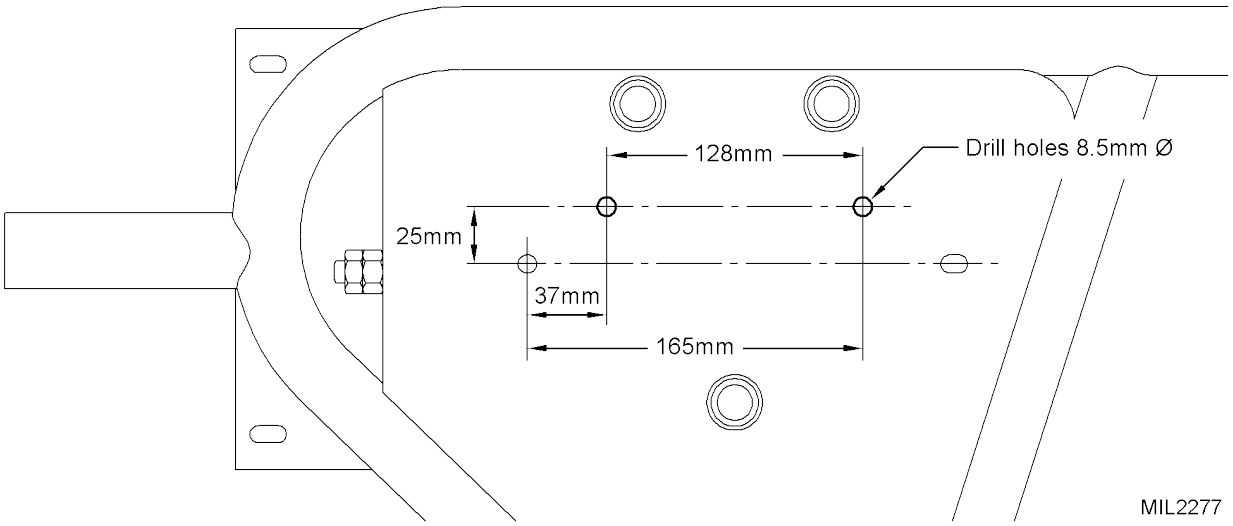
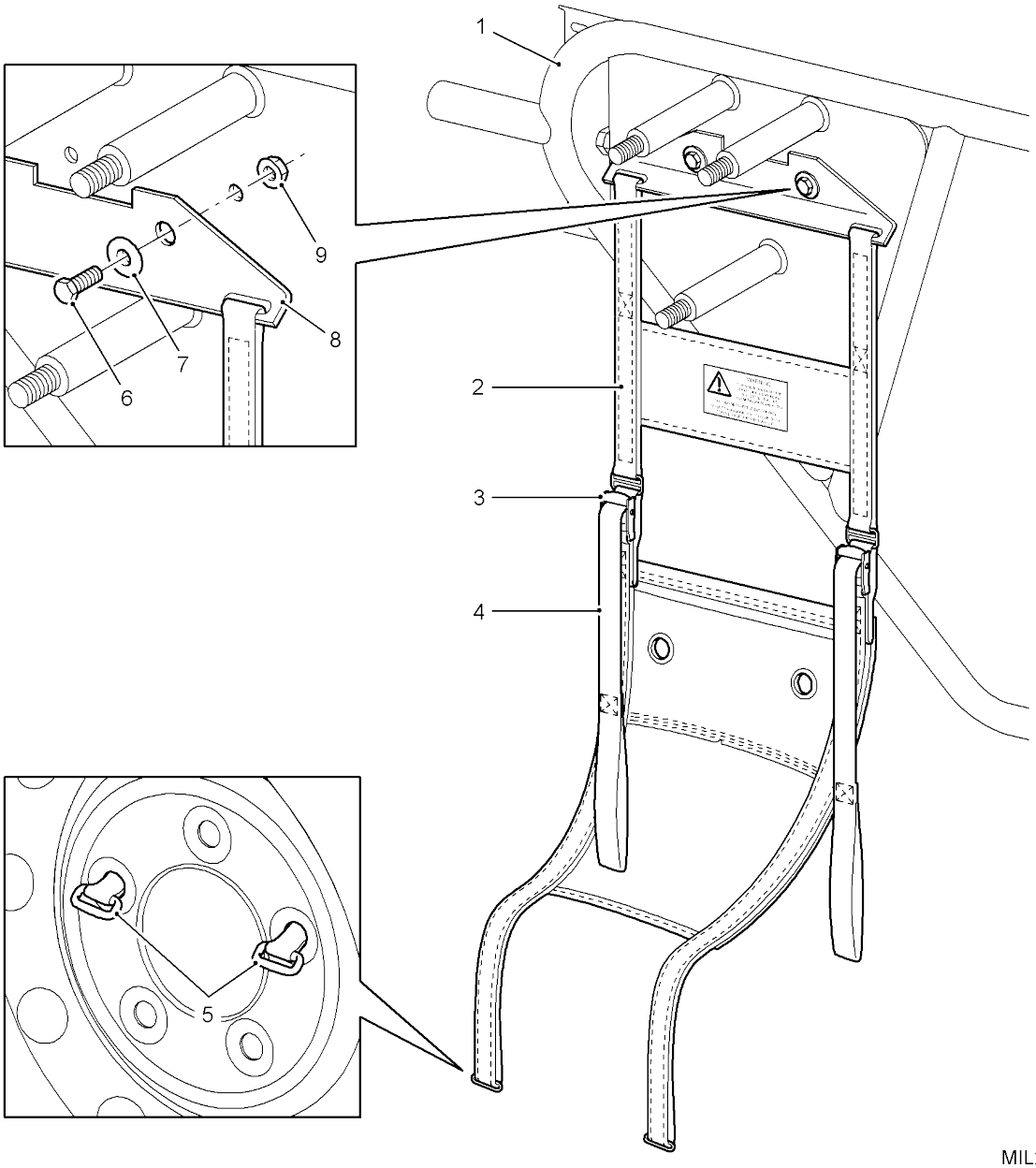


Fig 23 Drilling Spare Wheel Carrier

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).



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:

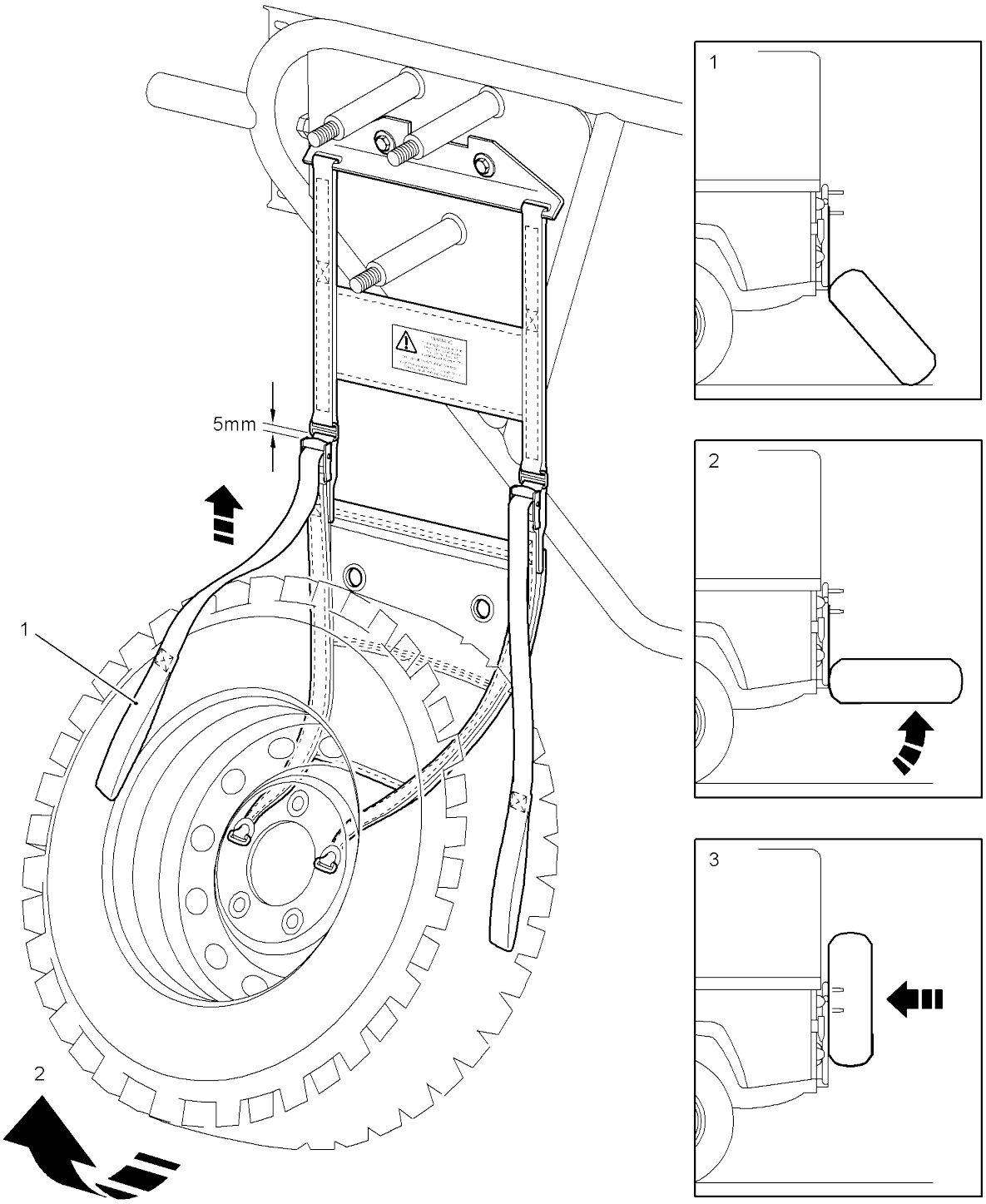
The plastic stops should be one wheel stud hole apart.

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).

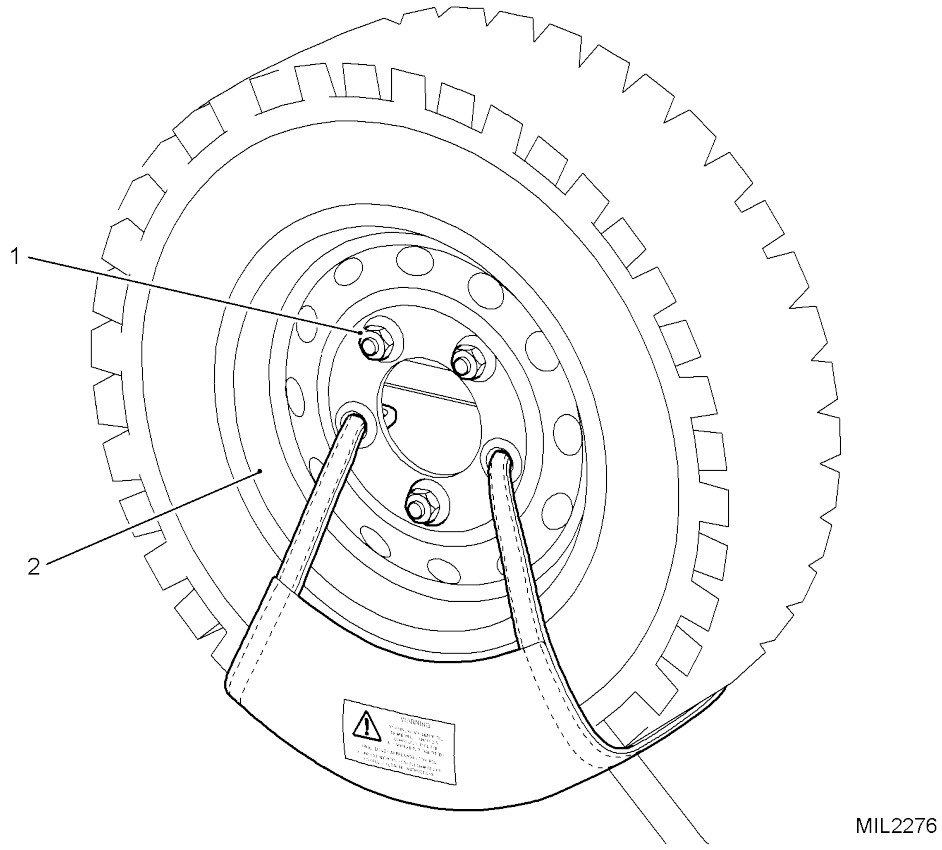
9.30.6 If the straps have been adjusted correctly the centre of the wheel should locate up against the wheel carrier. With both hands push the wheel upwards to locate the spare wheel onto the wheel studs on the carrier.



1 Adjust straps to correct length
2 Rotate wheel up against wheel carrier
3 Locate wheel on carrier

Fig 25 Lifting the Spare Wheel

9.30.7 Support the spare wheel in the stowed position while securing the wheel with wheel nuts (item 67). Tighten wheel nuts to 100Nm. (Refer to Fig 26).



1 Wheel nuts x3 2 Spare wheel

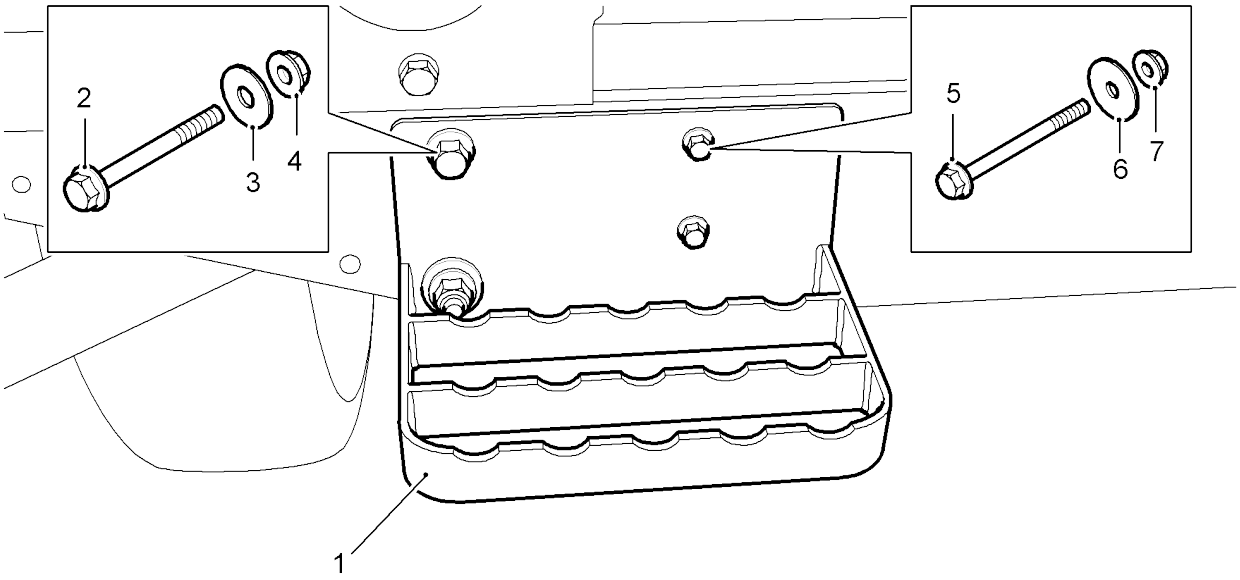
Fig 26 Securing the Spare Wheel

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).



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

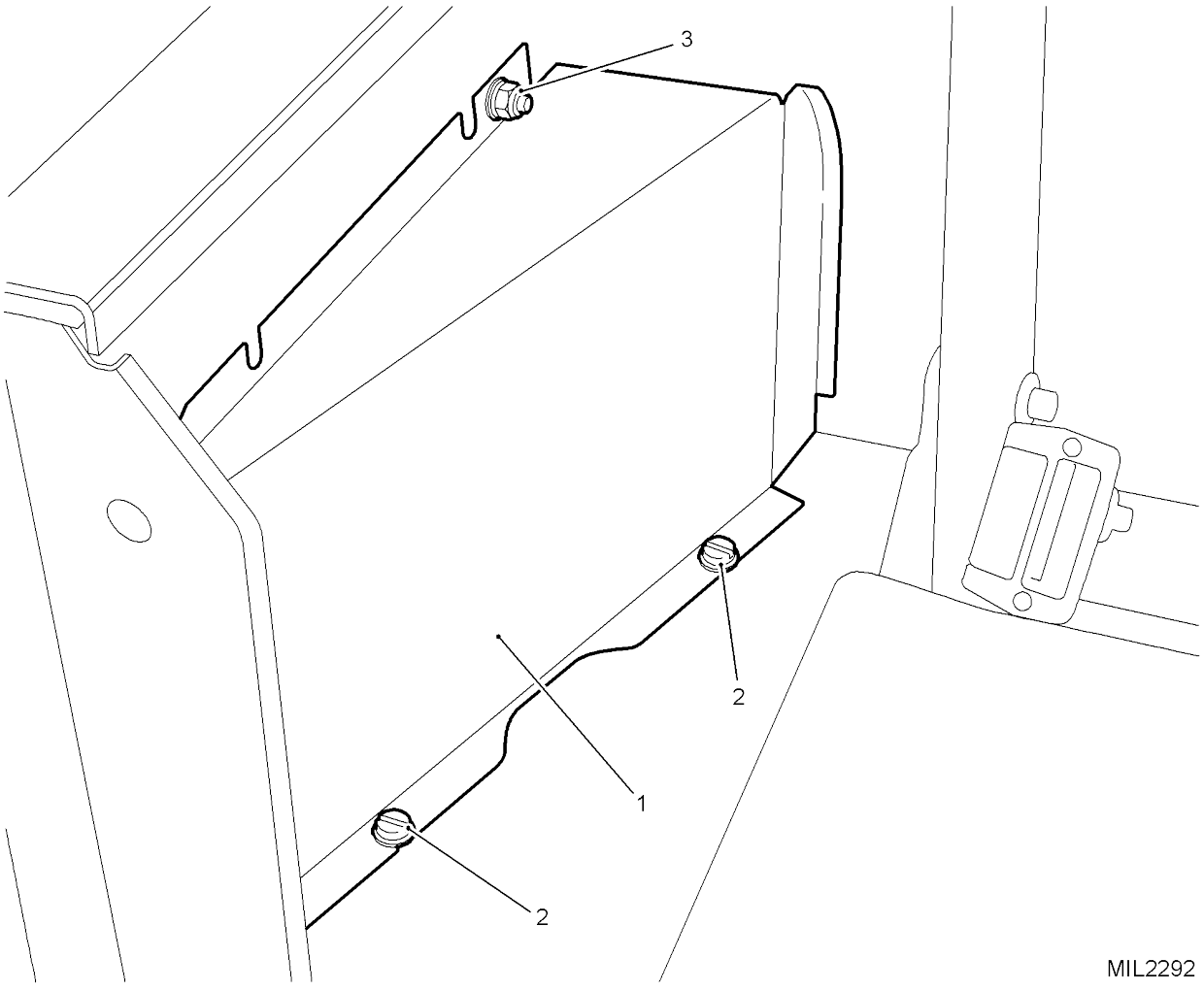
9.32 Carry out the modification as follows.

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.



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.

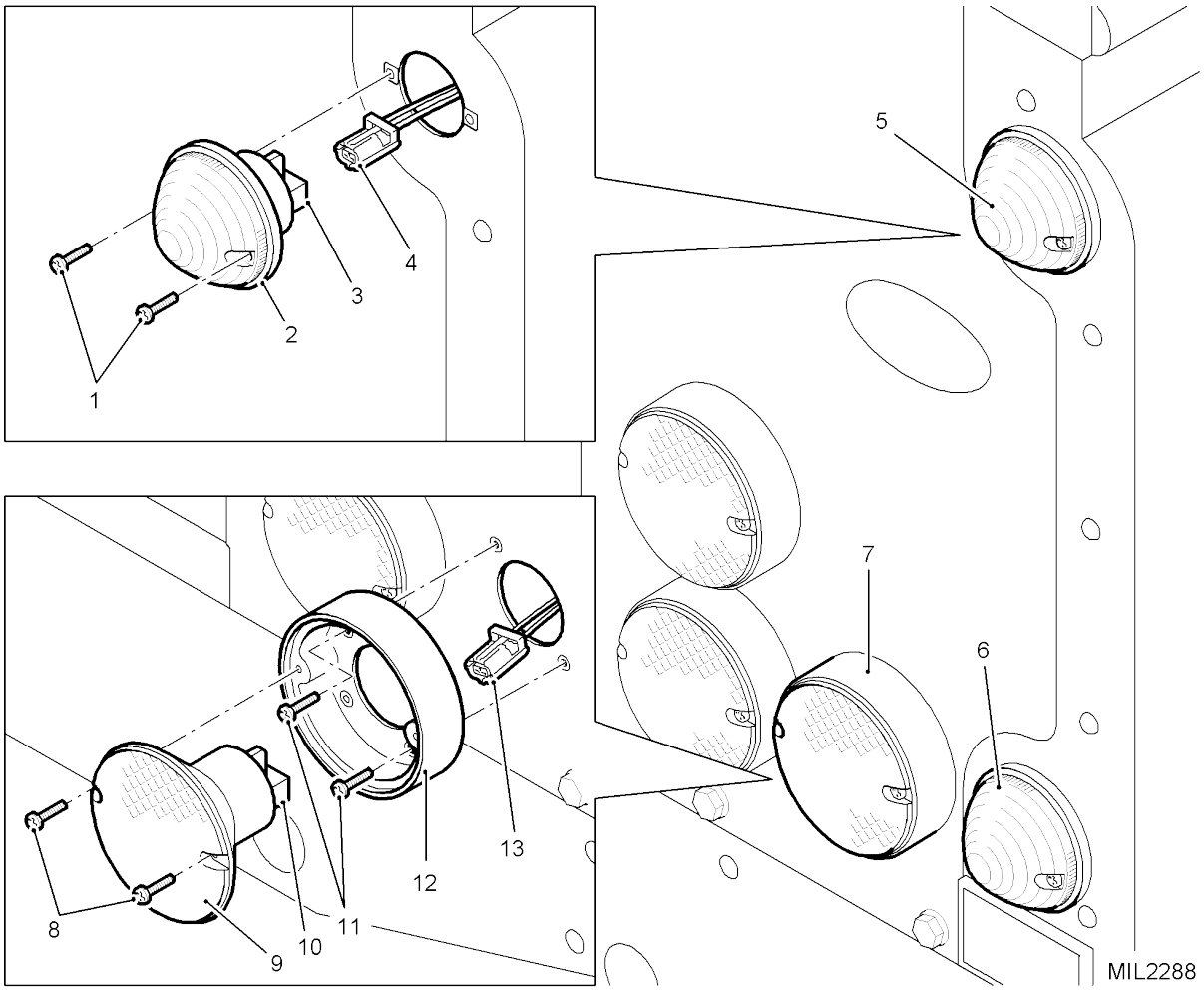
9.32.19 Remove bulb holder from rear of indicator lamp and insert bulb (item 20 or 49), refit bulb holder.

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.

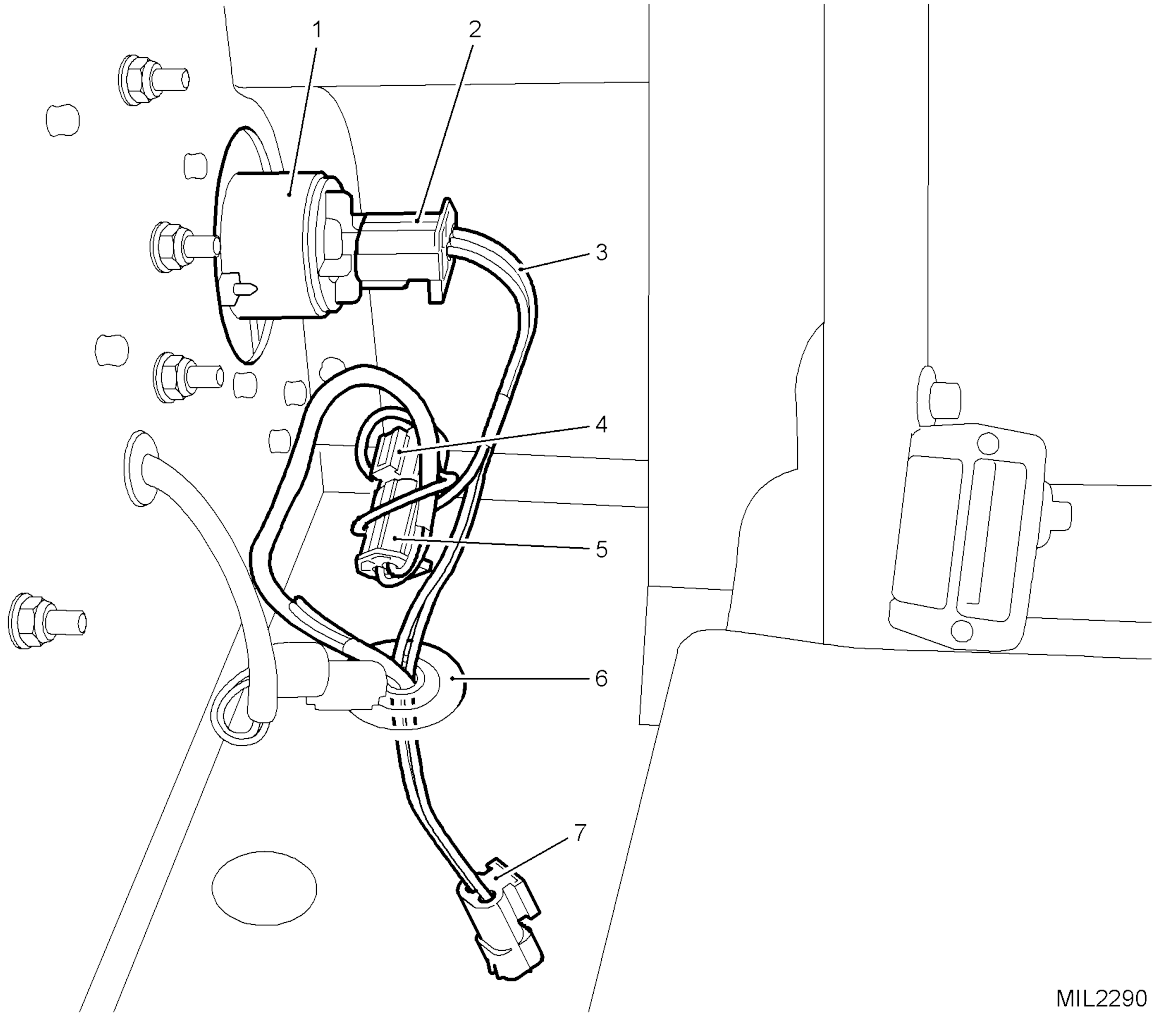
9.32.22 Refit the lamp cover panels, secure the panels with self tapping screws along the bottom lip and nuts, spring washers and plain washers at the top. Refer to Figure 28.

9.32.23 Insert grommets (item 37 or 68) into the original indicator positions and install screws to blank the original fixing holes.



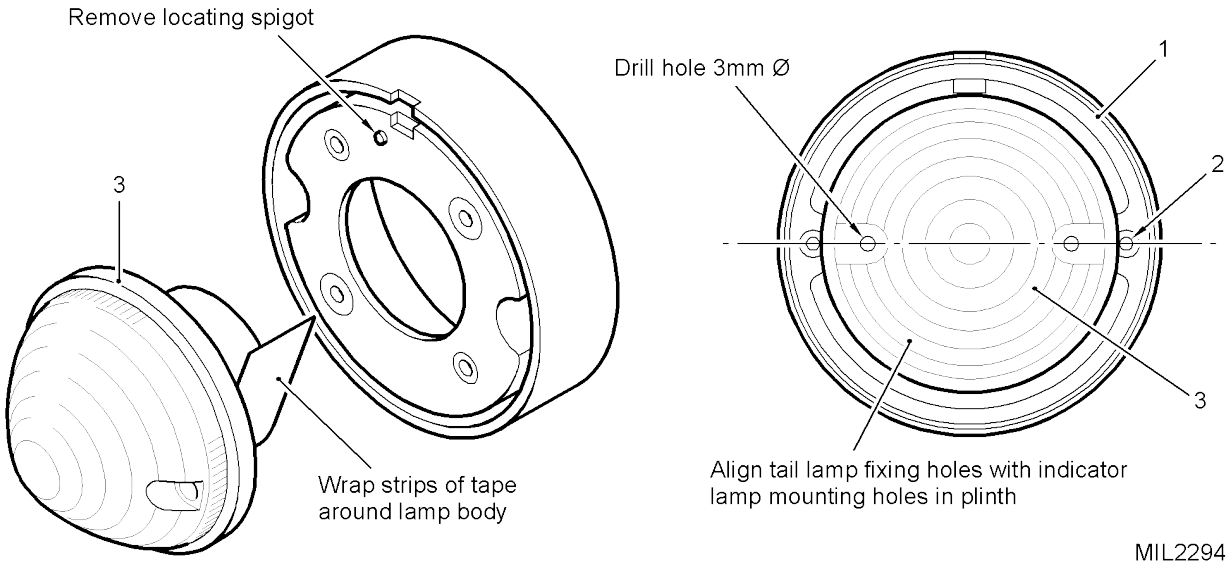
1	Screws	8	Screws
2	Lens	9	Lens
3	Bulb holder	10	Bulb holder
4	Multi-plug	11	Screws
5	Tail lamp	12	Mounting plinth
6	Brake lamp	13	Multi-plug
7	Indicator lamp		

Fig 29 Lamp removal



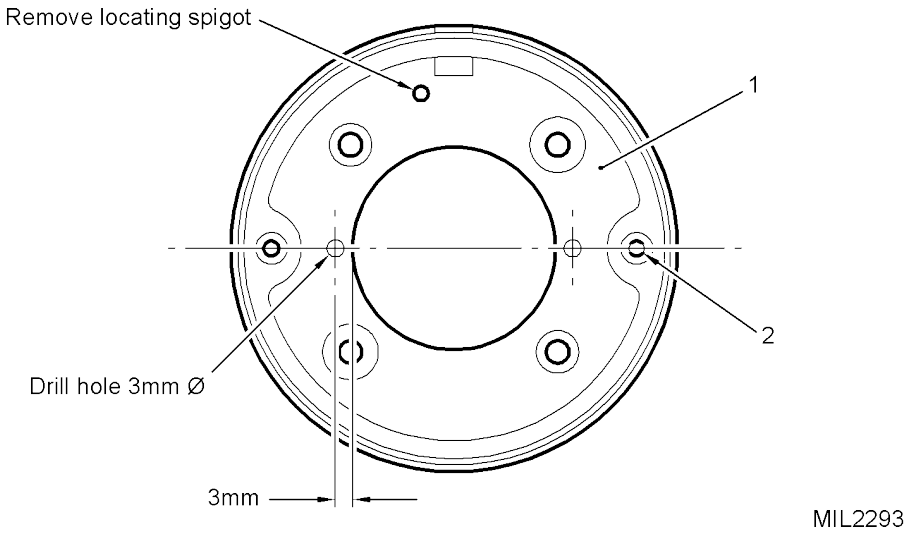
1	Combined tail and brake lamp	5	Original
2	3 pin multi-plug	6	Grommet
3	Harness assembly	7	Tail lamp Socket
4	Brake lamp socket		

Fig 30 Harness installation



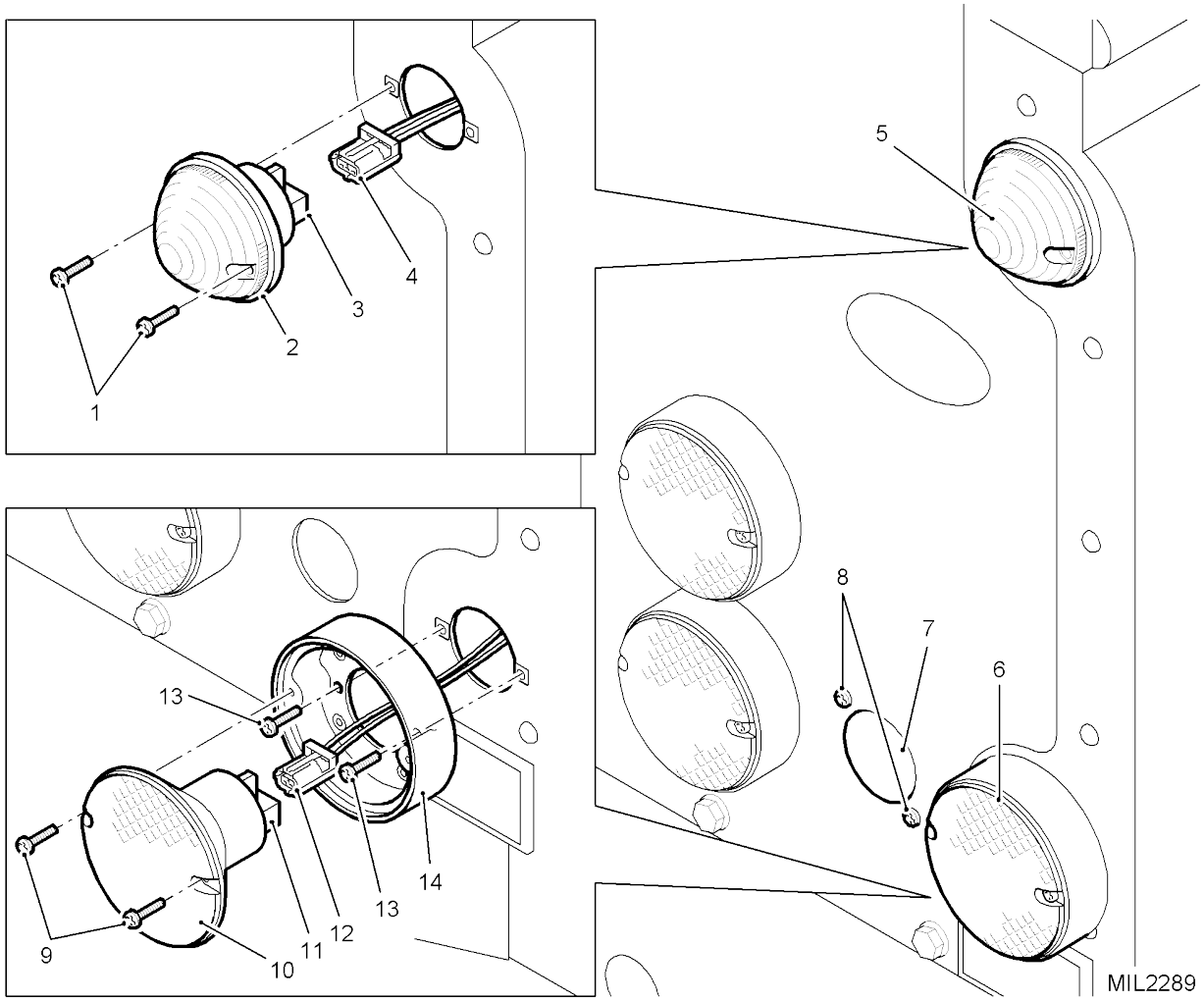
1 Indicator mounting plinth
2 Indicator lamp fixing hole
3 Tail or brake lamp

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



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.

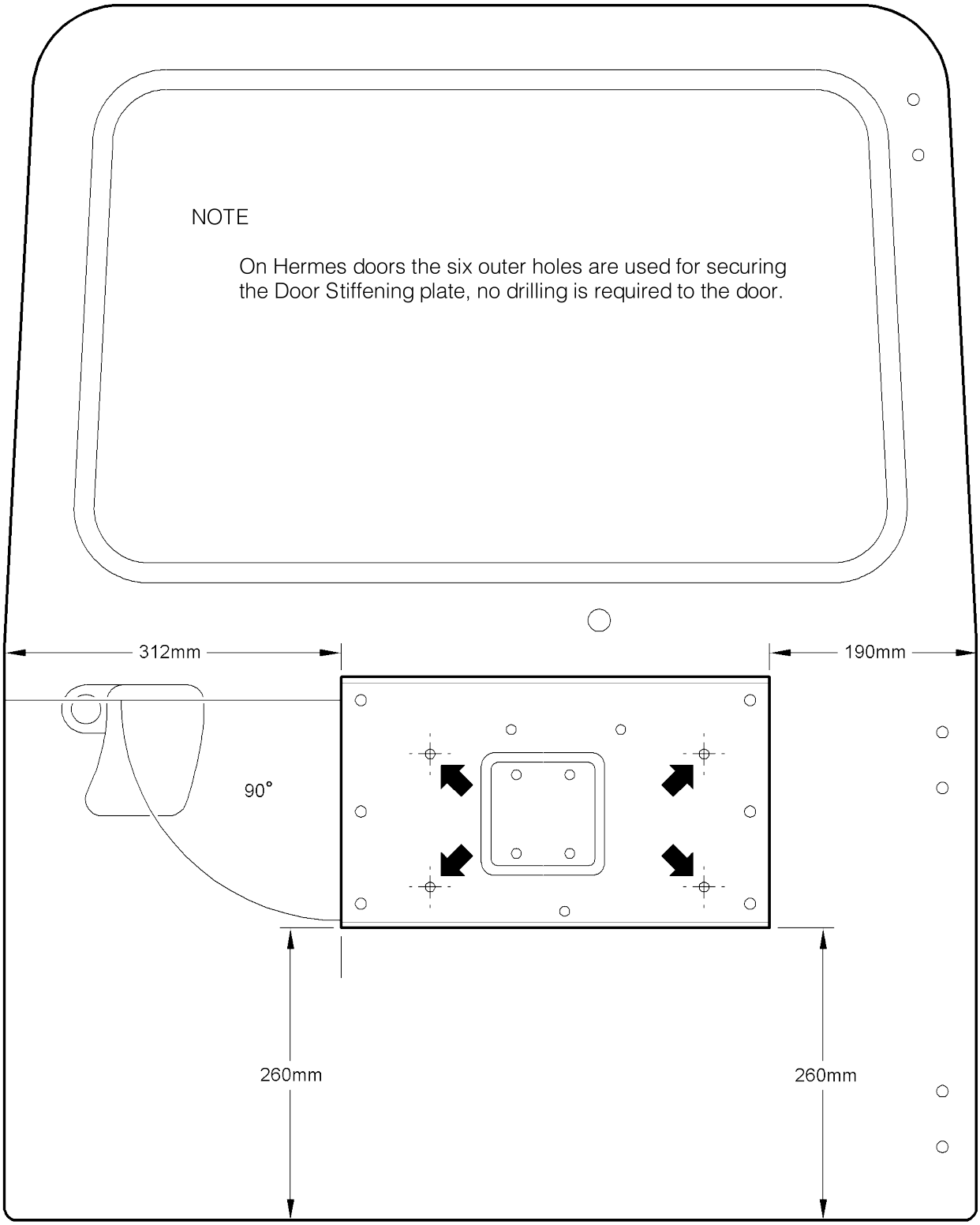
EFFECT ON WEIGHT

11 Negligible.

PUBLICATION AMENDMENTS

12 Nil.

APPENDIX A TO 2320-D-128-811 MODIFICATION INSTRUCTION 42



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