

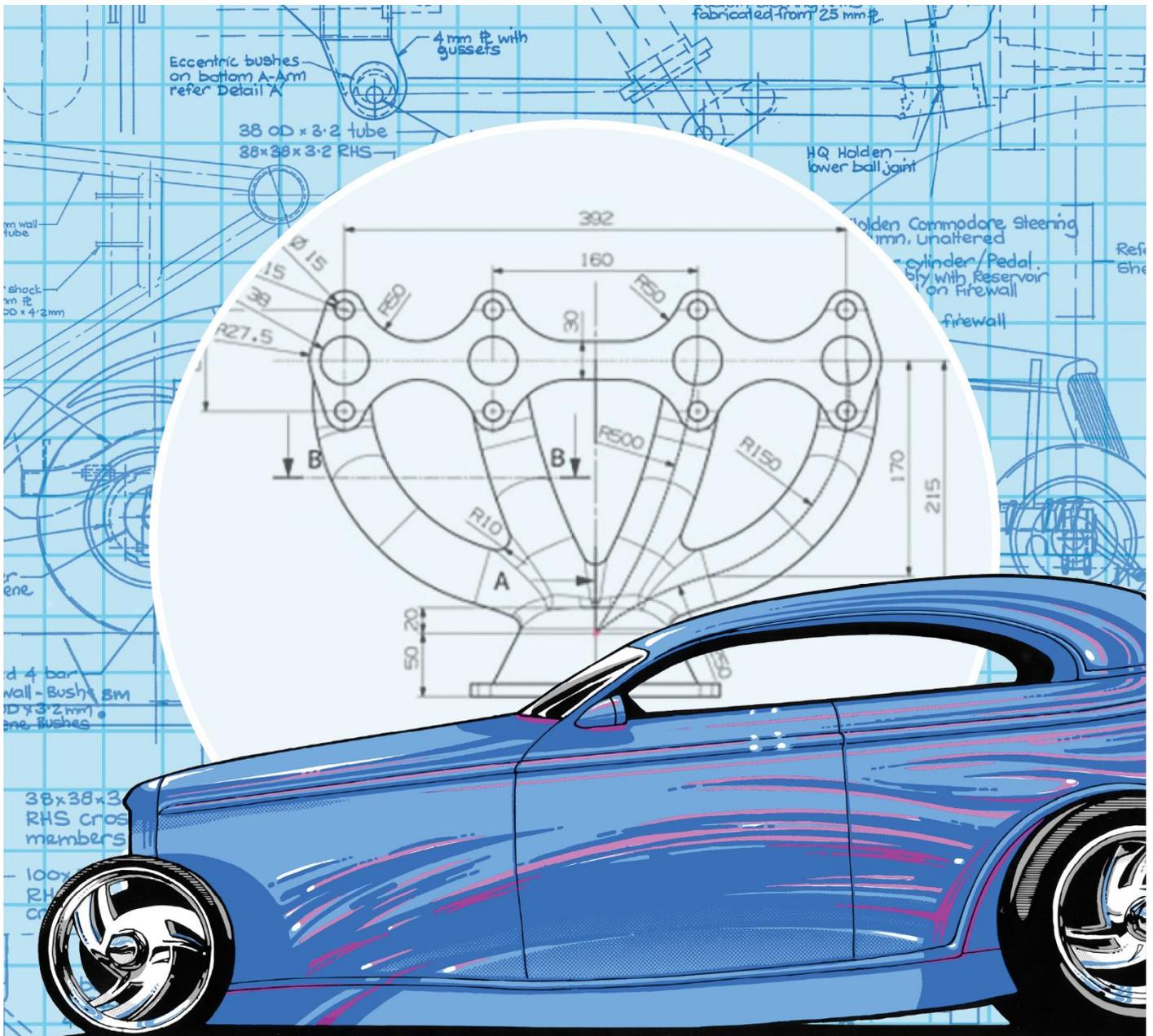
Helping New Zealanders Build & Modify Safe Vehicles

Low Volume Vehicle Standard

90-20(06)

Exhaust Noise Emissions

Version 7 | Effective from 1 October 2025



Approval Record

Signed in accordance with clause 1.3(5) of the <i>Low Volume Vehicle Code</i> of LVVTA, on by:			
New Zealand Transport Agency		Low Volume Vehicle Technical Association	
Name	Signature	Name	Signature
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Amendment Record

Amendments details	Version #	Issue date	Effect date
• LVV Standard 90-20(00) - Original Issue	Version 1	1 March 2025	1 April 2025
• LVV Standard 90-20(01)	Version 2	1 February 2007	1 April 2007
• LVV Standard 90-20(02)	Version 3	1 April 2008	1 June 2008
• LVV Standard 90-20(03)	Version 4	12 December 2011	1 February 2012
• LVV Standard 90-20(04)	Version 5	1 July 2016	1 July 2016
• LVV Standard 90-20(05)	Version 6	25 October 2016	25 October 2016
• LVV Standard 90-20(06)	Version 7	26 August 2025	1 October 2025
Note 1 Text highlighted in grey shows amendments that have been made subsequent to the previous version of this standard, and a grey vertical stroke to the left of the text denotes important new or changed information (which may include information which has been removed).			

About Low Volume Vehicle Standards

The Low Volume Vehicle Standards (the standards) specify that vehicles (which have been modified or constructed) require low volume vehicle certification, and provide a set of overarching technical requirements that the vehicles must meet. The standard refers to the associated *New Zealand Car Construction Manual chapter*, that sets out the specific technical requirements which must be met in order to achieve compliance with the standard.

Author, Publisher, & Owner

This standard is authored, published, and owned by the Low Volume Vehicle Technical Association Incorporated (LVVTA). LVVTA is an incorporated society established in 1992, that represents a group of specialist automotive organisations (in turn representing approximately 150,000 members) who are dedicated to ensuring that vehicles, when scratch-built or modified, meet the highest practicable safety standards.

The information in this standard has stemmed from work undertaken by LVVTA founding member organisations that commenced in 1989 and has been progressively developed as an integral part of the New Zealand Government’s land transport regulatory system, by agreement and in consultation with the New Zealand Transport Agency (NZTA).

As a result, the considerable experience in applied safety engineering built up by LVVTA and its specialist automotive member groups over the past several decades can be of benefit to members of the New Zealand public who also wish to build or modify motor vehicles.

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Availability and Current Version

This standard is printed and distributed by LVVTA, and is available to the public free of charge from the LVVTA website; www.lvvta.org.nz.

Note that printed copies of this standard, like any other printed LVVTA documents, may have been superseded by a later version and become out of date.

Therefore, this and all other LVVTA documents should not be relied upon without first ensuring that the version number (on the right-hand side of the header above) is the current version – please visit the LVV Standards area of www.lvvta.org.nz to check that this standard is in fact the latest version.

Users' Feedback

This standard is constantly undergoing an evolutionary development process in order to keep pace with changing trends and technology. To assist in this, LVVTA invites users of this standard to engage in an ongoing consultation process with us by making submissions for any changes, additions, or clarifications which might improve the standard, at any time.

Any submissions made via this rolling consultation process will be thoroughly considered, and incorporated, where appropriate, at the next available amendment opportunity.

Submissions should be made to submission@lvvta.org.nz, with the name of this standard in the Subject line.

Supporting Information

This standard should be read in conjunction with *NZ Car Construction Manual Chapter 11 – Exhaust Noise & Gas Emissions* which provides all necessary requirements and best-practice guidance to enable compliance with this standard.

Legal Status & Copyright

This standard is incorporated by reference, as an integral part of the *Low Volume Vehicle Code*, within *Land Transport Rule: Vehicle Standards Compliance 2002*. This standard corresponds technically with *Land Transport Rule: Vehicle Equipment 2004*.

The content of this standard remains the property of LVVTA, and no part may be reproduced without LVVTA's written consent.

Disclaimer

LVVTA has made all reasonable efforts to provide sound and correct advice, based on the historical knowledge and best practice experiences of all parties involved in the development and production of this chapter.

However, no responsibility or liability is accepted by LVVTA for any error or omission, or any loss suffered by any person relying directly or indirectly on this chapter. Any person who builds or modifies a motor vehicle accepts that there may be some associated risks, and does so in the full knowledge of this, and accepts full responsibility for their own actions.

Credits

LVVTA acknowledges the following contributors for their assistance in the development of this standard:

- Cover blueprint drawings: Graeme Walls
- Cover central CAD diagram: CAD Wizard
- Cover car illustration: Tony Johnson

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90-20(06)

Exhaust Noise Emissions

Purpose of this Standard

The purpose of this low volume vehicle standard (the standard) is to provide the legal framework for measuring exhaust noise emissions from new scratch-built vehicles, and from modified and scratch-built light vehicles that have been referred by an authorised vehicle inspector (during either used entry or in-service certification) or by a member of the NZ Police, for an objective exhaust noise emission test (ONT). Such a vehicle is required by the *Land Transport Rule: Vehicle Equipment 2004* to comply with the *Low Volume Vehicle Code*, that in turn, requires compliance with this standard.

This standard sets out:

- which vehicles are required to meet this standard; and
- how this standard is applied to those vehicles; and
- the technical requirements which must be met by vehicles required to comply with this standard.

Section 1 Scope and Application of this Standard

1.1 Scope of this Standard

1.1(1) This standard applies to all light vehicles other than those specified in 1.1(2), that are:

- (a) production vehicles which are required to undergo an objective exhaust noise emission test for the purpose of either:
 - (i) achieving entry compliance on or after 19 July 2006; or
 - (ii) maintaining in-service compliance on or after 1 June 2008;
- or
- (b) scratch-built low volume vehicles that are first registered or re-registered in New Zealand on or after 1 December 2008.

1.1(2) This standard does not apply to:

- (a) powered bicycles of Class AB; or
- (b) a vehicle that is not powered by an internal combustion engine; or
- (c) a production vehicle that retains the vehicle manufacturer's original equipment exhaust system in unmodified condition (provided that the vehicle has not been referred by the NZ Police and is 'green-stickered' or 'pink-stickered' for emitting excessive noise); or
- (d) a vehicle that has been referred for objective exhaust noise emission testing solely on the basis of exhaust leaks or an exhaust system that is in poor condition; or
- (e) those vehicles specified in section 3.

Note 1 A green or pink sticker, as referred to in 1.1(2)(c), means a notice ordering a vehicle off the road, that is issued by the NZ Police. For clarity, if a vehicle was ordered off the road for excessive exhaust noise, it must undergo an ONT even if the vehicle's unmodified OEM exhaust system has been refitted after the vehicle was ordered off the road.

1.2 Application of this Standard

- 1.2(1) A light vehicle that is required to undergo an objective exhaust noise emission test as in 1.1(1), must comply with all applicable technical and procedural requirements contained in section 2 of this standard.

Note 1 A light vehicle specified in 1.2(1) does not necessarily become a low volume vehicle (as both modified and unmodified vehicles may require exhaust noise emissions testing), however in the interest of consistency, such a vehicle is referred to throughout this standard as a low volume vehicle.

Section 2 Technical Requirements of this Standard

2.1 General Safety Requirements

- 2.1(1) A motor vehicle with an internal combustion engine must be fitted with an exhaust system that is designed, constructed, positioned, and maintained such that it:
- (a) is in good working order; and
 - (b) cannot be readily interfered with so as to change its operation or reduce its effectiveness; and
 - (c) minimises the risk of exhaust heat or fumes harming the vehicle's occupants.

Note 1 The requirements specified in 2.1(1) are the applicable general safety requirements from *Land Transport Rule: Vehicle Equipment 2004*, that are required as part of this standard and are reproduced here in the interest of convenience.

2.2 Overarching Technical Requirements

- 2.2(1) An exhaust system fitted to a low volume vehicle must:
- (a) be correctly positioned and fitted; and
 - (b) where necessary, be fitted with protection; and
 - (c) avoid presenting any harmful protrusions.
- 2.2(2) The exhaust noise emission testing of an exhaust system fitted to a low volume vehicle must be performed:
- (a) on an appropriate site; and
 - (b) using an approved sound level meter, calibrator, and tachometer; and
 - (c) at a specified engine speed; and
 - (d) following a specified test procedure.
- 2.2(3) The maximum permissible decibel level emitted by a low volume vehicle during an exhaust noise test must not, except for in the case of where factoring is applied, exceed:
- (a) in the case of an MA, MB, MC, MD1, MD2, or NA-class vehicle that was manufactured before 1 January 1985, 95 dBA; or
 - (b) in the case of an MA, MB, MC, MD1, MD2, or NA-class vehicle that was manufactured on or after 1 January 1985:
 - (i) if first registered in New Zealand before 1 June 2008, 95 dBA; or

(ii) if first registered in New Zealand on or after 1 June 2008, 90 dBA.

Note 1	The decibel figures specified above are set by the Government, as specified in <i>Land Transport Rule: Vehicle Equipment 2004</i> , and may change from time to time as Government policy dictates. Any such changes will be reflected in an amendment to this standard.
Note 2	<i>Land Transport Rule: Vehicle Equipment 2004</i> specifies that exhaust noise emissions testing must be carried out in accordance with the <i>Low Volume Vehicle Code</i> . The <i>Low Volume Vehicle Code</i> refers, for exhaust noise emissions testing, to this standard.
Note 3	The factoring referred to in 2.2(3) is contained in 11.23 of <i>Chapter 11 (Part 1) – Exhaust Noise & Gas Emissions</i> of the <i>NZ Car Construction Manual</i> .
Note 4	An electronic version of <i>Chapter 11 (Part 1) - Exhaust Noise & Gas Emissions</i> , and all other chapters of the <i>NZ Car Construction Manual</i> , can be accessed from www.lvta.org.nz either individually or as a complete Manual, free of charge.

2.2(4) In order to demonstrate compliance with 2.2(1) to 2.2(3), a low volume vehicle must comply with all relevant requirements specified in *Chapter 11 (Part 1) – Exhaust Noise & Gas Emissions of the NZ Car Construction Manual*.

Note 1	The relevant technical requirements and testing procedure for objective exhaust noise emission testing referred to in 2.2(4) are contained in <i>Chapter 11 (Part 1) – Exhaust Noise & Gas Emissions</i> of the <i>NZ Car Construction Manual</i> .
Note 2	An electronic version of <i>Chapter 11 (Part 1) - Exhaust Noise & Gas Emissions</i> , and all other chapters of the <i>NZ Car Construction Manual</i> , can be accessed from www.lvta.org.nz either individually or as a complete Manual, free of charge.
Note 3	Printed copies of LVV documents may become out of date, and should not be relied upon without ensuring that the version is current – visit www.lvta.org.nz to check that any document referred to is the latest version.

Section 3 Vehicles Not Required to Meet this Standard

3.1 Enforcement, Emergency, & Second-stage Manufactured Vehicles

- 3.1(1) A light vehicle is not required to meet this standard, if the vehicle is either:
- modified for the purpose of law enforcement or provision of emergency services; or
 - identified as having been modified by a second-stage vehicle manufacturer, and complies with an approved overseas standard that is listed in *Annex 6* of the *Low Volume Vehicle Code*, and has not been subsequently modified further.

3.2 Motor Sport Vehicles

- 3.2(1) A light vehicle is not required to meet this standard, if the vehicle is a Class MA or Class MC motor sport vehicle which complies with MotorSport New Zealand rules and regulations and is either:
- competing in an event that has been permitted by MotorSport New Zealand, or is being driven directly to or from competition in such an event; or
 - being used on a road for the purpose of inspection, certification, servicing, or repair of the vehicle.

Note 1	The exclusion specified in 3.2(1) is from <i>Land Transport Rule: Vehicle Equipment 2004</i> , and is reproduced here in the interest of convenience.
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