

VIRM: IN-SERVICE CERTIFICATION AMENDMENT

April 2020 List of changes and preview pages (WoF and CoF)

APRIL 2020

IN THIS AMENDMENT

- General amendment changes
- LVV threshold changes originally signalled for introduction last year (listed together after the general changes)
- Isolation shields do not require glazing markings and can be a permitted modification that does not require LVV certification.

General changes

SECTION	CHANGE DESCRIPTION
Introduction	
7 Definitions and abbreviations	<ul style="list-style-type: none"> • New definitions added as a result to the amendment to Land Transport Rule: Light Vehicle Brakes 2002: <ul style="list-style-type: none"> ○ Antilock brake systems ○ Combined brake systems
General vehicles	
5-1 Glazing	<ul style="list-style-type: none"> • Isolation shields do not require glazing markings and can be a permitted modification that does not require LVV certification
7-5 Seatbelts and seatbelt anchorages	<ul style="list-style-type: none"> • Rfr 9d updated with a note to say that the requirements do not apply to a seatbelt adjustment device as long as it is securely locked in place.
7-7 Interior impact	<ul style="list-style-type: none"> • Isolation shields can be a permitted modification that does not require LVV certification
Heavy vehicles	
5-1 Glazing	<ul style="list-style-type: none"> • Isolation shields do not require glazing markings
7-7 Interior impact	<ul style="list-style-type: none"> • See general vehicles
12-5 Heavy vehicle fifth wheel or ball coupling (for towing a semi-trailer)	<ul style="list-style-type: none"> • Rfr 3 reworded and an additional point added to Table 12-5-1 to give additional clarity regarding certification and fitting to standards and regulation
Light PSVs	
5-1 Glazing	<ul style="list-style-type: none"> • Isolation shields do not require glazing markings
7-7 Interior impact	<ul style="list-style-type: none"> • See general vehicles

15-1 Certificate of loading	<ul style="list-style-type: none"> RfR 2c updated to align with the change in 3-5 <i>Establishing whether a vehicle complies</i> above CoL sample image updated to show vehicle passenger details
Heavy PSVs	
5-1 Glazing	<ul style="list-style-type: none"> Isolation shields do not require glazing markings
7-7 Interior impact	<ul style="list-style-type: none"> See general vehicles
General trailers	
5-1 Service brake, parking brake and breakaway brake	<ul style="list-style-type: none"> Note to table 5-1-1 updated to clarify A compliant brake system requires a brake on each wheel of the trailer.

PREVIEW PAGES

General vehicles

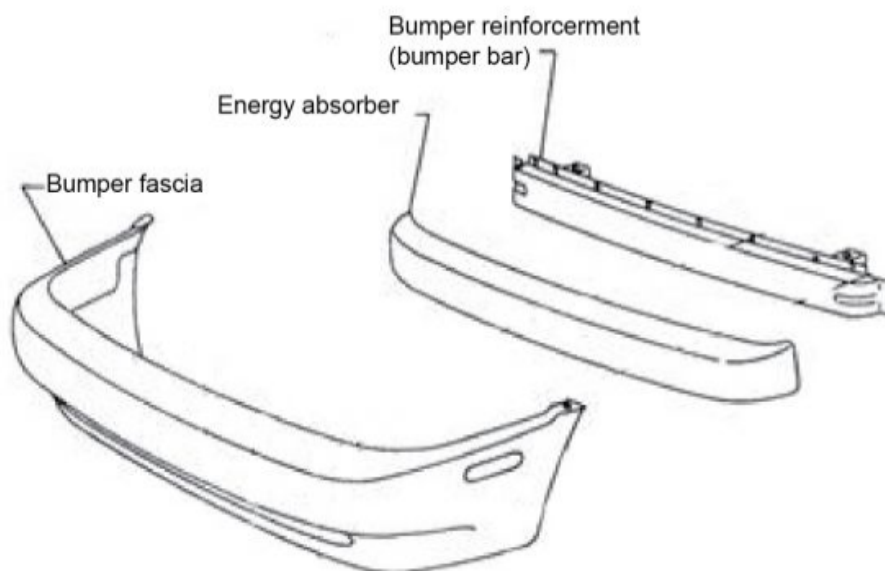
3-1 Structure

Note 2

Corrosion damage is where the metal has been eaten away, which is evident by pitting. The outward sign of such corrosion damage is typically displayed by the lifting or bubbling of paint. In extreme cases, the area affected by the corrosion damage will fall out and leave a hole.

Bumper bar means either the structural part inside a plastic bumper or a complete metal bumper as used on older vehicles. The bumper fascia (bumper cover) is not part of the bumper structure. It is the bumper reinforcement (also known as the bumper **bar beam**) that is the actual bumper bar for inspection purposes (see **Figure 3-1-3**).

Figure 3-1-3. Bumper components structure



The bumper fascia (bumper cover) is not part of the bumper structure. It is the bumper reinforcement (also known as the bumper **bar beam**) that is the actual bumper bar for inspection purposes.

5-1 Glazing

Reasons for rejection

Tables and images

Summary of legislation

Mandatory equipment

Glazing markings – visual inspection

1. A glazing marking is not permanent, except for glazing marked by a vendor or installer, and fitted in a vehicle before 1 January 1997, which may be marked by means of a self-adhesive label.
2. A glazing marking required in **Table 5-1-1** or **Table 5-1-2** is missing, except for:
 - a) plastic glazing behind the driver's seat in a soft-top convertible, or
 - b) hard plastic material behind the driver's seat in a vehicle manufactured before 1 January 1991, or
 - c) wire glass fitted to a window behind the driver's seat of a dangerous goods vehicle, or
 - d) markings on any isolation shield (see **Table 5-1-6**) (**Note 7**).

Note 7

The NZ Transport Agency makes no representations about the effectiveness of these installations, whether they are required, or whether they are sufficient for the purposes of meeting health and safety or other requirements. It takes no responsibility for the installation and use of isolation shields.

Table 5-1-6. Permitted modifications

Fitting of or modification to:	Modification permitted provided that:
Isolation shields (to separate vehicle occupants for the purpose of medical isolation) (Note 7)	<p>The shield:</p> <ul style="list-style-type: none">• is constructed from a transparent flexible thin film (minimum 80% VLT), and• does not interfere with the driver's vision (including through the front side windows, and rear-view mirrors), and• does not interfere with the operation of airbags, and• does not interfere with the driver's ability to reach vehicle controls (including lights, warning devices, etc.), and• is fastened to the vehicle using flexible/breakaway fixings that are unlikely to injure a vehicle occupant, and• can be quickly and easily removed to allow for emergency access or exit of the vehicle. <p>(Note: the partition/shield should be able to be removed, or broken, with a reasonable push or strike to allow both the driver and passenger/s to use an alternative exit in the event of an emergency.)</p>

7-5 Seatbelts and seatbelt anchorages

Reasons for rejection

Tables and images

Summary of legislation

9. A component is missing (**Note 19**), or is cracked, distorted, damaged or deteriorated in such a way that:
- a) its strength or integrity is reduced, or
 - b) it may damage another component or the webbing, or
 - c) foreign matter may enter the interior of the mechanism, or
 - d) the seatbelt or a seatbelt component cannot function as intended (**does not apply to securely locked seatbelt height adjusters**).

7-7 interior impact

Table 7-7-1. Modifications that do not require LVV certification

Fitting of or modification to:	LVV certification is not required provided that:
Isolation shields (to separate vehicle occupants for the purpose of medical isolation) (Note 3)	<p>The shield:</p> <ul style="list-style-type: none"> • is constructed from a transparent flexible thin film, and • does not interfere with the driver’s vision (including through the front side windows, and rear-view mirrors), and • does not interfere with the operation of airbags, and • does not interfere with the driver’s ability to reach vehicle controls (including lights, warning devices, etc.), and • is fastened to the vehicle using flexible/breakaway fixings that are unlikely to injure a vehicle occupant, and • can be quickly and easily removed to allow for emergency access or exit of the vehicle. <p>(Note: the partition/shield should be able to be removed, or broken, with a reasonable push or strike to allow both the driver and passenger/s to use an alternative exit in the event of an emergency.)</p>

Note 3

The NZ Transport Agency makes no representations about the effectiveness of these installations, whether they are required, or whether they are sufficient for the purposes of meeting health and safety or other requirements. It takes no responsibility for the installation and use of isolation shields.

Heavy vehicles

5-1 Glazing

Reasons for rejection	Tables and images	Summary of legislation
<p>Mandatory equipment</p> <ol style="list-style-type: none"> 1. Refer to general vehicle pages. 2. A glazing marking required in Table 5-1-8 or Table 5-1-9 is missing, except for: <ol style="list-style-type: none"> a) hard plastic glazing behind the driver’s seat in a vehicle manufactured before 1 January 1991, or d) markings on any isolation shield (see general vehicles Table 5-1-6) (Note 3). 		

Note 3

The NZ Transport Agency makes no representations about the effectiveness of these installations, whether they are required, or whether they are sufficient for the purposes of meeting health and safety or other requirements. It takes no responsibility for the installation and use of isolation shields.

7-7 interior impact

Reasons for rejection	Summary of legislation
<p>Mandatory equipment</p> <ol style="list-style-type: none"> 1. Where an interior fitting, control or surface has been added, removed, substituted or has deteriorated, the likelihood of injury to occupants has not been minimised. <p>Modification</p> <ol style="list-style-type: none"> 2.. Refer to general vehicle pages. 	

12-5 Heavy vehicle fifth wheel or ball coupling (for towing a semi-trailer)

Reasons for rejection	Tables and images	Summary of legislation
<p>3. A 50mm-diameter fifth wheel, other than a rigid fifth wheel, has not been:</p> <ul style="list-style-type: none"> a) certified to NZS 5450: 1989, or b) certified to all of the following: <ul style="list-style-type: none"> i. Australian/New Zealand Standard 4968.1-2003, and ii. Australian/New Zealand Standard 4968.2-2003, and iii. Australian Standard 2174-2006, or c) fitted by the vehicle manufacturer in compliance with UN/ECE Regulation 55 (if fitted to an imported, powered vehicle). 		

Reasons for rejection	Tables and images	Summary of legislation				
<p>Table 12-5-1. Requirements for HVS certification</p> <table border="1"> <thead> <tr> <th>HVS certification is required</th> <th>HVS certification is not required</th> </tr> </thead> <tbody> <tr> <td> <ul style="list-style-type: none"> 1. Fitting of a coupling, other than a direct bolt-on replacement. 2. Modification or repair of a coupling, except when this is not required in the right-hand column. </td> <td> <ul style="list-style-type: none"> 1. Fifth wheel or ball-type coupling that is a direct bolt-on replacement. 2. Any modification or repair likely to have been carried out before 1 January 1997 (modifications and repairs before this date required certification but for inspection purposes the LANDATA record need not be checked). 3. Any repair or modification not listed in the left-hand column unless the vehicle inspector considers that certification is required because the modification or repair has affected the vehicle's safety performance (a second opinion from an expert may be needed, eg the manufacturer's representative, or a reputable workshop). 4. A 50mm fifth wheel that complies with UN/ECE Regulation 55 fitted to an imported, powered vehicle. </td> </tr> </tbody> </table>			HVS certification is required	HVS certification is not required	<ul style="list-style-type: none"> 1. Fitting of a coupling, other than a direct bolt-on replacement. 2. Modification or repair of a coupling, except when this is not required in the right-hand column. 	<ul style="list-style-type: none"> 1. Fifth wheel or ball-type coupling that is a direct bolt-on replacement. 2. Any modification or repair likely to have been carried out before 1 January 1997 (modifications and repairs before this date required certification but for inspection purposes the LANDATA record need not be checked). 3. Any repair or modification not listed in the left-hand column unless the vehicle inspector considers that certification is required because the modification or repair has affected the vehicle's safety performance (a second opinion from an expert may be needed, eg the manufacturer's representative, or a reputable workshop). 4. A 50mm fifth wheel that complies with UN/ECE Regulation 55 fitted to an imported, powered vehicle.
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Light PSV

5-1 Glazing

See general vehicles above.

7-7 interior impact

Reasons for rejection	Summary of legislation
<p>Modifications</p> <p>5. Refer to general vehicle pages.</p>	

15-1 Certificate of loading

Reasons for rejection	Tables and images	Summary of legislation
<p>2. The vehicle is one of the following and the CoL is no longer valid:</p> <ul style="list-style-type: none"> a) the vehicle has been modified so as to require LVV specialist certification, or b) the vehicle has been de-registered, or c) the vehicle has changed use and the requirements for CoL differ for the new use, eg change from goods van to PSV (refer to Introduction: 3-5 Establishing whether a vehicle complies). 		

Figure 15-1-1. Certificate of loading



Heavy PSVs

5-1 Glazing

See heavy vehicles above.

7-7 interior impact

Modifications

5. Refer to [general vehicle pages](#).

General trailers

5-1 Service brake, parking brake and breakaway brake

Reasons for rejection		Tables and images		Summary of legislation	
Table 5-1-1. Trailer brake requirements					
Type of brake required	Laden weight (Note 5) of the trailer				
	2000kg or less	2001–2500kg	2501-3500kg		
Service brake	Not required but, if fitted, must act on each wheel of at least one axle	Required; either direct or indirect service brake must act on each wheel of at least one axle	Required; direct service brake must act on each wheel of at least one axle, or an indirect service brake that complies with UN/ECE Regulation No.13 (see Technical bulletin 15: Identifying compliant hitches and brake systems)	Note: A compliant brake system requires a brake on each wheel of the trailer.	

LVV THRESHOLD CHANGES

The majority of changes are to add clarity to how modern modifications should be treated.

The modifications of concern are the lifting of utes and 4wds, retuning and chipping of ECU's, wheels and tyres, and modifications that may affect high strength vehicle structure.

2-1 External Projections

All sections of this table to be updated as below follows (modifications may have additional criteria in each section)

Fitting of or modification to:	LVV certification not required provided that:
Body kits and components (including utility canopies, plastic bumper skins and bonnet projections)	<ul style="list-style-type: none"> the fitting system does not weaken the vehicle structure (Note 1), and no frontal impact components have been removed where the vehicle is required to comply with a frontal impact occupant protection standard (Note 3) the kit or components do not present any external projections that could cause injury, to the occupants or pedestrians, or present a snagging/hooks risk to a vehicle or person, and the performance of any lamps is not affected as a result of the fitting of the kit or components, and the driver's vision has not been affected. <p>See also Table 3-1-1.</p>
Side racks (for glass or other sheet materials)	<ul style="list-style-type: none"> there is no doubt as to the rack's load carrying capacity, and the rack is secured without weakening the vehicle structure (Note 1), and, no forward-facing pedestrian traps exist (Note 2), and <ul style="list-style-type: none"> – the rack is designed and protected so that sharp or dangerous cargo cannot face directly forward projecting beyond the outside of the body. <p>See also Table 3-1-1.</p>
Bumper bar (removal and change)	<ul style="list-style-type: none"> the vehicle is not required to comply with a frontal impact occupant protection standard (Note 3), and does not weaken the vehicle structure (see Note 1), and any changes to the bumper do not affect the performance of mudguards, or A rear bumper bar has been replaced by a towbar crossmember. <p>See also Table 3-1-1.</p>
Auxiliary bars (including bull bars, nudge bars, external roll cages and winches)	<ul style="list-style-type: none"> The vehicle is not required to comply with a frontal impact occupant protection standard (Note 3) The auxiliary bar: <ul style="list-style-type: none"> presents no pedestrian traps (Note 2), and is not angled forward except where necessary to clear the contours of the vehicle, and presents no sharp edges or an external radius of less than 3mm, and

	<ul style="list-style-type: none"> • The winch either: <ul style="list-style-type: none"> ○ does not protrude forward of the front face of the bumper, or ○ does project forward of the bumper line but is fitted with 'pedestrian-friendly' shrouds to reduce trapping risk and present a larger forward-facing surface area. • the vehicle is required to comply with a frontal impact occupant protection standard and the auxiliary bar: <ul style="list-style-type: none"> ○ is a vehicle manufacturer supplied component for that vehicle, or ○ has been certified by the auxiliary bar manufacturer as frontal impact compliant (as may be indicated by a label) <p>Note that an auxiliary bar that does not meet the above minimum requirements is unlikely to meet LVV requirements and so cannot be certified. See also Table 3-1-1</p>
A-Frames	<ul style="list-style-type: none"> • The A-frame meets all of the following requirements: <ul style="list-style-type: none"> ○ is attached to the chassis by means other than welding, and ○ the components are fit for purpose, and ○ the brackets remaining on the vehicle when the A-frame is removed are recessed behind the forward surface of the bumper by no less than 20mm, and ○ the brackets are fitted so that they do not bridge the vehicle's crumple zones, and ○ the brackets are fitted so that they do not significantly stiffen the front of the vehicle. <p>See also Table 3-1-1</p>
Bonnet emblems or badges	<p>The emblem or badge is designed and attached in such a way that it will fold back or break off in the event of contact, without leaving any sharp edges, or</p> <ul style="list-style-type: none"> • the emblem or badge has no sharp edges, and is fitted flat to the bonnet with a thickness no more than 10mm
Bonnet pins	<ul style="list-style-type: none"> • the vehicle is not required to comply with a frontal impact occupant protection standard (Note 3); and <ul style="list-style-type: none"> ○ the pins: <ul style="list-style-type: none"> • have no sharp edges/are rounded with radius more than 3mm, and • do not present any external projections that could cause injury, to the occupants or pedestrians, and • do not present a snagging risk

Ute Trays	<p>For vehicles first registered in New Zealand before 1 January 2021</p> <ul style="list-style-type: none"> the tray has no sharp edges and radiuses of not less than 3mm on every external edge, and No forward-facing pedestrian traps (Note 2) exist <p>For vehicles first registered in New Zealand on or after 1 January 2021:</p> <ul style="list-style-type: none"> The tray has no sharp edges and radiuses of not less than 3mm on every external edge, and no forward-facing pedestrian traps exist (Note 2), and the tray protrudes no more than 100mm from the widest part of the vehicle cab/body structure (excluding mirrors); or the forwards edges of the tray are tapered rearwards at an angle of no less than 30 degrees from the tray's front edge or have an equivalent, or better, form of pedestrian protection. <p>See also Table 3-1-1</p>
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Fitting of or modification to:	LVV certification not required
Aerials	<ul style="list-style-type: none"> In-service requirements for condition and performance must be met.
Roof Mounted Solar Panels	
Towbars	
Trunk Racks	
Roof-mounted wheelchair winch	
Roof racks (Except heavy PSVs)	
Additional or substituted rear-view mirrors	
Any modification for the purposes of law enforcement or the provision of emergency services	

Note 1: Heating, drilling, welding or cutting the vehicle structure, modifying a roof bow, or modifying any part of the structure anchorage would be considered to weaken the structure. Cutting a single layer of unstressed panel of sheet metal (i.e. roof) is not considered to weaken the vehicle structure. Drilling a hole suitable for a child restraint top tether does not require LVV certification.

Note 2: A pedestrian trap is any part of a vehicle that may hook, catch or pull/push a pedestrian into or under a vehicle. Vehicle components should be shaped to reduce injury to a pedestrian and to move the pedestrian away from the vehicle in the event of an incident.

Note 3:

The following vehicles with a GVM of 2500 kg or less are required to comply with such a standard:

- class MA motor vehicles manufactured from 1 March 1999, and
- class MA motor vehicles that were less than 20 years old when they were first registered in New Zealand on or after 1 April 2002, and
- class MB or MC motor vehicles manufactured from 1 October 2003.

3-1 Structure

These sections have not changed and should be retained as per the current VIRM threshold:

- Seatbelt anchorages retrofitted after 1 January 1992 in vehicles of classes MA, MB, MC or after 1 March 1999, in vehicles of other classes
- Front Mount Intercooler

Other section added/updated as follows (modifications may have additional criteria in each section):

Fitting of or modification to:	LVV certification not required provided that:
Addition of side windows into a panel van or goods van	<ul style="list-style-type: none"> • The modification was carried out before 1/3/1999, or • The modification was carried out on or after 1/3/1999, and the modification has not weakened the vehicle structure (Note 1).
Fibreglass replacement panels (that are substituted for OE panels)	<ul style="list-style-type: none"> • No frontal impact components have been removed where the vehicle is required to comply with a frontal impact occupant protection standard (Note Frontal Impact), and • the OE panels being replaced do not contribute to the strength of the vehicle structure, including side impact resistance, and • the replacement panels use OE attachment points (bonnet hinges and latches must be OE or direct replacements). <p>See also Table 2-1-1.</p>
Campervan conversions	<ul style="list-style-type: none"> • The conversion was completed before 1/3/1999, or • The conversion was completed on or after 1/3/1999, and <ul style="list-style-type: none"> ○ no modifications were carried out to the cab rear wall, and ○ modifications to the roof meet the following requirements: <ul style="list-style-type: none"> ▪ Only a single panel of sheet metal may be cut per roof opening, and ▪ any bracing or structural elements have not been modified, and ▪ no modifications are within 150mm of a seatbelt anchorage; and ○ no seats or seatbelt anchorages were retrofitted, or • There is evidence of certification of the modification from the company that carried out the modification, i.e. a secondary certification plate or label in the case of a motorhome conversion (see Technical bulletin 13). <p>See also Table 7-1-1 and 7-5-1.</p>
Aftermarket sunroof or roof vent/hatch	The fitting has not weakened the vehicle structure (Note 1)
Cargo hoist/cargo lift platform	<ul style="list-style-type: none"> • the vehicle is not adapted for the transportation of a person in a wheelchair, and the hoist or tail lifter is positioned to the rear of any vehicle occupants and adequately mounted, and • the vehicle structure has not been weakened (Note 1). <p>See also Table 7-1-1</p>

<p>Suspension braces (strut braces) and underfloor/body braces</p>	<ul style="list-style-type: none"> • there are no structural changes to the body or suspension mounting points and, • no cutting, heating or welding to the vehicle structure or suspension components is involved in the attachment of the brace, and • the brace is attached to existing chassis/suspension points with the correct grade bolts and exposed thread is showing through the nut/fastener <p>See also Table 9-1-1</p>
<p>Stereo equipment and speakers</p>	<ul style="list-style-type: none"> • any modification or fitting carried out before 1/1/1992 <p>If fitted to the rear parcel shelf:</p> <ul style="list-style-type: none"> • no upper seatbelt anchorage is attached to the shelf or any shelf support bracket, and • in the case of a top tether point for a child seat attached to the rear shelf, the top tether point is not located within 150mm of a modification to a rear parcel shelf, and • the removal of any material from the rear shelf is minimal and is unlikely to have weakened the vehicle structure to which a seatbelt anchorage is attached. <p>If fitted to a part of the vehicle other than the rear parcel shelf:</p> <ul style="list-style-type: none"> • no structural material has been removed from within 300mm of a seatbelt anchorage, and • any material removed is minimal and is unlikely to have weakened the vehicle structure (including a seatbelt anchorage structure), and • The stereo equipment or speakers fitted in the passenger compartment: <ul style="list-style-type: none"> ○ present no additional risk of injury, and ○ are securely fastened by mechanical means. <p>See also Table 7-1-1 and 7-5-1</p>
<p>Gear shift lever relocation</p>	<ul style="list-style-type: none"> • no substantial modifications have occurred to the floor or gearbox tunnel area, other than provision for gear-shift mechanism, and • the relocation presents no additional risk of injury than OE specification <p>See also Table 7-7-1</p>
<p>Auxiliary bars (including bull bars, nudge bars, external roll cages and winches)</p>	<ul style="list-style-type: none"> • The vehicle is not required to comply with a frontal impact occupant protection standard (Note 3) • The auxiliary bar: <ul style="list-style-type: none"> ○ presents no pedestrian traps (Note 2), and ○ is not angled forward except where necessary to clear the contours of the vehicle, and ○ presents no sharp edges or an external radius of less than 3mm, and • The winch either: <ul style="list-style-type: none"> ○ does not protrude forward of the front face of the bumper, or

	<ul style="list-style-type: none"> ○ does project forward of the bumper line but is fitted with 'pedestrian-friendly' shrouds to reduce trapping risk and present a larger forward-facing surface area. <ul style="list-style-type: none"> ● the vehicle is required to comply with a frontal impact occupant protection standard and the auxiliary bar: <ul style="list-style-type: none"> ○ is a vehicle manufacturer supplied component for that vehicle, or ○ has been certified by the auxiliary bar manufacturer as frontal impact compliant (as may be indicated by a label) <p>Note that an auxiliary bar that does not meet the above minimum requirements is unlikely to meet LVV requirements and so cannot be certified. See also Table 2-1-1</p>
A-Frames	<ul style="list-style-type: none"> ● The A-frame meets all of the following requirements: <ul style="list-style-type: none"> ○ is attached to the chassis by means other than welding, and ○ the components are fit for purpose, and ○ the brackets remaining on the vehicle when the A-frame is removed are recessed behind the forward surface of the bumper by no less than 20mm, and ○ the brackets are fitted so that they do not bridge the vehicle's crumple zones, and ○ the brackets are fitted so that they do not significantly stiffen the front of the vehicle. <p>See also Table 2-1-1</p>
Ute Trays	<p>For vehicles registered in New Zealand on or after 1 January 2021:</p> <ul style="list-style-type: none"> ● The fitting has not weakened the vehicle structure (Note 1); and the tray has no sharp edges and radiuses of not less than 3mm on every external edge, <p>See also Table 2-1-1</p>
Bumper bar (removal and change)	<ul style="list-style-type: none"> ● the vehicle is not required to comply with a frontal impact occupant protection standard (Note 3), and ● Does not weaken the vehicle structure (Note 1) ● Any changes to the bumper do not affect the performance of mudguards or ● A rear bumper bar has been replaced by a towbar crossmember. <p>See also Table 2-1-1.</p>
Body Kits	<p>Fitting, removal or modification does not weaken the vehicle structure (Note 1). See also Table 2-1-1.</p>
Glass Racks	<p>Fitting, removal or modification does not weaken the vehicle structure (Note 1). See also Table 2-1-1.</p>

Note 1:

Heating, drilling, welding or cutting the vehicle structure, modifying a roof bow, or modifying any part of the structure anchorage would be considered to weaken the structure. Cutting a single layer

of unstressed panel of sheet metal (i.e. roof) is not considered to weaken the vehicle structure. Drilling a hole suitable for a child restraint top tether does not require LVV certification.

Note 2:

A pedestrian trap is any part of a vehicle that may hook, catch or pull/push a pedestrian into or under a vehicle. Vehicle components should be shaped to reduce injury to a pedestrian and to move the pedestrian away from the vehicle in the event of an incident.

Note 3:

The following vehicles with a GVM of 2500 kg or less are required to comply with such a standard:

- class MA motor vehicles manufactured from 1 March 1999, and
- class MA motor vehicles that were less than 20 years old when they were first registered in New Zealand on or after 1 April 2002, and
- class MB or MC motor vehicles manufactured from 1 October 2003.

Fitting of or modification to:	LVV certification not required
Roof mounted solar panels	<ul style="list-style-type: none"> • In-service requirements for condition and performance must be met.
Towbars	
Roof racks	
Any modification for the purposes of law enforcement or the provision of emergency services	

7-1 Seats and Seat anchorages

This section has have not changed and should be retained as per the current VIRM threshold:

- Aftermarket ‘Retro’ brand child seats designed for children 5–12 years old (up to 38kg)

Other section added/updated as follows (modifications may have additional criteria in each section):

Seats – modification or replacement or installation of a seat anchorage after 1 March 1999	<ul style="list-style-type: none"> • The seat is of stressed type (see note 1) and is an unmodified OE seat sourced from the same make and model vehicle, and <ul style="list-style-type: none"> ○ the seat is directly bolted to the original OE seat mounts and, ○ no additional components or modifications are required for the fitting of the seat, and ○ no airbag has been removed or disabled (see info sheet 07-2009 https://www.lvvta.org.nz/documents/infosheets/LVVTA_Info_07-2009_Removal_of_Side_Airbag-equipped_Seats.pdf). • the seat of unstressed type (see note 1) and is either an unmodified OE seat from another vehicle or of a known and reputable aftermarket brand, and <ul style="list-style-type: none"> ○ no airbag has been removed or disabled, and ○ the seat is fitted to unmodified OE seat anchorages, and ○ the seatbelt anchorage or operation is not affected or moved, and ○ the seat components (including brackets, runners and rails) are compatible with each other, i.e. they are either OE components
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	<p>from a production vehicle or of a known and reputable aftermarket brand, and are not fitted together by welding, and</p> <ul style="list-style-type: none"> ○ the relationship between seat, seat occupant, front airbag and location of the seatbelt anchorages is not affected. <p>Note LVV certification is not required where the only modification is the removal of seats and/or seatbelts. However, a class change, and a new load rating may be required in some cases.</p>
Campervan conversions	<ul style="list-style-type: none"> • The conversion was completed before 1/3/1999, or • The conversion was completed on or after 1/3/1999, and <ul style="list-style-type: none"> ○ no modifications were carried out to the vehicle rear wall, and ○ modifications to the roof meet the following requirements: <ul style="list-style-type: none"> ▪ Only a single layer of sheet metal may be cut per roof opening, and ▪ any bracing or structural elements have not been modified, and ▪ no modifications are within 150mm of a seatbelt anchorage. and ○ no seats or seatbelt anchorages were retrofitted, or • There is evidence of certification of the modification from the company that carried out the modification, i.e. a secondary certification plate or label in the case of a motorhome conversion (see Technical bulletin 13). <p>See also Table 3-1-1 and Table 7-5-1</p>

Note 1: A stressed type seat is a seat to which a seatbelt is directly mounted to any of the components that make up the seat and seat frame. An unstressed seat has no seatbelt attachment point on either the seat or the seat frame (i.e. the seat belt is attached to a different part of the vehicle structure).

7-3 Head restraints

(modifications may have additional criteria in each section)

Fitting of or modification to:	LVV certification not required provided that:
Head restraint removal	<ul style="list-style-type: none"> • A front head restraint must not be removed from a vehicle if: <ul style="list-style-type: none"> ○ there is a solid structure within 300mm behind the seat back; or ○ the vehicle is required to comply with a frontal impact occupant protection standard (Note 1) • A rear head restraint must not be removed from a vehicle if there is a solid structure within 300mm behind the seat back.
Fitting of aftermarket LCD screens to head restraints	<ul style="list-style-type: none"> • the performance of the head restraint is not affected, i.e. the head restraint still provides sufficient padding for the seat occupant, and • the screen is fitted in a suitable manner, e.g. it appears similar to OE fitments in other vehicles, or • the screen can be easily attached or removed.

Fitting of or modification to:	LVV certification not required
Any modification for the purposes of law enforcement or the provision of emergency services	<ul style="list-style-type: none"> In-service requirements for condition and performance must be met.

Note 3:

The following vehicles with a GVM of 2500 kg or less are required to comply with such a standard:

- class MA motor vehicles manufactured from 1 March 1999, and
- class MA motor vehicles that were less than 20 years old when they were first registered in New Zealand on or after 1 April 2002, and
- class MB or MC motor vehicles manufactured from 1 October 2003.

7-5 Seatbelts and seatbelt anchorages

Notes for Update: Sections listed below have not changed and should be retained as per the current VIRM threshold:

- Seatbelts
- Top-tether anchorage for a child seat or harness

Other sections added/updated as follows (modifications may have additional criteria in each section)

Fitting of or modification to:	LVV certification not required provided that:
Stereo equipment and speakers	<ul style="list-style-type: none"> any modification or fitting carried out before 1/1/1992 <p>If fitted to the rear parcel shelf:</p> <ul style="list-style-type: none"> no upper seatbelt anchorage is attached to the shelf or any shelf support bracket, and in the case of a top tether point for a child seat attached to the rear shelf, the top tether point is not located within 150 mm of a modification to a rear parcel shelf, and the removal of any material from the rear shelf is minimal and is unlikely to have weakened the vehicle structure to which a seatbelt anchorage is attached. <p>If fitted to a part of the vehicle other than the rear parcel shelf:</p> <ul style="list-style-type: none"> The fitting has not weakened the vehicle structure (See Note X) The stereo equipment or speakers fitted in the passenger compartment: <ul style="list-style-type: none"> ○ present no additional risk of injury, and ○ are securely fastened by mechanical means.
Campervan conversions	<ul style="list-style-type: none"> The conversion was completed before 1/3/1999, or The conversion was completed on or after 1/3/1999, and <ul style="list-style-type: none"> ○ no modifications were carried out to the vehicle rear wall, and ○ modifications to the roof meet the following requirements: <ul style="list-style-type: none"> ▪ Only a single layer of sheet metal may be cut per roof opening, and ▪ any bracing or structural elements have not been modified, and

	<ul style="list-style-type: none"> ▪ no modifications are within 150mm of a seatbelt anchorage, and <ul style="list-style-type: none"> ○ no seats or seatbelt anchorages were retrofitted, or • There is evidence of certification of the modification from the company that carried out the modification, i.e. a secondary certification plate or label in the case of a motorhome conversion (see Technical bulletin 13). <p>See also Table 3-1-1 and Table 7-7-1</p>
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Fitting of or modification to:	LVV certification not required provided that:
Rear seatbelts fitted to class MD1 and NA vehicles before 1 March 1999	<ul style="list-style-type: none"> • In-service requirements for condition and performance must be met.
Removal of seatbelts (full or partial) where the seating position has been removed.	
Replacing a type R1 or R2 seatbelt with a webclamp R1 or R2 seatbelt (e.g. where Technical bulletin 5 applies)	
Any modification for the purposes of law enforcement or the provision of emergency services	

7-7 Interior Impact

These sections have not changed and should be retained as per the current VIRM threshold:

- Disability adaptive controls
- Additional and substituted items such as instruments, switches, cellphone installations and navigation equipment or an OE item from another vehicle

Other sections added/updated as follows (modifications may have additional criteria in each section)

Fitting of or modification to:	LVV certification not required provided that:
Cargo hoist/cargo lift platform (fitted inside the vehicle)	<ul style="list-style-type: none"> • the vehicle is not adapted for the transportation of a person in a wheelchair, and the hoist or tail lifter is positioned to the rear of any vehicle occupants and adequately mounted and, • the vehicle structure has not been weakened. • See also Table 3-1-1.
Stereo equipment and speakers	<ul style="list-style-type: none"> • any modification or fitting carried out before 1/1/1992 <p>If fitted to the rear parcel shelf:</p> <ul style="list-style-type: none"> • no upper seatbelt anchorage is attached to the shelf or any shelf support bracket, and • in the case of a top tether point for a child seat attached to the rear shelf, the top tether point is not located within 150 mm of a modification to a rear parcel shelf, and • the removal of any material from the rear shelf is minimal and is unlikely to have weakened the vehicle structure to which a seatbelt anchorage is attached. <p>If fitted to a part of the vehicle other than the rear parcel shelf:</p>

	<ul style="list-style-type: none"> • The fitting has not weakened the vehicle structure (See Note 3) • The stereo equipment or speakers fitted in the passenger compartment: <ul style="list-style-type: none"> ○ present no additional risk of injury, and ○ are securely fastened by mechanical means. <p>See also Table 3-1-1 and 7-5-1.</p>
Steering wheels	<ul style="list-style-type: none"> • the vehicle does not have an airbag installed as OE, and • the vehicle is not required to comply with a frontal impact occupant protection standard* (Note 1); and • the steering wheel is: <ul style="list-style-type: none"> ○ a direct substitute, without steering column shaft modification, and ○ a non-OE item of a reputable brand or an OE item from another vehicle, and ○ is mounted with a one-piece boss** (Note 2), and ○ has a diameter greater than 245mm, and ○ does not significantly inhibit the drivers view of the speedometer or mandatory warning lights. <p>* A vehicle that cannot comply with this clause cannot be LVV certified unless it has been issued with an LVV authority card or is at least 14 years old. ** A vehicle fitted with a quick release steering wheel must always be referred for LVV certification and is only permitted within strict criteria See also Table 9-1-1</p>
Gear shift lever relocation	<ul style="list-style-type: none"> • no substantial modifications have occurred to the floor or gearbox tunnel area, other than provision for gear-shift mechanism, and • the relocation presents no additional risk of injury than OE specification <p>See also Table 3-1-1</p>
Cargo barriers	<ul style="list-style-type: none"> • each seating position, within 300mm of the cargo barrier, is fitted with an effective head restraint, and • the cargo barriers are positioned: <ul style="list-style-type: none"> – behind, following a plane extending upward, parallel to the back of the backrest on the rear-most seat, and – in such a way that the head restraint would provide protection from head contact with any cargo barrier section during a crash.
Roll-bar or roll-cage structures (roll protection or cosmetic)	<ul style="list-style-type: none"> • each seating position is fitted with an effective head restraint, and • the bars are positioned: <ul style="list-style-type: none"> – behind, following a plane extending upward, parallel to the back of the backrest on the rear-most seat, and – in such a way that the head restraint would provide protection from head contact with any bar section during a crash.
Aftermarket brake pedal pads or covers	<ul style="list-style-type: none"> • the fitment of the pads or covers does not: <ul style="list-style-type: none"> – necessitate any modification to the pedal arm, or

	<p>– affect the safe operation of the brake pedal or other pedals (e.g. a brake pad or cover significantly wider than the original brake pad may not be acceptable, depending on fitment) See also Table 8-1-1</p>
<p>Aftermarket or custom brake pedal extensions (for unusually short people)</p>	<ul style="list-style-type: none"> • The extension: <ul style="list-style-type: none"> – does not exceed 100mm length when measured from the surface of the original brake pedal, and – is securely clamped to the original pedal by mechanical means, and – is sufficiently strong and rigid to withstand emergency brake loads, and – does not involve any modification to, or compromise the strength of, the original brake pedal, and – does not significantly change the sideways load or leverage against the pedal, and – does not significantly increase the weight of the pedal <p>See also Table 8-1-1</p>
<p>Additional brake and accelerator pedals (for driving school vehicles)</p>	<ul style="list-style-type: none"> • The operation of the primary brake pedal is not affected, and • no modifications to the primary brake pedal or any other part of the primary brake system has occurred, and • adequate clearance is maintained between all pedals. <p>See also Table 8-1-1</p>

Note 1:

The following vehicles with a GVM of 2500 kg or less are required to comply with such a standard:

- class MA motor vehicles manufactured from 1 March 1999, and
- class MA motor vehicles that were less than 20 years old when they were first registered in New Zealand on or after 1 April 2002, and
- class MB or MC motor vehicles manufactured from 1 October 2003.

8-1 Service Brake and Parking Brake

These sections have not changed and should be retained as per the current VIRM threshold:

- Aftermarket or custom brake pedal extensions (for unusually short people)
- Additional brake pedals (for driving school vehicles)
- Removal of secondary accelerator and brake system (where driving school vehicle is converted to single primary system)
- Disability parking brake system

Other sections added/updated as follows (modifications may have additional criteria in each section)

Fitting of or modification to:	LVV certification not required provided that:
Aftermarket brake pedal pads or covers	<ul style="list-style-type: none"> • the fitment of the pads or covers does not: <ul style="list-style-type: none"> – necessitate any modification to the pedal arm, or – affect the safe operation of the brake pedal or other pedals (e.g. a brake pad or cover significantly wider than the original brake pad may not be acceptable, depending on fitment). <p>See also Table 7-1-1</p>
Brake Rotors	<ul style="list-style-type: none"> • Rotors are direct OE replacements, or • After market substitute brake rotors are: <ul style="list-style-type: none"> ○ the same size as the OE rotors, and ○ catalogued aftermarket items for that make and model of vehicle (and can include cross-drilled and/or slotted types), and ○ attached to unmodified OE parts, and ○ not modified in anyway
Brake Lines/Hoses (including stainless steel braided brake hoses)	<ul style="list-style-type: none"> • Brake lines or hoses are direct replacements; and • the lines or hoses are fitted using all OE mounts. <p>Note: Flexible hose end fittings must be crimped to the hose</p>

Fitting of or modification to:	LVV certification not required
Brake Linings/Pads	<ul style="list-style-type: none"> • In-service requirements for condition and performance must be met.
Any modifications for the purposes of law enforcement or the provision of emergency services	

9-1 Steering and Suspension

All sections of this table have been updated. Note that “Larger Diameter anti-sway bar” and “Addition of Anti-sway bar” have been combined.

(modifications may have additional criteria in each section)

Fitting of or modification to:	LVV certification not required provided that:
Steering wheel spinner to assist in the operation of the steering wheel	<ul style="list-style-type: none"> • The spinner is contained within the outer circumference of the steering wheel, and • The spinner does not interfere with the operation of a fitted airbag, and • The operation of an airbag will not detach the spinner from the steering wheel.
Right-hand drive steering conversions	<ul style="list-style-type: none"> • the conversion can be proven via documented evidence to have been carried out prior to 1 August 1990, or • the conversion was carried out between 1 August 1990 and 1 March 1999 and an approved conversion agent’s individually numbered plate is attached to the vehicle structure.
Steering wheels	<ul style="list-style-type: none"> • the vehicle does not have an airbag installed as OE, and • the vehicle is not required to comply with a frontal impact occupant protection standard* (Note 1), and • the steering wheel is: <ul style="list-style-type: none"> ○ a direct substitute, without steering column shaft modification, and ○ a non-OE item of a reputable brand or an OE item from another vehicle, and ○ is mounted with a one-piece boss**), and ○ has a diameter greater than 245mm, and ○ does not significantly inhibit the drivers view of the speedometer or mandatory warning lights. <p>* A vehicle that cannot comply with this clause cannot be LVV certified unless it has been issued with an LVV authority card or is at least 14 years old.</p> <p>** A vehicle fitted with a quick release steering wheel must always be referred for LVV certification and is only permitted within strict criteria</p>
Springs and shock absorbers (Including modification of ride height)	<ul style="list-style-type: none"> • the springs or shock absorbers are direct replacements, and • replacement springs are contained within unmodified OE seats throughout full suspension travel (Note 2), and • replacement springs are self-retaining in their seats at full extension, without the use of non-standard devices such as wire-ties, straps, or external spring locators, and • replacement springs have not been heated or cut, and • springs and spring seats are not height adjustable by any means (unless OE) (Note 3), and

	<ul style="list-style-type: none"> • replacement shock absorbers, including air-adjustable units, fit unmodified OE mountings (Note 2), and • suspension maintains sufficient travel for safe operation (See Note 4), and • suspension components maintain sufficient clearance from unmodified bump stops when fully laden (See Note 5), and • Suspension retains at least 40mm of rebound (droop) wheel travel (See Note 6), and • a minimum of 100mm ground clearance (unladen and without driver) exists below any part of the vehicle structure, or any steering, braking or suspension component (Note 7) and • the normal relationship between front and rear suspension height is not unduly affected, and • Clearance is maintained between all components, when tested from lock to lock at full droop.
Blocks for leaf springs to adjust their ride height (up or down)	<ul style="list-style-type: none"> • the leaf spring suspension has not been raised by any other means, and • the leaf spring blocks are: <ul style="list-style-type: none"> – securely fitted, and – constructed from metal, and – designed for the purpose, and – firmly seated over not less than the OE seat area, and – not more than 50mm in height, and – located using the same method as original (assessment of location method is only required where visible without dismantling)
Addition of anti-sway bar or uprated anti-sway bar	<ul style="list-style-type: none"> • the bar is attached to OE mounting points, and • the bar and its fittings are catalogued items for the make and model of vehicle, and • no cutting, drilling, heating or welding to the vehicle structure or suspension components is involved in the fitting of the bar. <p>Note: Removal or reduction/downrating of an antisway bar always requires certification</p>
Suspension braces (strut braces) and underfloor/body braces	<ul style="list-style-type: none"> • there are no structural changes to the body or suspension mounting points and, • no cutting, heating or welding to the vehicle structure or suspension components is involved in the attachment of the brace, and • the brace is attached to existing chassis/suspension points with the correct grade bolts and exposed thread is showing through the nut/fastener
Eccentric bolts/bushes for adjustability of wheel	<ul style="list-style-type: none"> • the bolts/bushes are:

alignment (e.g. for camber correction in association with lowered suspensions)	<ul style="list-style-type: none"> - designed as a means of correcting or improving wheel alignment; and - catalogued aftermarket items for the make and model of vehicle.
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Note 1:

The following vehicles with a GVM of 2500 kg or less are required to comply with such a standard:

- o class MA motor vehicles manufactured from 1 March 1999, and
- o class MA motor vehicles that were less than 20 years old when they were first registered in New Zealand on or after 1 April 2002, and
- o class MB or MC motor vehicles manufactured from 1 October 2003.

Note 2

Strut or spring spacers always require certification

Note 3

The only other allowable methods of adjusting vehicle ride height without LVV certification are leaf spring blocks (as per below requirements) or adjustment of OE equipment (torsion bars or OE adjustable air suspension).

Note 4

When determining if there is sufficient travel remaining, consider a case where the vehicle is laden and in use.

Note 5

Sufficient clearance must be maintained from the travel-limiting bump stop (not an O.E spring aid). The spring aid and/or bump stop must not be modified. A spring aid is a low-density conformable material that is fitted inside a coil spring or above a leaf spring by a vehicle manufacturer to assist the spring and acts as the bump stop only once it is fully compressed. The spring aid may be contacted at any loading condition to increase the vehicle's spring rate, but the vehicle must retain sufficient wheel travel as per Note 4. A bump stop is a small high-density rubber bumper that is designed to stop vehicle suspension or driveline components from coming into contact with the vehicle structure at the extremes of its suspension travel and is not designed to carry the load of the vehicle for sustained periods of time.

Note 6

Rebound wheel travel should be measured as the difference between the distance from the top of the tyre and the wheel arch with the vehicle resting on the ground and the top of the tyre to the wheel arch with the vehicle lifted so that its tyres are clear of the ground (Suspension hanging in full rebound). This difference must be greater than 40mm.

Note 7

Does not include such items as exhaust pipes and exterior body panels that do not contribute to the structural strength of the vehicle.

10-1 Tyres and wheels

All sections updated (modifications may have additional criteria in each section).

Fitting of or modification to:	LVV certification not required provided that:
Wheels	<ul style="list-style-type: none"> • the wheels: <ul style="list-style-type: none"> ○ are of a known and reputable brand, and ○ would be considered an appropriate fitment for the vehicle type by the wheel manufacturer, and ○ are not modified, and ○ do not have spacers or adaptors fitted, and ○ have a load rating acceptable for the axle rating (or vehicle GVM where axle rating is not available) <p>Note: Where the wheel load rating is not visible a note should be made on the WoF/CoF checksheet and the operator should be informed to have the load rating checked. Insufficient load rating is only a reason for rejection if the load rating is visible and not sufficient.</p>
Tyres	<ul style="list-style-type: none"> • the tyres: <ul style="list-style-type: none"> – have an outer circumference that is no more than 5% greater than OE, and – are an appropriate selection for rim width (see https://www.lvvta.org.nz/documents/infosheets/LVVTA_Info_01-2009_V3_Tyre_Size_to_Wheel_Size_Compatibility_Guide.pdf, and – have a load rating suitable for the axle (or vehicle where axle mass is not available) – have a speed rating suitable for the vehicle • the tyre tread does not protrude beyond: <ul style="list-style-type: none"> – in the case of a vehicle that is not a class NA or class MC vehicle, the unmodified original body panels or factory fitted mudguard extension/flare; or – in the case of an class NA or class MC vehicle, 25mm outside of the unmodified original body panels, provided that a flare or wheel arch extension covers the full width of the tyre tread. <p>Note: an original full-size spare wheel/tyre can be used for comparison of tyre size</p>

10-3 Mudguards

(modifications may have additional criteria in each section).

Fitting of or modification to:	LVV certification not required provided that:
Mudguards and mudguard extensions	<ul style="list-style-type: none"> • A mudguard has not been cut during modification, and • modified mudguards or extensions have no sharp protrusions, and • mudguard extensions are securely attached to the vehicle, and • the mudguard/mud flap is no less effective than OE. <p>Note 1: Mudguards flared via rolling do not require certification.</p>

Fitting of or modification to:	LVV certification not required
Any modification for the purposes of law enforcement or the provision of emergency services	<ul style="list-style-type: none"> In-service requirements for condition and performance must be met.

13-1 Engine and transmission

These sections have not changed and should be retained as per the current VIRM threshold:

- Gearbox substitution
- Change from 4WD to permanent 2WD

Others added/updated as follows (modifications may have additional criteria in each section).

Fitting of or modification to:	LVV certification not required provided that:
Substitution of engines	<ul style="list-style-type: none"> When compared with the OE engine, the replacement engine: <ul style="list-style-type: none"> is of the same or less cubic capacity, and has equal or less weight, and uses the same fuel (petrol, diesel, LPG, CNG), and uses the same unmodified attachment points and system (i.e. bolts-in), and uses the same family of block and cylinder head from the same vehicle manufacturer, and <ul style="list-style-type: none"> the block has the same number of cylinders arranged in the same configuration, and the head has the same number of valves and camshafts, and meets the requirements of minor modifications detailed below, and when the minor modifications have been taken into consideration the total power or torque increase is no more than 20% over the O.E engine specification.
Minor engine modifications	<ul style="list-style-type: none"> the total modifications (including engine substitutions) are minor, resulting in no more than a 20% power or 20% torque output increase over the OE engine specification, <p>Note that common minor modifications include the fitting of:</p> <ul style="list-style-type: none"> extractor or free-flow exhaust manifolds, or big bore exhaust systems changed intake manifolds changed or multiple carburettors modified fuel injection systems changed ignition systems

	<ul style="list-style-type: none"> • alternative cold air box induction systems. <p>Note that minor modifications DO NOT include:</p> <ul style="list-style-type: none"> • fitting of a supercharger, or • fitting of a turbocharger, or • upgrading/modifying the supercharger, or • upgrading/modifying the turbocharger, or • upgrading/modifying the wastegate, or • tuning/re-chipping (Note 1) the ECU of a turbocharged or supercharged engine, or • single camshaft to twin camshaft, or • carburettor to injectors, or • injectors to carburettor, or • stroker kit, or • any other capacity increase that exceeds usual reconditioning.
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Note 1: Tuning/Re-chipping includes any software or hardware (ECU or piggy back system) change that is intended to alter the fuelling, boost pressure or ignition timing from the OE specifications.

13-2 Fuel System

Existing single line table to be replaced with below three items

Fitting of or modification to:	LVV certification not required provided that:
Fuel Lines	<p>The fuel lines are:</p> <ul style="list-style-type: none"> • of similar construction to the OE fuel lines (i.e. Hard lines are not replaced with flexible lines); and • in the OE location and mounted to all the OE fixing clips
In-line fuel filter	<p>The in-line fuel filter is:</p> <ul style="list-style-type: none"> • of an appropriate pressure rating, and • adequately supported, and • at least 50mm from the exhaust, and • at least 100mm from a catalytic converter.
Electric fuel pump	<p>The electric fuel pump:</p> <ul style="list-style-type: none"> • is a replacement for a mechanical pump on a carburettor engine, and • is adequately supported, and • does not increase the fuel pressure above OE

Note: All other fuel system modifications require certification

13-5 Electric and Hybrid vehicle electrical system

All sections updated

Fitting of or modification to:	LVV certification not required provided that:
Fuel system	<ul style="list-style-type: none"> • See fuel system requirements in Table 13-2-1 <p>Note: LVV certification is always required for changes to the high voltage electrical system.</p>